TREND MICRO™

5.0

TREND MICRO™ Endpoint Encryption

Administrator's Guide

Comprehensive Endpoint Encryption for Data at Rest

Endpoint Security

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http://docs.trendmicro.com/en-us/enterprise/endpoint-encryption.aspx

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Table of Contents

Preface

Preface ix

Document Set x

Intended Audience x

Document Conventions xi

About Trend Micro xii

Part I: Endpoint Encryption Overview

Chapter 1: Introducing Endpoint Encryption

About Endpoint Encryption 1-2

Key Features and Benefits 1-2

What's New in Version 5.0 Patch 2 1-3

About Encryption 1-8

Endpoint Encryption Components 1-9

Chapter 2: Devices and Users Overview

Endpoint Encryption Devices 2-2

Endpoint Encryption Users 2-4

Authentication Methods 2-6

Part II: Administration with Trend Micro Control Manager

Chapter 3: Getting Started with Control Manager

About Control Manager Integration 3-2

Control Manager Architecture 3-3
Configuring Control Manager Summary of Operations 3-6
Adding PolicyServer as a Managed Product to Control Manager 3-7
Configuring Directory Management for PolicyServer 3-9
Creating a Policy 3-11

Chapter 4: Dashboard, Widgets, and Reports

Using the Dashboard 4-2
Understanding Tabs 4-2
Understanding Widgets 4-4
Using Endpoint Encryption Widgets 4-8

Chapter 5: Policies in Control Manager

Groups 5-2
Understanding Policies 5-2
Understanding Policy Types 5-3
Understanding Policy Target Settings 5-6
Understanding the Policy List 5-6
Understanding the Managed Server List 5-27
Updating the Policy Templates 5-32

Chapter 6: Users in Control Manager

Endpoint Encryption Users Widget 6-3
Adding Users to Endpoint Encryption 6-4
Finding a User 6-10
Modifying a User 6-10
Working with Passwords 6-11
Working with Policy Membership 6-16

Chapter 7: Devices in Control Manager

Adding a Device to a Policy 7-3
Removing a Device From a Policy 7-6
Endpoint Encryption Devices Widget 7-7
Finding a Device 7-9
Getting a Software Token 7-9
Getting a Recovery Key 7-10
Viewing Device Attributes 7-11
Killing a Device 7-14
Locking a Device 7-15
Resetting a Device 7-15
Deleting a Device From the Enterprise 7-16
Restoring a Deleted Device 7-17

Part III: Administration with Endpoint Encryption PolicyServer MMC

Chapter 8: Getting Started with PolicyServer MMC

About PolicyServer MMC 8-2
Logging on to PolicyServer MMC 8-2
PolicyServer MMC Interface 8-4
Working with Groups and Users 8-5
Understanding Policy Controls 8-15
Disabling Agents 8-19

Chapter 9: Policies in PolicyServer MMC

Policy Overview 9-2
Automatic Policy Synchronization 9-14

PolicyServer Policies 9-14
Full Disk Encryption Policies 9-19
File Encryption Policies 9-26
Common Policies 9-30

Chapter 10: Groups in PolicyServer MMC

About Groups 10-2
Group Management 10-2
Offline Groups 10-13

Chapter 11: Users in PolicyServer MMC

Adding Users to Endpoint Encryption 11-3
Finding a User 11-8
Modifying a User 11-9
Viewing a User's Group Membership 11-10
Adding a New User to a Group 11-11
Adding an Existing User to a Group 11-13
Changing a User's Default Group 11-15
Allowing User to Install to a Group 11-16
Removing Users From a Group 11-17
Removing All Users From a Group 11-18
Restoring a Deleted User 11-18
Working with Passwords 11-19

Chapter 12: Devices in PolicyServer MMC

Adding a Device to a Group 12-3
Removing a Device from a Group 12-4
Deleting a Device from the Enterprise 12-5
Getting the Software Token 12-6

Using the Recovery Key 12-7
Viewing Device Attributes 12-8
Viewing Directory Listing 12-11
Viewing Group Membership 12-11
Killing a Device 12-12
Locking a Device 12-12
Resetting a Device 12-13
Restoring a Deleted Device 12-13

Part IV: Endpoint Encryption Agent Management

Chapter 13: File Encryption

About File Encryption 13-2
File Encryption Authentication 13-2
File Encryption Agent Menu 13-10
File Encryption Context Menu 13-13
File Encryption Archive Encryption 13-14
File Encryption Archive and Burn 13-18
File Encryption Secure Delete 13-19

Chapter 14: Full Disk Encryption

About Full Disk Encryption 14-2
Endpoint Encryption Tools 14-2
Full Disk Encryption Preboot 14-3
Full Disk Encryption Connectivity 14-17
Full Disk Encryption Recovery Console 14-20

Full Disk Encryption Recovery Methods 14-32
Repair CD 14-34
Patch Management with Full Disk Encryption 14-41

Chapter 15: Encryption Management for Third-Party Products

About Encryption Management Agents 15-2
Encryption Management Agent Policy Limitations 15-3
Encryption Management for Microsoft BitLocker 15-4
Encryption Management for Apple FileVault 15-10

Part V: Advanced Management and Technical Support

Chapter 16: Advanced Enterprise Features

Enterprise Maintenance 16-2
Restoring Deleted Users and Devices 16-10
Enterprise Log Events 16-11
Enterprise Reports 16-15

Chapter 17: Maintenance and Technical Support

Maintenance Agreement 17-2
Troubleshooting Resources 17-5
Contacting Trend Micro 17-7
Other Resources 17-8

Appendices

Appendix A: Introducing Trend Micro Control Manager

Control Manager Standard and Advanced A-3
Introducing Control Manager Features A-3
Control Manager Architecture A-5
Registering Endpoint Encryption to Control Manager A-8
Understanding User Access A-9
Understanding the Product Directory A-15
Downloading and Deploying New Components A-38
Using Logs A-65
Understanding Reports A-68

Appendix B: PolicyServer Message IDs

Appendix C: Endpoint Encryption Services

Appendix D: Policy Mapping Between Management Consoles

Appendix E: OfficeScan Integration

About Trend Micro OfficeScan Integration E-2
About Plug-in Manager E-3
Installing OfficeScan E-4
Using Plug-in Programs E-5
The OfficeScan Agent Tree E-5
Endpoint Encryption Agent Deployment E-10

Appendix F: Glossary

Index

Index IN-1

Preface

Preface

Welcome to the Trend Micro™ Endpoint Encryption Administrator's Guide. This guide explains the security architecture, management console options, user authentication, and endpoint management. This guide also describes how to configure the management consoles and Endpoint Encryption agents to support security objectives, how to provision Endpoint Encryption users, groups and devices to implement policies, how to use reports and logs to analyze enterprise security, and includes information about troubleshooting configurations, using tools, and resolving issues.

Topics include:

- *Document Set on page x*
- *Intended Audience on page x*
- *Document Conventions on page xi*
- *About Trend Micro on page xii*

Document Set

The documentation set for Trend Micro Endpoint Encryption includes the following:

TABLE 1. Product Documentation

DOCUMENT	DESCRIPTION
Administrator's Guide	Describes product concepts, features and detailed instructions about how to configure and manage PolicyServer, Full Disk Encryption, and File Encryption.
Installation and Migration Guide	Explains system requirements and contains detailed instructions about how to deploy, install, migrate, and upgrade PolicyServer, Full Disk Encryption, and File Encryption.
Online Help	All products contain an entry point to access the online help. The online help provides access the context-sensitive HTML help topics.
Readme File	Contains late-breaking product information that is not found in the online or printed documentation. Topics include a description of new features, known issues, and product release history.
Support Portal	An online database of problem-solving and troubleshooting information. It provides the latest information about known product issues. To access the Knowledge Base, go to the following website: http://esupport.trendmicro.com

Intended Audience

This guide is for IT Administrators deploying Trend Micro Endpoint Encryption in medium to large enterprises and Help Desk personnel who manage users, groups, policies, and devices. The documentation assumes basic device, networking and security knowledge, including:

- Endpoint hardware setup and configuration

- Basic endpoint encryption concepts
- Hard drive partitioning, formatting, and maintenance
- Client-server architecture

Document Conventions

The documentation uses the following conventions:

TABLE 2. Document Conventions

CONVENTION	DESCRIPTION
UPPER CASE	Acronyms, abbreviations, and names of certain commands and keys on the keyboard
Bold	Menus and menu commands, command buttons, tabs, and options
Italics	References to other documents
`Monospace`	Sample command lines, program code, web URLs, file names, and program output
Navigation > **Path**	The navigation path to reach a particular screen For example, **File** > **Save** means, click **File** and then click **Save** on the interface
Note	Configuration notes
Tip	Recommendations or suggestions
Important	Information regarding required or default configuration settings and product limitations

Convention	Description
WARNING!	Critical actions and configuration options

About Trend Micro

As a global leader in cloud security, Trend Micro develops Internet content security and threat management solutions that make the world safe for businesses and consumers to exchange digital information. With over 20 years of experience, Trend Micro provides top-ranked client, server, and cloud-based solutions that stop threats faster and protect data in physical, virtual, and cloud environments.

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Part I

Endpoint Encryption Overview

Chapter 1

Introducing Endpoint Encryption

This chapter introduces Endpoint Encryption features and capabilities.

Topics include:

- *About Endpoint Encryption on page 1-2*
- *Key Features and Benefits on page 1-2*
- *What's New in Version 5.0 Patch 2 on page 1-3*
- *About Encryption on page 1-8*
- *Endpoint Encryption Components on page 1-9*

About Endpoint Encryption

Trend Micro™ Endpoint Encryption ensures privacy by encrypting data stored on endpoints, files and folders, and removable media in a variety of platform options. Endpoint Encryption provides granular policy controls and flexibly integrates with other Trend Micro management tools, including Control Manager and OfficeScan. Innovative deployment capabilities help you easily deploy agent software using FIPS 140-2 hardware-based or software-based encryption that is fully transparent to end users, without disrupting productivity. Once deployed, automated reporting, auditing, and policy synchronization with Endpoint Encryption PolicyServer simplifies endpoint security management.

Endpoint Encryption has capabilities to deploy remote commands, recover lost data, and protect user identity while maintaining real-time policy synchronization. In the event that an endpoint is lost or stolen, remotely initiate a reset or "kill" command to immediately protect corporate information. Many recovery tools are also available to help end users rescue data from a corrupted hard disk. Assimilating into existing corporate identity controls, Endpoint Encryption has a variety of authentication methods, including Active Directory integration and resources for end users who have forgotten their credentials.

Key Features and Benefits

The following table explains Endpoint Encryption key features and benefits.

TABLE 1-1. Endpoint Encryption Key Features

FEATURE	BENEFITS
Encryption	• Protection for the full disk, including the master boot record (MBR), operating system, and all system files • Hardware-based and software-based encryption for mixed environments • Comprehensive data protection of files, folders, and removable media

FEATURE	BENEFITS
Authentication	• Flexible authentication methods, including both single and multi-factor • Control password strength and regularity for password changes • Policy updates before authentication and system boot • Configurable actions on failed password attempt threshold
Device management	• Policies to protect data on endpoints and removable media • Ability to remotely lock, reset, wipe, or kill a device
Central administration	• Flexibly use either PolicyServer MMC or Control Manager to manage PolicyServer • Deploy Endpoint Encryption agents to endpoints already managed by OfficeScan • Enforce security policies to individual users and policy groups from a single policy server • Instantly protect end user data by sending lock or erase commands to lost or stolen Endpoint Encryption devices • Automate policy enforcement with remediation of security events • Update security policies in real-time, before authentication, to revoke user credentials before booting the operating system
Record keeping, reports, and auditing	• Advanced real-time reporting and auditing to ensure security compliance • Analyze usage statistics with scheduled reports and alert notifications

What's New in Version 5.0 Patch 2

Trend Micro Endpoint Encryption 5.0 Patch 2 offers the following new features and enhancements.

TABLE 1-2. What's New in Endpoint Encryption 5.0 Patch 2

NEW FEATURE	DESCRIPTION
Active Directory Synchronization across Multiple OUs	Endpoint Encryption now supports policy enforcement, authentication, and synchronization across multiple organizational units (OUs). This enhancement allows administrators to manage users with the same policy over different security groups, cross-functional groups, or regional groups. Endpoint Encryption requires that separate OUs must be within the same Active Directory tree.
Simplified Active Directory Integration	The process for enabling automatic account synchronization from Active Directory has been streamlined. When managing Endpoint Encryption from Control Manager, administrators no longer need to access PolicyServer MMC in addition to the Control Manager web console. In addition, when configuring Active Directory from PolicyServer MMC, administrators no longer need to use the AD Synchronization Configuration Tool to complete configuration.
Supported Platforms	Endpoint Encryption supports PolicyServer installation on the following operating systems: • Windows Server 2012 • Windows Server 2012 R2 Endpoint Encryption supports the following database management systems for PolicyServer: • Microsoft SQL Server 2012 • Microsoft SQL Server 2012 Express Endpoint Encryption supports Encryption Management for Apple FileVault installation on the following operating system: • Mac OS X Yosemite™

New Feature	Description
Automated Deployment of Encryption Management for Apple FileVault	Endpoint Encryption supports automated deployments of Encryption Management for Apple FileVault agents. The process uses the same parameters and Command Line Helper tool for automated deployments of Full Disk Encryption, File Encryption, and Encryption Management for Microsoft BitLocker agents.
SanDisk Self-Encrypting SSD Support	Endpoint Encryption supports enabling and disabling of hardware-based full disk encryption of SanDisk™ self-encrypting solid-state drives (SSDs).

Table 1-3. What's New in Endpoint Encryption 5.0 Patch 1

New Feature	Description
Control Manager License Management	Endpoint Encryption PolicyServer integrates with Control Manager License Management. Control Manager supports the following features with Endpoint Encryption: • View the current Endpoint Encryption license information • Deploy a full license to PolicyServer • Renew a license to PolicyServer
Control Manager User-Centered Visibility	Endpoint Encryption integrates with Control Manager User-Centered Visibility. The status logs sent to Control Manager include the user information for the following Endpoint Encryption agents: • Full Disk Encryption • File Encryption • Encryption Management for Microsoft BitLocker • Encryption Management for Apple FileVault

New Feature	Description
NIC and WiFi adapter Support	Endpoint Encryption supports the following groups of network interface controllers (NIC): • Intel Ethernet Controller I217 Family • Intel Ethernet Controller I218 Family Endpoint Encryption also supports the Intel Dual Band AC 7260 WiFi adapter.

Table 1-4. What's New in Endpoint Encryption 5.0

New Feature	Description
New Communication Interface	Endpoint Encryption 5.0 introduces a new communication interface (Endpoint Encryption Service) that all Endpoint Encryption 5.0 Patch 2 agents and management consoles use to communicate with PolicyServer. Endpoint Encryption Service uses a Representational State Transfer web API (RESTful) with an AES-GCM encryption algorithm. Endpoint Encryption Service has three key features: • Access control: After user authentication, PolicyServer generates a token for that user in that session only. • Policy control: Before user authentication, Endpoint Encryption Service restricts all PolicyServer MMC, Control Manager, and OfficeScan policy transactions until after user authentication. • Automatic policy updates: After successfully registering with PolicyServer, Endpoint Encryption agents automatically obtain new policies without user authentication.
Control Manager Integration	Endpoint Encryption 5.0 integrates Control Manager for PolicyServer management. For information about Control Manager, see *About Control Manager Integration on page 3-2*.

New Feature	Description
OfficeScan Integration	Endpoint Encryption 5.0 provides support for OfficeScan deployments. Use the new Endpoint Encryption Deployment Tool plug-in to centrally deploy or uninstall Endpoint Encryption agents to any endpoint currently managed by OfficeScan.
License Management	Endpoint Encryption 5.0 integrates with the Trend Micro licensing portal. As in previous product versions, you can try Endpoint Encryption free for 30 days. After the trial license expires, an Activation Code is required. For information about licensing, see *Maintenance Agreement on page 17-2*.
Support for Apple FileVault™ and Microsoft BitLocker™	Endpoint Encryption 5.0 advances Full Disk Encryption by integrating with encryption solutions built into the host operating system through two new Endpoint Encryption agents: • Encryption Management for Microsoft BitLocker • Encryption Management for Apple FileVault PolicyServer centrally manages both agents with policy controls to remotely wipe or kill the Endpoint Encryption device.
FileArmor Name Change and Move to Common Framework	Endpoint Encryption 5.0 renames the FileArmor agent to File Encryption to better match the Endpoint Encryption agent's new functionality. File Encryption has the benefits from FileArmor 3.1.3, including improved support for removable media. File Encryption is also now better aligned with Full Disk Encryption for improved password and policy management.

New Feature	Description
Maintenance, Log, and Report Enhancements	Endpoint Encryption 5.0 has several improvements to product maintenance, logs and reports. • Mechanism to purge log database: It is now possible to purge the log database based on specific criteria. • Delete inactive Endpoint Encryption users and devices: To clean up the Enterprise devices and users, it is now possible to purge devices and users that are inactive for a specified time period. • Enterprise report for inactive users: The new Enterprise report shows all Endpoint Encryption users who have not logged on Endpoint Encryption devices for a specified period of time. • Enterprise report for inactive devices: The new Enterprise report shows all Endpoint Encryption devices that have not been logged on to for a specified duration of time.
Smart Card Enhancements	Endpoint Encryption 5.0 provides the following smart card enhancements: • Improved Endpoint Encryption agent deployment in environments using smart cards • Support for smart card password-sharing

About Encryption

Encryption is the process of making data unreadable unless there is access to the encryption key. Perform encryption via software or hardware (or a combination of the two) to protect data locally on an endpoint hard drive, on removable media, or in specific files and folders, and on data in transit across networks or the Internet. Endpoint encryption is the most important way to assure data security and to ensure that regulatory compliance mandates for data protection are met.

About FIPS

The *Federal Information Processing Standard (FIPS) Publication 140-2* is a United States government device security standard that specifies the security requirements for encryption modules. The following table explains the four levels of FIPS 140-2 security:

TABLE 1-5. FIPS 140-2 Security Levels

LEVEL	DESCRIPTION
1	Requires all encryption components to be production grade, and absent of obvious security holes.
2	Includes level 1 requirements and adds physical tamper-evidence and role-based authentication.
3	Includes level 2 requirements and adds physical tamper-resistance and identity-based authentication.
4	Includes level 3 requirements and adds additional physical security requirements.

Endpoint Encryption Components

Endpoint Encryption consists of one central management server (PolicyServer) that manages the policy and log databases, authentication, and all client-server activity. Deploy several unique Endpoint Encryption agents that each perform specific encryption tasks. All Endpoint Encryption agents communicate via an encrypted channel.

Flexibly manage Endpoint Encryption using only PolicyServer MMC or manage Endpoint Encryption using Control Manager for policy, user and device management and PolicyServer MMC for advanced log management and reporting.

Endpoint Encryption integrates with OfficeScan. Use the Endpoint Encryption Deployment Tool plug-in to deploy the Endpoint Encryption agent software to any OfficeScan managed endpoint.

Note

For information about deployment scenarios, see *Deployment and Upgrade Overview* in the *Endpoint Encryption Installation and Migration Guide*.

The following illustration shows the Endpoint Encryption components and communication protocols.

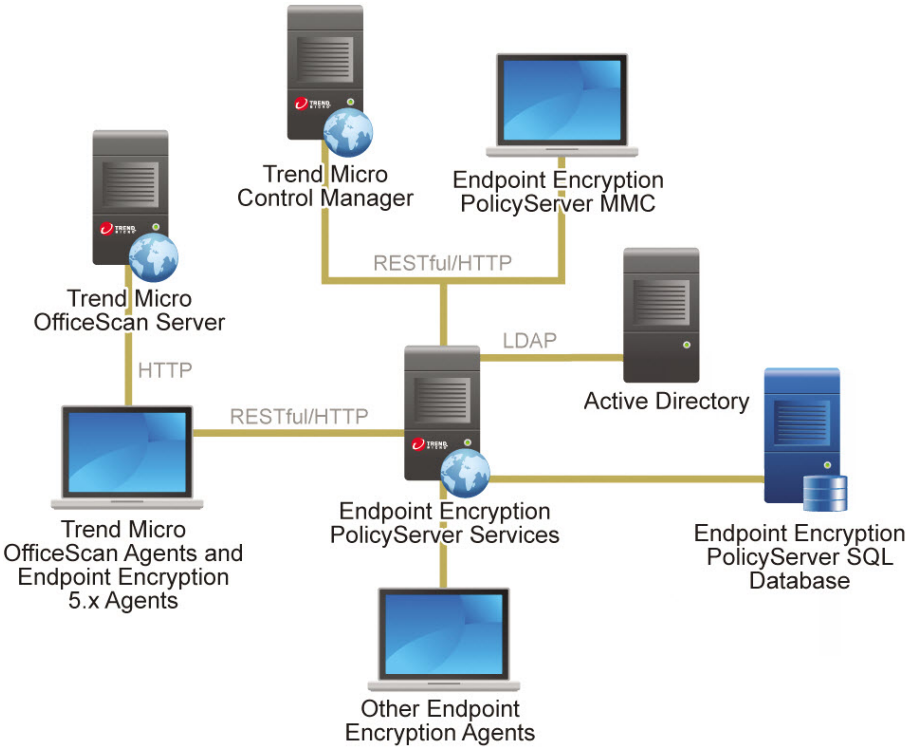


FIGURE 1-1. Endpoint Encryption Architecture

The following table describes these components.

TABLE 1-6. Endpoint Encryption Components

COMPONENT	DESCRIPTION
Endpoint Encryption PolicyServer Services	PolicyServer consists of several services that centrally control policies, authentication, and reporting. PolicyServer consists of the following: • Endpoint Encryption Service • Legacy Web Service • PolicyServer Windows Service For information about PolicyServer, see *About PolicyServer on page 1-12*.
Endpoint Encryption PolicyServer SQL Database	The Microsoft™ SQL Server database stores all user, policy, and log information. Install the database on the same server as PolicyServer, or separately. Flexibly configure PolicyServer using Microsoft SQL Server or Microsoft SQL Express. For information about database configuration options, see the *Endpoint Encryption Installation and Migration Guide*.
Endpoint Encryption PolicyServer MMC	PolicyServer MMC is the native interface option to remotely manage PolicyServer.
Trend Micro Control Manager	Trend Micro Control Manager is an option to remotely manage PolicyServer while also integrating with other managed Trend Micro products. Administrators can use the policy management feature to configure and deploy product settings to managed products and endpoints. The Control Manager web-based management console provides a single monitoring point for antivirus and content security products and services throughout the network.

Component	Description
Endpoint Encryption 5.0 Patch 2 agents	All Endpoint Encryption 5.0 Patch 2 agents communicate with the PolicyServer Endpoint Encryption Service using a RESTful web API. For more information about Endpoint Encryption agents, see: • *About Full Disk Encryption on page 14-2* • *About File Encryption on page 13-2* For information about Endpoint Encryption agent communications, see *About PolicyServer on page 1-12*. **Note** Configure port settings during Endpoint Encryption agent installation. Full Disk Encryption can use Recovery Console to change the assigned port number.
Other Endpoint Encryption agents	All legacy Endpoint Encryption agents (3.1.3 and older) communicate to the Legacy Web Service on PolicyServer. For details about agent communications, see *About PolicyServer on page 1-12*.
Active Directory	PolicyServer synchronizes user account information by communicating with Active Directory using LDAP. Account information is cached in the Microsoft SQL database. **Note** Active Directory is optional.

About PolicyServer

Trend Micro PolicyServer manages encryption keys and synchronizes policies across all endpoints in the organization. PolicyServer also enforces secure authentication and provides real-time auditing and reporting tools to ensure regulatory compliance. You can flexibly manage PolicyServer with PolicyServer MMC or with Trend Micro Control

Manager. Other data management features include user-based self-help options and device actions to remotely reset or "kill" a lost or stolen device.

The following table describes the PolicyServer components that you can deploy on one server or multiple servers, depending on environmental needs.

TABLE 1-7. PolicyServer Components

COMPONENT	DESCRIPTION
Enterprise	The Endpoint Encryption Enterprise is the unique identifier about the organization in the PolicyServer database configured when installing PolicyServer. One PolicyServer database may have one Enterprise configuration.
Database	The PolicyServer Microsoft SQL database securely stores all user, device, and log data. The database is either configured on a dedicated server or added to an existing SQL cluster. The log and other databases can reside separately.
PolicyServer Windows Service	PolicyServer Windows Service manages all communication transactions between the host operating system, Endpoint Encryption Service, Legacy Web Service, Client Web Proxy, and SQL databases.
Endpoint Encryption Service	All Endpoint Encryption 5.0 Patch 2 agents use Endpoint Encryption Service to communicate with PolicyServer. Endpoint Encryption Service uses a Representational State Transfer web API (RESTful) with an AES-GCM encryption algorithm. After a user authenticates, PolicyServer generates a token related to the specific policy configuration. Until the Endpoint Encryption user authenticates, the service denies all policy transactions. To create a three level network topography, the service can also be separately deployed to an endpoint residing in the network DMZ, which allows PolicyServer to safely reside behind the firewall. For information about deployment scenarios, see the *Endpoint Encryption Installation and Migration Guide*.

COMPONENT	DESCRIPTION
Legacy Web Service	All Endpoint Encryption 3.1.3 and older agents use Simple Object Access Protocol (SOAP) to communicate with PolicyServer. Under certain situations, SOAP may allow insecure policy transactions without user authentication. Legacy Web Service filters SOAP calls by requiring authentication and limiting the commands that SOAP accepts. To create a three level network topography, the service can also be separately deployed to an endpoint residing in the network DMZ, which allows PolicyServer to safely reside behind the firewall. For information about deployment scenarios, see the *Endpoint Encryption Installation and Migration Guide*.

Management Consoles

Depending on endpoint security and existing infrastructure needs, you can manage Endpoint Encryption using only one management console or a combination of several management consoles. The following table describes the management consoles available to manage Endpoint Encryption.

TABLE 1-8. Endpoint Encryption Management Consoles

MANAGEMENT CONSOLE	DESCRIPTION
PolicyServer MMC	The PolicyServer Microsoft Management Console plug-in (PolicyServer MMC) is the native management console for Endpoint Encryption policy, user, and device administration. Use PolicyServer MMC to centrally manage: • All Endpoint Encryption users, devices, and groups • All policies including encryption, password complexity and authentication • Remote device actions, including killing a device, erasing data, or delaying authentication • Event logs about authentication events, management events, device encryption status, and security violations • Remote Help password reset process • Auditing and reporting options

Management Console	Description
Control Manager	Trend Micro Control Manager is a central management console that manages Trend Micro products and services at the gateway, mail server, file server, and corporate desktop levels. Administrators can use the policy management feature to configure and deploy product settings to managed products and endpoints. The Control Manager web-based management console provides a single monitoring point for antivirus and content security products and services throughout the network. Create multilayer security by integrating Endpoint Encryption with Control Manager as a managed Trend Micro product. Flexibly manage Endpoint Encryption using only PolicyServer MMC or manage Endpoint Encryption using Control Manager for policy, user and device management and PolicyServer MMC for advanced log management and reporting.
OfficeScan	OfficeScan protects enterprise networks from malware, network viruses, web-based threats, spyware, and mixed threat attacks. An integrated solution, OfficeScan consists of an agent that resides at the endpoint and a server program that manages all agents. Use the OfficeScan Endpoint Encryption Deployment Tool plug-in to centrally deploy or uninstall Endpoint Encryption agents to any endpoint currently managed by OfficeScan.

Endpoint Encryption Agents

The following table describes the Endpoint Encryption agents available for a variety of environments.

Agent	Description
File Encryption	The Endpoint Encryption agent for file and folder encryption on local drives and removable media. Use File Encryption to protect files and folders located on virtually any device that appears as a drive within the host operating system. For more information, see *About File Encryption on page 13-2*.
Full Disk Encryption	The Endpoint Encryption agent for hardware and software encryption with preboot authentication. Use Full Disk Encryption to secure data files, applications, registry settings, temporary files, swap files, print spoolers, and deleted files on any Windows endpoint. Strong preboot authentication restricts access vulnerabilities until the user is validated. For more information, see *About Full Disk Encryption on page 14-2*.
Encryption Management for Microsoft BitLocker	The Endpoint Encryption Full Disk Encryption agent for Microsoft Windows environments that simply need to enable Microsoft BitLocker on the hosting endpoint. Use the Encryption Management for Microsoft BitLocker agent to secure endpoints with Trend Micro full disk encryption protection in an existing Windows infrastructure. For more information, see *About Full Disk Encryption on page 14-2*.
Encryption Management for Apple FileVault	The Endpoint Encryption Full Disk Encryption agent for Mac OS environments that simply need to enable Apple FileVault on the hosting endpoint. Use the Encryption Management for Apple FileVault agent to secure endpoints with Trend Micro full disk encryption protection in an existing Mac OS infrastructure. For more information, see *About Full Disk Encryption on page 14-2*.

Note

Endpoint Encryption 5.0 does not have KeyArmor devices. However, legacy KeyArmor devices are supported.

Chapter 2

Devices and Users Overview

This chapter explains how Endpoint Encryption protects user identity and endpoint access. Correctly configuring Endpoint Encryption users, policy groups, and devices ensures that data remains encrypted from unauthorized users, thus preventing data loss risk from accidental information release or deliberate sabotage.

Topics include:

- *Endpoint Encryption Devices on page 2-2*
- *Endpoint Encryption Users on page 2-4*
- *Authentication Methods on page 2-6*

Endpoint Encryption Devices

Endpoint Encryption devices are Endpoint Encryption agents that have registered with PolicyServer. Installing any Endpoint Encryption agent automatically registers the endpoint with PolicyServer as a new Endpoint Encryption device. Since multiple Endpoint Encryption agents may protect a given endpoint, a single endpoint may appear as more than one Endpoint Encryption device on PolicyServer.

You can set policy rules that automatically trigger after too many failed authentication attempts or when the Endpoint Encryption agent has outdated policies. The following policy rules are available:

- Time delay
- Remote authentication required
- Erase device

PolicyServer can instantly act upon a lost or stolen endpoint by initiating a remote action upon the associated Endpoint Encryption device. The following remote actions are available:

- Software token
- Recovery key
- Kill device
- Lock device
- Soft reset

Endpoint Encryption Device Policy Rules

The following table explains the security policy rules for lost or stolen Endpoint Encryption devices. Depending on the policy settings, too many consecutive unsuccessful authentication attempts to the Endpoint Encryption devices delays the next authentication attempt, locks the Endpoint Encryption device, or erases all data controlled by the associated Endpoint Encryption agent.

TABLE 2-1. Device Security Options

SECURITY OPTION	DESCRIPTION
Time delay	After exceeding the allowed number of failed authentication attempts, PolicyServer temporarily locks the Endpoint Encryption device and notifies the Endpoint Encryption user that the device is locked. The ability to authenticate or reset the password is disabled during the time delay. The duration of the time delay is determined by policy. Once the time delay has expired, the user is permitted to authenticate. **Note** The Endpoint Encryption user may use Self Help or Remote Help authentication to avoid waiting for the time delay period to expire.
Remote authentication required	After exceeding the allowed number of failed authentication attempts, PolicyServer locks the Endpoint Encryption device until the Endpoint Encryption user contacts Technical Support for Remote Help authentication. **Note** For more information, see *Remote Help on page 2-11*.
Erase the device	After exceeding the allowed number of failed authentication attempts, PolicyServer erases all data controlled by the associated Endpoint Encryption agent. For example, erasing a Full Disk Encryption device deletes all data from the endpoint, while erasing a File Encryption device deletes all files and folders in local or removable storage protected by the File Encryption agent. **WARNING!** The Endpoint Encryption user cannot recover the erased data.

Endpoint Encryption Device Remote Actions

The following table explains the remote actions that PolicyServer can send to the Endpoint Encryption device.

TABLE 2-2. Endpoint Encryption Device Security

DEVICE ACTION	DESCRIPTION
Software Token	Generating a “software token” creates a unique string that you can use to unlock Endpoint Encryption devices and to remotely help Endpoint Encryption users reset forgotten passwords.
Recovery Key	Generating a “recovery key” allows the user to decrypt a hard disk when the user has forgotten the original password or key. The recovery key is only available to Encryption Management for Apple FileVault and Encryption Management for Microsoft BitLocker agents because they do not use the other recovery methods available in Full Disk Encryption.
Kill device	Initiating a “kill” command deletes all Endpoint Encryption device data. The deleted data is different depending on the scope of data that the associated Endpoint Encryption agent manages. For example, initiating a “kill” command to a Full Disk Encryption device deletes all data from the endpoint, while initiating a “kill” command to a File Encryption device deletes all files and folders in local or removable storage protected by the File Encryption agent. The “kill” command is issued when the Endpoint Encryption agent communicates with PolicyServer.
Lock device	Initiating a “lock” command to the Endpoint Encryption device prevents Endpoint Encryption user access until after performing a successful Remote Help authentication. Locking a device reboots the endpoint and forces it into a state that requires Remote Help. The lock command is issued when the Endpoint Encryption agent communicates with PolicyServer.
Soft reset	Initiating a “soft reset” command reboots the endpoint. The command issues the next time that the agent communicates with PolicyServer.

Endpoint Encryption Users

Endpoint Encryption users are any user account manually added to PolicyServer or synchronized with Active Directory.

Endpoint Encryption has several types of account roles and authentication methods for comprehensive identity-based authentication and management. Using Control Manager

or PolicyServer MMC, you can add or import user accounts, control authentication, synchronize with the Active Directory, and manage policy group membership, as needed.

Endpoint Encryption User Roles

The following table explains the Endpoint Encryption user account types intended for different roles within the Enterprise or policy group. Each role determines the permissions granted when the user accesses Endpoint Encryption management consoles and devices.

TABLE 2-3. Endpoint Encryption Account Roles

ROLE	DESCRIPTION
Enterprise Administrator	Intended for administrators who control the Enterprise and require administrative rights to all groups, users, devices, and policies regardless of where they reside.
Group or Policy Administrator*	Intended for administrators who control any assigned group or policy. **Note** Privileges do not apply to parent groups, groups at the same level in the hierarchy or their subgroups.
Enterprise Authenticator	Intended for Help Desk personnel who provide remote assistance when users forget their Endpoint Encryption password or have a technical problem. Enterprise Authenticators have configurable privileges for the Enterprise.
Group or Policy Authenticator*	Intended for Help Desk personnel with the same privileges as the Enterprise Authenticator except for being limited to the assigned group or policy only.
User	Intended for basic end users with no special privileges. The user role cannot log on to Endpoint Encryption management consoles.

Note

*Due to differences in policy architecture, Control Manager merges the policy and group structure of PolicyServer MMC. The following roles are the same between PolicyServer MMC and Control Manager:

- Group Administrator (PolicyServer MMC) and Policy Administrator (Control Manager)
- Group Authenticator (PolicyServer MMC) and Policy Authenticator (Control Manager)

Authentication Methods

Endpoint Encryption administrators and users have several authentication methods to log on to Endpoint Encryption devices. The methods available are determined by the PolicyServer policy configuration.

TABLE 2-4. Supported Authentication Methods

AUTHENTICATION METHOD	DESCRIPTION
ColorCode™	A unique sequence of colors.
Domain authentication	Active Directory LDAP synchronization for single sign-on (SSO).
Fixed password	A string of characters, numbers, and symbols.
PIN	A standard Personal Identification Number (PIN).
Remote Help	Interactive authentication for users who forget their credentials or devices that have not synchronized policies within a predetermined amount of time.
Self Help	Question and answer combinations that allow users to reset a forgotten password without contacting Technical Support.
Smart card	A physical card used in conjunction with a PIN or fixed password.

Important Note About PolicyServer MMC Requirement

You must use PolicyServer MMC to configure the authentication methods available to Endpoint Encryption users. It is not possible to use Control Manager to configure the allowed authentication methods. However, you can configure Control Manager for domain authentication.

In PolicyServer MMC, configure policies for each Endpoint Encryption agent.

- For Full Disk Encryption, see *Password Policies on page 9-25*.
- For File Encryption, see *Login Policies on page 9-28*.

Note

Remote Help authentication is triggered by Endpoint Encryption device policy rules. Remote Help policy rules are configurable in both PolicyServer MMC and Control Manager. For more information, see *Remote Help Policy Rules on page 2-11*.

For information about configuring domain authentication, see *Domain Authentication Policy Rules on page 2-10*.

Authentication Restrictions

The following table explains the authentication options available in PolicyServer MMC and the Endpoint Encryption agents.

Table 2-5. Authentication Restrictions

Agent	Authentication Option					
	Fixed Password	Domain Password	Smart Card	PIN	RSA	ColorCode
PolicyServer MMC	●	●	●			
Control Manager	●	●				
OfficeScan	●	●				

Agent	Authentication Option					
	Fixed Password	Domain Password	Smart Card	PIN	RSA	ColorCode
Full Disk Encryption	●	●	●	●		●
File Encryption	●	●	●	●		●
KeyArmor	●		●	●	●	●

Note

Encryption Management for Apple FileVault and Encryption Management for Microsoft BitLocker do not require authentication and are not affected by authentication policies. Client, login, password, and authentication policies, or allowing the user to uninstall the Endpoint Encryption agent software only affects the Full Disk Encryption and File Encryption agents.

ColorCode

ColorCode™ is a unique authentication method designed for quick access and easy memorization. Rather than alphanumeric characters or symbols for the password,

ColorCode authentication consists of a user-created color sequence (example: red, red, blue, yellow, blue, green).

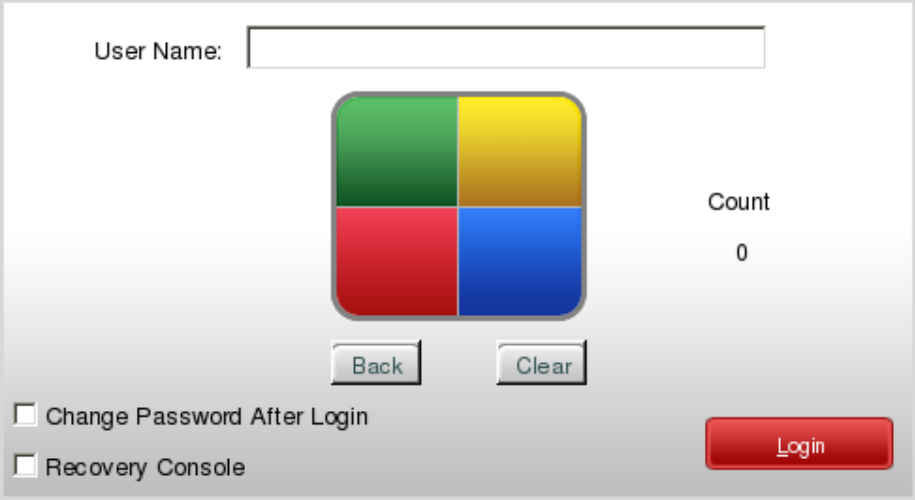


FIGURE 2-1. ColorCode Authentication Screen

Domain Authentication

Endpoint Encryption integrates with Active Directory using LDAP configured in PolicyServer. Endpoint Encryption domain authentication allows Endpoint Encryption users to use single sign-on (SSO) between the operating system and the Endpoint Encryption agent. For example, Endpoint Encryption users with domain authentication must only provide their credentials once to authenticate to the Full Disk Encryption preboot, log on to Windows, and access the files protected by File Encryption.

For seamless Active Directory integration, make sure that the following requirements are met:

- All Endpoint Encryption devices are in the same domain as PolicyServer.
- The user names configured in Active Directory exactly match the user names configured in PolicyServer (including case).

- The user names are located within a PolicyServer group and the Domain Authentication policy is enabled.
- The host name and domain name are configured correctly based on the LDAP or Active Directory server settings.

Note

For information about configuring LDAP and Active Directory settings, see the *Endpoint Encryption Installation and Migration Guide* available at:

http://docs.trendmicro.com/en-us/enterprise/endpoint-encryption.aspx

Domain Authentication Policy Rules

Enable domain authentication using one of the following methods:

- In Control Manager, edit or modify a policy's **Users** rules.

  For more information, see *Configuring Endpoint Encryption Users Rules on page 3-14*.

- In PolicyServer MMC, open the group and go to **Enterprise Policies** > **Common** > **Authentication** > **Network Login** > **Domain Authentication**.

Note

For information about configuring LDAP and Active Directory settings, see the *Endpoint Encryption Installation and Migration Guide* available at:

http://docs.trendmicro.com/en-us/enterprise/endpoint-encryption.aspx

Fixed Password

Fixed password authentication is the most common authentication method. The fixed password is created by the user and can be almost any string of numbers, characters, or symbols. You can place restrictions on fixed passwords to ensure that they are not easily compromised.

PIN

A Personal Identification Number (PIN) is common identification method requiring a unique sequences numbers. The PIN is created by the user and can be almost anything. Similar to fixed passwords, you may place restrictions on the PIN combination.

Remote Help

Remote Help allows Group or Enterprise Authenticators to assist Endpoint Encryption users who are locked out and cannot log on to Endpoint Encryption devices after too many unsuccessful log on attempts, or when the period between the last PolicyServer synchronization has been too long.

Remote Help Policy Rules

The following table describes the locations of the account lockout and device lock policies that affect Remote Help authentication. Use it to understand which policies are appropriate to set.

TABLE 2-6. Remote Help Policy Locations

POLICY NAME	POLICYSERVER MMC MENU PATH	CONTROL MANAGER MENU PATH	DESCRIPTION
Account Lockout Action	**Login** > **Account Lockout Action**	**Common** > **Lockout and Lock Device Actions** > **Account Lockout Action**	The action taken when the length of time in “Account Lockout Actions” include: erase, remote authentication.
Account Lockout Period	**Login** > **Account Lockout Period**	**Common** > **Lockout and Lock Device Actions** > **Lock account after [ ] days**	The number of days that a device can not communicate with PolicyServer before “Account Lockout Action” is called.

Policy Name	PolicyServer MMC Menu Path	Control Manager Menu Path	Description
Device Locked Action	For each agent: **Login** > **Device Locked Action**	For each agent: **Common** > **Lockout and Lock Device Actions** > **Device locked action**	The action taken when the "Failed Attempts Allowed" policy value has been exceeded. Actions include: time delay, erase, remote authentication.
Failed Login Attempts Allowed	For each agent: **Login** > **Failed Login Attempts Allowed**	For each agent: **Common** > **Lockout and Lock Device Actions** > **Failed logon attempts allowed**	The number of failed login attempts allowed before executing the action defined in "Device Locked".

Self Help

Self Help authentication allows Endpoint Encryption users who have forgotten the credentials to answer security questions and log on to Endpoint Encryption devices without getting Technical Support assistance. Self Help is not available to Enterprise or Group Administrator and Authenticator accounts. Self Help requires the Endpoint Encryption user to respond with answers to predefined personal challenge questions. Self Help can replace fixed password or other authentication methods.

Note

Self Help is only configurable with PolicyServer MMC.

Make sure to allow Self Help authentication. For more information, see *Authentication Policies on page 9-30*.

WARNING!

Self Help can have a maximum of six questions. Do not create more than six questions or users cannot log on using Self Help authentication.

Smart Card

Smart card authentication requires both a PIN and a physical token to confirm the user identity. To use smart card authentication, make sure that the following requirements are met:

- The smart card reader is connected to the endpoint and the smart card is inserted into the smart card reader.
- ActivClient 6.1 with all service packs and updates are installed.
- Specify the smart card PIN in the password field.

WARNING!

Failure to provide a correct password sends a password error and may result in locking the smart card.

Note

Smart card authentication is only configurable with PolicyServer MMC.

Enable smart card authentication for each Endpoint Encryption agent:

- For File Encryption, go to **Login** > **Password** > **Physical Token Required**.
- For Full Disk Encryption, go to **Full Disk Encryption** > **Login** > **Token Authentication**

Smart Card Registration

Smart card certificates are associated with the user account and the user's assigned group. Once registered, the user can use smart card authentication from any Endpoint Encryption device in that group. Users are free to use any Endpoint Encryption device in their group and do not need to ask for another one-time password.

Use one of the following methods to register a smart card:

- To use the Full Disk Encryption preboot, see *Registering a Smart Card in Full Disk Encryption Preboot on page 11-25*.

- To use PolicyServer MMC, see *Configuring Smart Card Authentication in PolicyServer MMC on page 11-24*.

Part II

Administration with Trend Micro Control Manager

Chapter 3

Getting Started with Control Manager

This chapter explains how to get started using Trend Micro Control Manager to manage PolicyServer.

Topics include:

- *About Control Manager Integration on page 3-2*
- *Control Manager Architecture on page 3-3*
- *Configuring Control Manager Summary of Operations on page 3-6*
- *Adding PolicyServer as a Managed Product to Control Manager on page 3-7*
- *Configuring Directory Management for PolicyServer on page 3-9*
- *Creating a Policy on page 3-11*

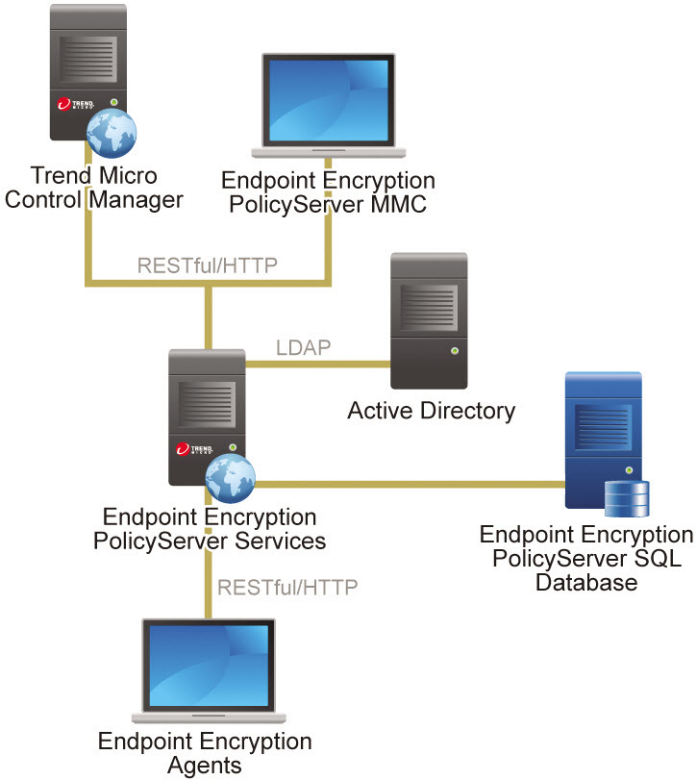
About Control Manager Integration

Flexibly manage Endpoint Encryption using only PolicyServer MMC or manage Endpoint Encryption using Control Manager for policy, user and device management and PolicyServer MMC for advanced log management and reporting.

Trend Micro Control Manager is a central management console that manages Trend Micro products and services at the gateway, mail server, file server, and corporate desktop levels. Administrators can use the policy management feature to configure and deploy product settings to managed products and endpoints. The Control Manager web-based management console provides a single monitoring point for antivirus and content security products and services throughout the network.

Control Manager enables system administrators to monitor and report on activities such as infections, security violations, or virus/malware entry points. System administrators can download and deploy update components throughout the network, helping ensure that protection is consistent and up to date. Example update components include virus pattern files, scan engines, and anti-spam rules. Control Manager allows both manual and pre-scheduled updates. Control Manager allows the configuration and administration of products as groups or as individuals for added flexibility.

The following illustration explains how to deploy Endpoint Encryption for the first time using Control Manager to manage PolicyServer. In a Control Manager deployment, administrators use Control Manager for all Endpoint Encryption policy, user, and device controls, and only use PolicyServer MMC for advanced Enterprise maintenance.



Note

In environments that use Control Manager, changes to PolicyServer policies are always controlled by Control Manager. Any changes made using PolicyServer MMC are overwritten the next time that Control Manager synchronizes policies to the PolicyServer database.

Control Manager Architecture

Trend Micro Control Manager provides a means to control Trend Micro products and services from a central location. This application simplifies the administration of a

corporate virus/malware and content security policy. The following table provides a list of components Control Manager uses.

TABLE 3-1. Control Manager Components

COMPONENT	DESCRIPTION
Control Manager server	Acts as a repository for all data collected from the agents. It can be a Standard or Advanced Edition server. A Control Manager server includes the following features: • An SQL database that stores managed product configurations and logs Control Manager uses the Microsoft SQL Server database (`db_ControlManager.mdf`) to store data included in logs, Communicator schedule, managed product and child server information, user account, network environment, and notification settings. • A web server that hosts the Control Manager web console • A mail server that delivers event notifications through email messages Control Manager can send notifications to individuals or groups of recipients about events that occur on the Control Manager network. Configure Event Center to send notifications through email messages, Windows event log, MSN Messenger, SNMP, Syslog, pager, or any in-house/industry standard application used by your organization to send notification. • A report server, present only in the Advanced Edition, that generates antivirus and content security product reports A Control Manager report is an online collection of figures about security threat and content security events that occur on the Control Manager network.

Component	Description
Trend Micro Management Communication Protocol	MCP handles the Control Manager server interaction with managed products that support the next generation agent. MCP is the new backbone for the Control Manager system. MCP agents install with managed products and use one/two way communication to communicate with Control Manager. MCP agents poll Control Manager for instructions and updates.
Trend Micro Management Infrastructure	Handles the Control Manager server interaction with older managed products. The Communicator, or the Message Routing Framework, is the communication backbone of the older Control Manager system. It is a component of the Trend Micro Management Infrastructure (TMI). Communicators handle all communication between the Control Manager server and older managed products. They interact with Control Manager 2.x agents to communicate with older managed products.
Control Manager 2.x Agents	Receives commands from the Control Manager server and sends status information and logs to the Control Manager server The Control Manager agent is an application installed on a managed product server that allows Control Manager to manage the product. Agents interact with the managed product and Communicator. An agent serves as the bridge between managed product and communicator. Therefore, install agents on the same computer as managed products.
Web-based management console	Allows an administrator to manage Control Manager from virtually any computer with an Internet connection and Windows™ Internet Explorer™ The Control Manager management console is a web-based console published on the Internet through the Microsoft Internet Information Server (IIS) and hosted by the Control Manager server. It lets you administer the Control Manager network from any computer using a compatible web browser.

Component	Description
Widget Framework	Allows an administrator to create a customized dashboard to monitor the Control Manager network.

Configuring Control Manager Summary of Operations

The following procedure provides an overview to configure Control Manager for Endpoint Encryption management.

Note

For information about individual policy configurations, see *Policies in Control Manager on page 5-1*.

Procedure

1. Install and configure PolicyServer.

   See the *Endpoint Encryption Installation and Migration Guide*.

2. Connect PolicyServer to Control Manager.

   a. *Adding PolicyServer as a Managed Product to Control Manager on page 3-7*

   b. *Configuring Directory Management for PolicyServer on page 3-9*

3. Add policy targets.

   See *Creating a Policy on page 3-11*.

4. Verify the policy configuration on PolicyServer MMC.

Adding PolicyServer as a Managed Product to Control Manager

Endpoint Encryption allows administrators to use Trend Micro Control Manager to control PolicyServer and manage Endpoint Encryption agent policies or use Trend Micro OfficeScan to deploy Endpoint Encryption agent software on managed endpoints.

To use Control Manager to manage PolicyServer, you must add PolicyServer as a managed product.

Make sure to complete the following tasks before proceeding:

1. Install and configure Control Manager.

   See the supporting documentation at:

   http://docs.trendmicro.com/en-us/enterprise/control-manager.aspx

2. Install and configure PolicyServer.

   See the *Endpoint Encryption Installation and Migration Guide*.

Important

Endpoint Encryption supports only one configured PolicyServer instance in Control Manager at a time. It is not possible to add multiple PolicyServer configurations. To configure a different PolicyServer, first remove the previously configured PolicyServer.

Procedure

1. Review all system requirements for compatible product versions.

   See the *Endpoint Encryption Installation and Migration Guide*.

2. Log on to Control Manager.

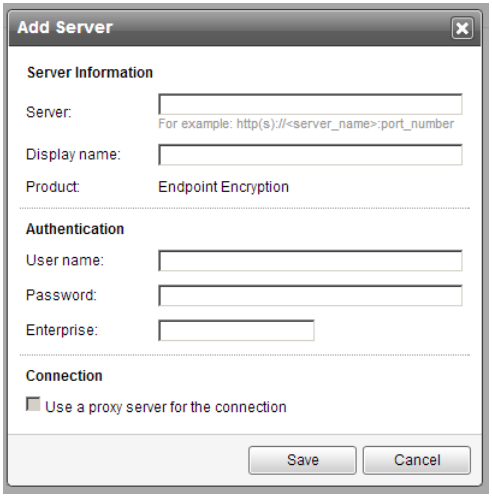
3. Go to **Policies** > **Policy Resources** > **Managed Servers**.

   The **Managed Servers** screen appears.

4. In the **Server Type** drop-down list, select **Endpoint Encryption**.

5. Click **Add**.

   The **Add Server** screen appears.



6. Specify **Server Information** options.

   - **Server**: Specify the PolicyServer host name and the port number. Use the following format:

     ```
     http(s)://<server_name>:port_number
     ```

     Note

     Control Manager communicates with PolicyServer Endpoint Encryption Service. The default port number is 8080.

   - **Display name**: Specify how PolicyServer shows in the **Managed Servers** screen

7. Under **Authentication**, specify the user name and password of the Endpoint Encryption Enterprise Administrator account.

8. Under **Connection**, select **Use a proxy server for the connection** if PolicyServer requires a proxy connection.

9. Click **Save**.

> **Note**
> Synchronization between Control Manager and PolicyServer may require several minutes to complete.

PolicyServer is added as a new managed product to Control Manager.

Configuring Directory Management for PolicyServer

The following procedure explains how to configure Directory Management for the new PolicyServer data source. Directory Management is represented in the directory tree when creating policy targets. For details about the **Directory Management** screen, see *Understanding the Product Directory on page A-15*.

Make sure to add PolicyServer to Control Manager as a managed server before starting this procedure. For more information, see *Adding PolicyServer as a Managed Product to Control Manager on page 3-7*.

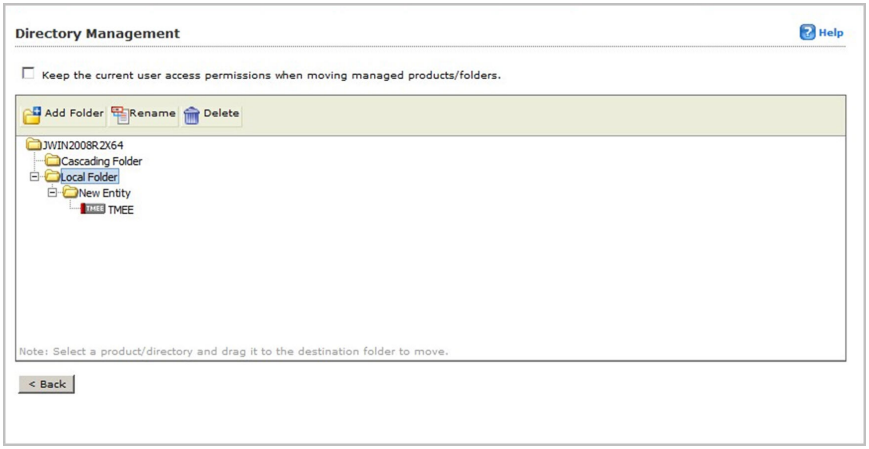
Procedure

1. Go to **Policies** > **Policy Resources** > **Managed Servers**.

   The **Managed Servers** screen appears.

2. Click **Directory Management**.

The **Directory Management** screen appears.



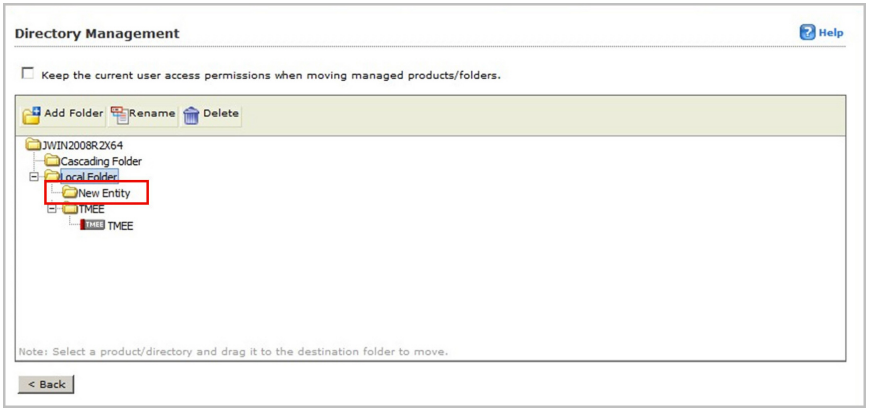
3. Select the server and then click **Add Folder**.

   The **Add Directory** screen appears.

4. Specify a directory name and then click **Save**.

5. Click **OK** to confirm.

   The new folder is created.



6. Drag the previously added PolicyServer data source into the new folder.
7. Click **OK** to confirm.
8. Click **< Back** to return to the **Policy Management** screen.

Creating a Policy

The following procedure explains how to configure a Control Manager policy that affects Endpoint Encryption users and devices.

Important

To add a user account to the policy, make sure that the user account already exists.

Note

For information about available policy settings, see *Endpoint Encryption Policy Settings on page 5-12*.

For information about adding new Endpoint Encryption users, see *Adding Users to Endpoint Encryption on page 6-4*.

For information about configuring Active Directory, see the *Endpoint Encryption Installation and Migration Guide*.

For information about policy mapping between Control Manager and PolicyServer MMC, see *Policy Mapping Between Management Consoles on page D-1*.

Procedure

1. Go to **Policies** > **Policy Management**.
2. From the **Product** drop-down list, select **Endpoint Encryption**.
3. Click **Create**.

The **Create Policy** screen appears.

4. Specify a policy name.
5. Select one of the following policy target options:
   - **None (Draft Only)**: Create a policy with no targets (endpoints)
   - **Filter by Criteria**: Endpoint Encryption does not support filtering by criteria
   - **Specify Target(s)**: Specify existing endpoints.

   Note

   For more information about policy targets, see *Specifying Policy Targets on page 3-13*

6. Specify Endpoint Encryption policy settings.
   - Configure **User** policies.

     See *Configuring Endpoint Encryption Users Rules on page 3-14*.
   - Configure **Full Disk Encryption** policies.

     See *Configuring Full Disk Encryption Rules on page 3-17*.
   - Configure **File Encryption** policies.

     See *Configuring File Encryption Rules on page 3-19*.

- Configure **Common** policies.

  See *Configuring Common Policy Rules on page 3-21*.

7. Click **Save**.

Specifying Policy Targets

Use the **Specify Target(s)** screen to assign Endpoint Encryption devices to the policy.

Note

The **Specify Target(s)** screen is available when creating a new policy.

For information about creating a policy, see *Creating a Policy on page 3-11*.

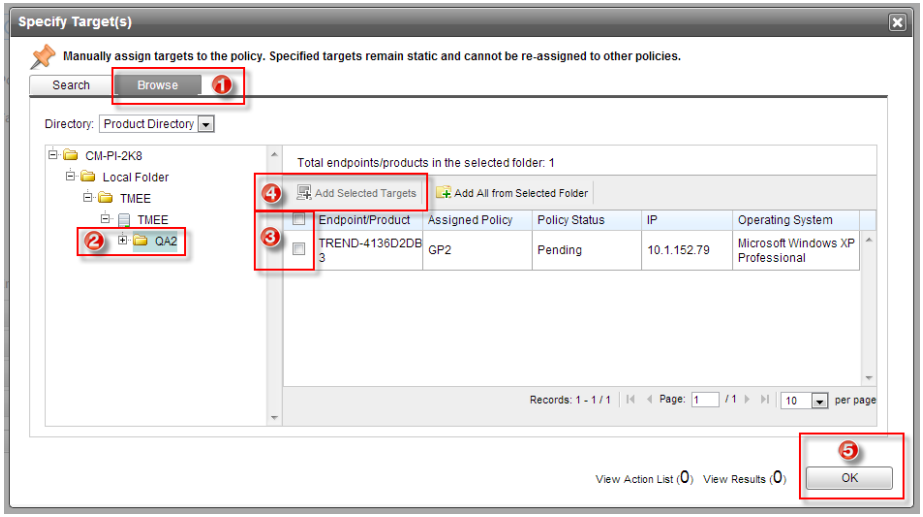


FIGURE 3-1. Specifying Policy Targets

Procedure

1. From the **Specify Target(s)** screen, click the **Browse** tab.

2. From the left pane, expand the tree to select the managed folder.

   Example: **CM-PI-2K8** > **Local Folder** > **TMEE** > **TMEE** > **QA2**

3. Select any appropriate Endpoint Encryption devices, or select the top check box to select all Endpoint Encryption devices listed on the current page.

4. Click **Add Selected Targets**.

   Note

   To immediately select all devices in the managed folder, click **Add All from Selected Folder**.

   "View Action List" and "View Results" update based on the selection.

5. Click **OK**.

Configuring Endpoint Encryption Users Rules

The following procedure explains the configurable options for policy rules that affect authentication and Endpoint Encryption user accounts.

Procedure

1. Create a new Endpoint Encryption policy.

   See *Creating a Policy on page 3-11*.

2. Click **Users**.

The **Users** policy rules settings appear.

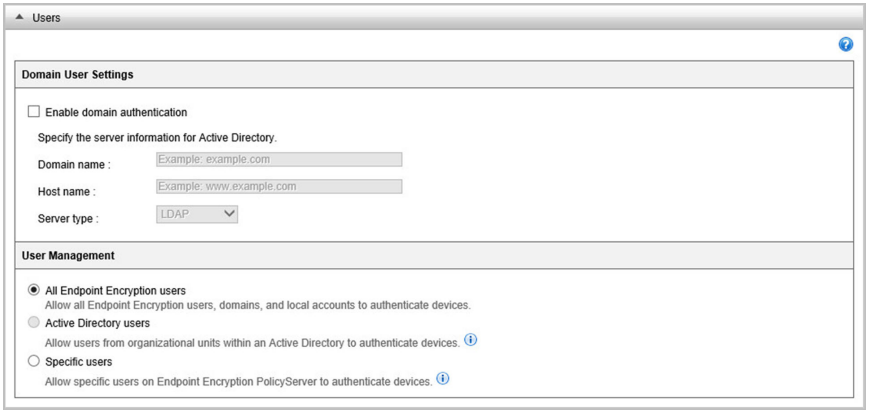


FIGURE 3-2. Endpoint Encryption Users Policy Rules

3. If users require domain authentication, select **Enable domain authentication** under **Domain User Settings**.

   If you selected **Enable domain authentication**, specify the server information for your Active Directory (AD) account.

   a. Configure the AD domain name.

   b. Configure the host name of the AD server.

   c. Select the server type:

      - **LDAP**
      - **LDAP proxy**

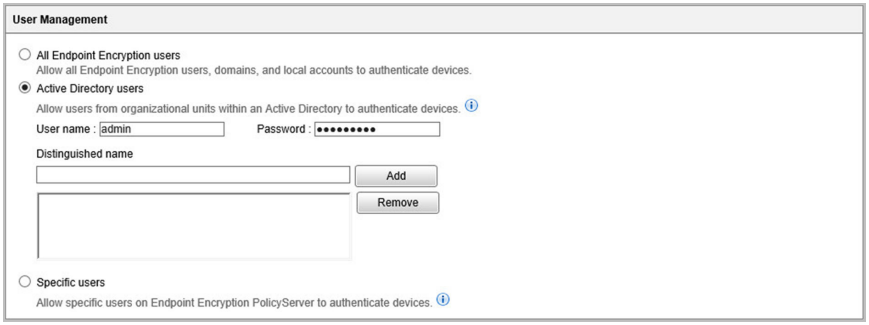
4. Under **User Management**, configure user access.

OPTION	DESCRIPTION
All Endpoint Encryption users	Allow all users, domain and local accounts, to authenticate Endpoint Encryption devices.

Option	Description
Active Directory users	Allow users from organizational units (OUs) within an AD to authenticate Endpoint Encryption devices. **Note** Select **Enable domain authentication** to enable the **Active Directory users** option. To configure domain authentication, see *PolicyServer Active Directory Synchronization* in the *Endpoint Encryption Installation and Migration Guide*.
Select specific users	Specify which already added Endpoint Encryption users can authenticate to managed endpoints. **Note** In order to select specific users with this option, you must populate the user list. Add OUs with the **Active Directory users** option or add users with the Endpoint Encryption Users widget. For more information about the Endpoint Encryption Users widget, see *Adding Users to Endpoint Encryption on page 6-4*.

5. If you selected **Active Directory users**, add OUs to the policy by their distinguished name.

   After selecting **Active Directory users**, the following additional options appear:



Option	Description
User name	Specify your Active Directory user name.
Password	Specify your Active Directory password.
Distinguished name	Specify each OU by its sequence of relative distinguished names (RDN) separated by commas. Example: OU=TW, DC=mycompany, DC=com After specifying the OU distinguished name, click **OK**. **Important** Endpoint Encryption supports up to 12 OUs per policy.

Configuring Full Disk Encryption Rules

The following procedure explains the configurable options for policy rules affecting Full Disk Encryption devices.

Note

Encryption Management for Apple FileVault and Encryption Management for Microsoft BitLocker do not require authentication and are not affected by authentication policies. Client, login, password, and authentication policies, or allowing the user to uninstall the Endpoint Encryption agent software only affects the Full Disk Encryption and File Encryption agents.

Procedure

1. Create a new Endpoint Encryption policy.

   See *Creating a Policy on page 3-11*.

2. Click **Full Disk Encryption**.

The **Full Disk Encryption** policy rules settings appear.

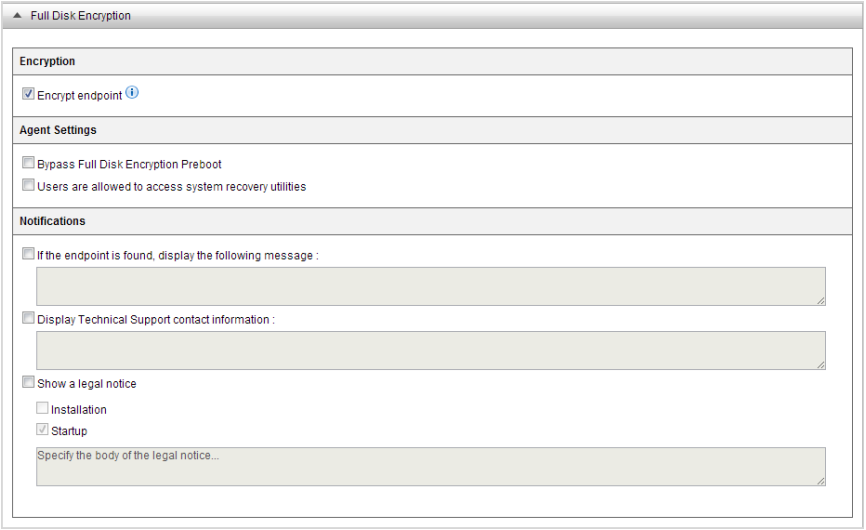


FIGURE 3-3. Full Disk Encryption Policy Rules

3. Under **Encryption**, select **Encrypt device** to start full disk encryption when the Endpoint Encryption agent synchronizes policies with PolicyServer.

WARNING!

Do not deploy encryption to Full Disk Encryption agents without first preparing the endpoint's hard drive.

For information about preparing the hard drive, see *Full Disk Encryption Deployment Outline* in the *Endpoint Encryption Installation Guide*.

---

4. Under **Agent Settings**, select the following options:

- Select **Bypass Full Disk Encryption Preboot** to allow the user to authenticate directly into Windows without protection from preboot authentication.
- Select **Users are allowed to access system recovery utilities on the device** to allow the user to access the Recovery Console.

For information about configurable options and available tools in Full Disk Encryption, see *Full Disk Encryption Recovery Console on page 14-20*.

5. Under **Notifications**, configure the following options:

   - Select **If found, display the following message on the device** to show a message when the **If Found** policy is active.
   - Select **Display Technical Support contact information** to show a message after the user logs on to the Full Disk Encryption agent.
   - Select **Show a legal notice** to show the specific legal message at start up or only after installing the Full Disk Encryption agent.

Configuring File Encryption Rules

The following procedure explains the configurable options for policy rules affecting File Encryption devices.

Procedure

1. Create a new Endpoint Encryption policy.

   See *Creating a Policy on page 3-11*.

2. Click File Encryption.

The **File Encryption** policy rules settings appear.

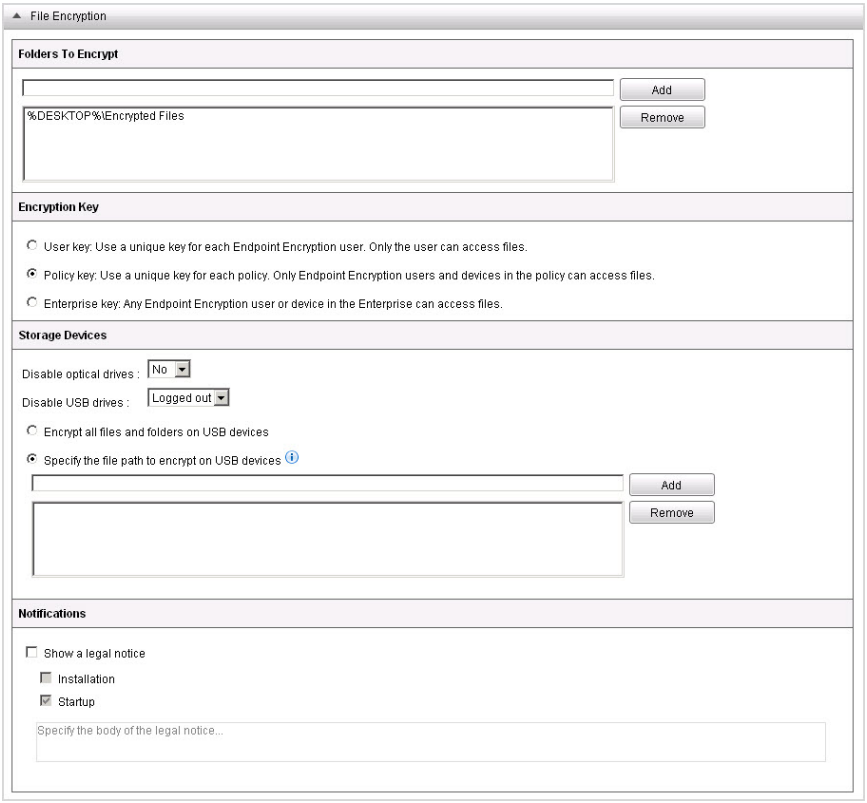


FIGURE 3-4. File Encryption Policy Rules

3. Under **Folder to Encrypt**, specify folders that are automatically created and encrypted on the endpoint when the File Encryption agent synchronized policies.

4. Under **Encryption Key**, select the encryption for the File Encryption encrypted folder.

   - **User key**: Use a unique key for each Endpoint Encryption user. Only the Endpoint Encryption user can decrypt files that he or she encrypted.

- **Policy key**: Use a unique key for each policy. Only Endpoint Encryption users and devices in the policy can decrypt files.
- **Enterprise key**: Any Endpoint Encryption user or device in the Enterprise can decrypt the files.

Note

Selecting **Policy key** or **Enterprise key** controls the sharing for the File Encryption shared key. For more information, see *File Encryption Shared Key Encryption on page 13-15*.

---

5. Under **Storage Devices**, configure the following options:
   - Select **Disable optical drives** to control whether removable media is accessible from the endpoint.
   - Select **Disable USB drives** to control when the USB ports are disabled. Options are:
     - **Always**
     - **Logged out**
     - **Never**
   - Select **Encrypt all files and folders on USB devices** to automatically encrypt all the files and folders on removable drives when plugged into the endpoint.
   - Select **Specify the file path to encrypt on USB devices** to add or remove encrypted folders to USB drives. If a folder does not exist, it is created. If no drive letter is specified, all USB devices are affected.
6. Under **Notifications**, select **Show a legal notice** to show the specific legal message at start up or only after installing the File Encryption agent.

Configuring Common Policy Rules

This section explains the configurable options for policy rules affecting all Endpoint Encryption devices.

Procedure

1. Create a new Endpoint Encryption policy.

   See *Creating a Policy on page 3-11*.

2. Click **Common**.

   The **Common** policy rules settings appear.

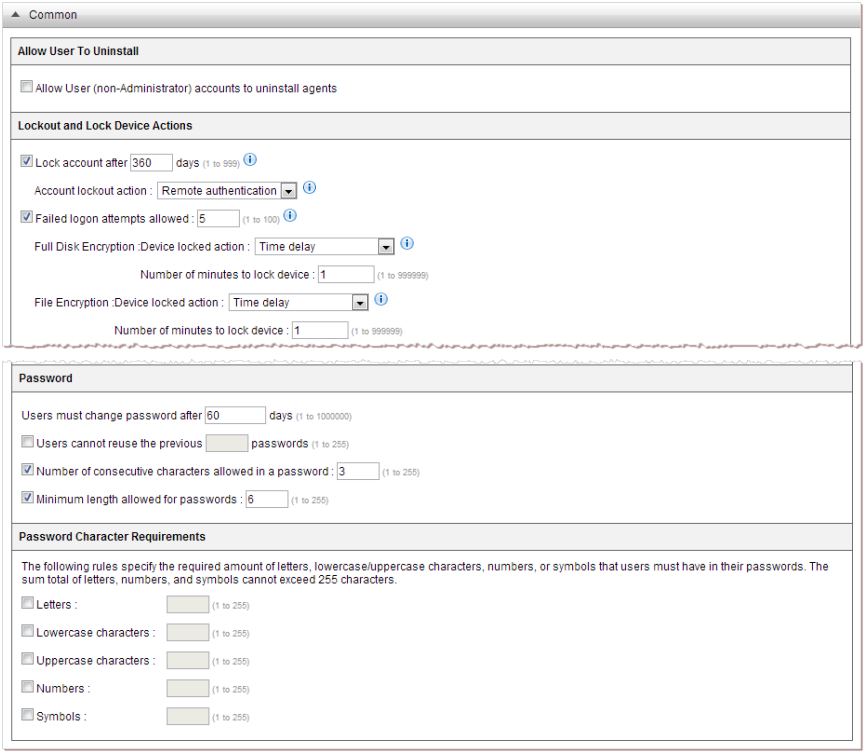


FIGURE 3-5. Common Policy Rules

3. Under **Allow User to Uninstall**, select **Allow User (non-administrator) accounts to uninstall agent software** to allow any Endpoint Encryption user to uninstall the agent.

> **Note**
> By default, only Enterprise Administrator accounts can uninstall Endpoint Encryption agents.

4. Under **Lockout and Lock Device Actions**, configure the following options:
   - Select **Lock account after <number> days** to specify the number of days that the Endpoint Encryption device locks if it does not synchronize policies.
     - Use **Account lockout action** to specify whether the remote authentication or erase action occurs at lockout.

       > **Note**
       > For information about lock options, see *Account Lockout and Device Lock Actions on page 3-24*

   - Select **Failed log on attempts allowed** to specify how many times that a user can attempt to authenticate before the Endpoint Encryption device locks.
   - For Full Disk Encryption or File Encryption devices, separately configure the following:
     - Use **Device locked action** to specify whether the "Remote Authentication" or the "Erase" action occurs at lockout.

       > **Note**
       > For information about lock options, see *Account Lockout and Device Lock Actions on page 3-24*

     - Use **Number of minutes to lock device** to specify the duration that time delay locks the Endpoint Encryption device from authentication
5. Under **Password**, configure the following options:
   - Select **Users must change password after <number> days** to control when a user is prompted to update password.
   - Select **Users cannot reuse the previous <number> passwords** to specify how many previous passwords the user may reuse.

- Select **Number of consecutive characters allowed in a password** to specify how many repeated characters a user may specify in the password.
- Select **Minimum length allowed for passwords** to specify how many characters the user is required to use in the password.

6. Under **Password Requirements**, specify the password character limitations.
   - **Letters**
   - **Lowercase characters**
   - **Uppercase characters**
   - **Numbers**
   - **Symbols**

Important

The sum total of letters, numbers, and symbols cannot exceed 255 characters.

Account Lockout and Device Lock Actions

Some policies have settings to lock out a user account or to lock a device based on certain criteria. Account lockout and device lock actions affect the Endpoint Encryption device whether or not the agent synchronizes policies with PolicyServer. For example, if the Endpoint Encryption agent does not communicate with PolicyServer for a certain period of time, the Endpoint Encryption agent automatically locks the Endpoint Encryption device. Use the tables below to understand the actions available for the account lockout and device lock actions.

TABLE 3-2. Account Lockout Actions

ACTION	DESCRIPTION
Remote authentication	Users cannot log on to the Endpoint Encryption device until after Technical Support provides remote authentication assistance.
Erase	All data is erased the next time that the agent synchronizes policies.

Note

Account lockout actions take effect when the Endpoint Encryption agent does not communicate with PolicyServer for a certain period of time (set by policy).

TABLE 3-3. Device Lock Actions

ACTION	DESCRIPTION
Erase	All data is erased the next time that the Endpoint Encryption agent synchronizes policies.
Remote authentication	Users cannot log on to Endpoint Encryption devices until after Technical Support provides remote authentication assistance.
Time delay	Users cannot log on to Endpoint Encryption devices for a specified time duration.

Note

Device lock actions take effect when the Endpoint Encryption user has too many unsuccessful logon attempts to that Endpoint Encryption device (set by policy).

Remote Help Policy Rules

The following table describes the locations of the account lockout and device lock policies that affect Remote Help authentication. Use it to understand which policies are appropriate to set.

TABLE 3-4. Remote Help Policy Locations

POLICY NAME	POLICYSERVER MMC MENU PATH	CONTROL MANAGER MENU PATH	DESCRIPTION
Account Lockout Action	**Login** > **Account Lockout Action**	**Common** > **Lockout and Lock Device Actions** > **Account Lockout Action**	The action taken when the length of time in “Account Lockout Actions” include: erase, remote authentication.

Policy Name	PolicyServer MMC Menu Path	Control Manager Menu Path	Description
Account Lockout Period	**Login** > **Account Lockout Period**	**Common** > **Lockout and Lock Device Actions** > **Lock account after [ ] days**	The number of days that a device can not communicate with PolicyServer before “Account Lockout Action” is called.
Device Locked Action	For each agent: **Login** > **Device Locked Action**	For each agent: **Common** > **Lockout and Lock Device Actions** > **Device locked action**	The action taken when the “Failed Attempts Allowed” policy value has been exceeded. Actions include: time delay, erase, remote authentication.
Failed Login Attempts Allowed	For each agent: **Login** > **Failed Login Attempts Allowed**	For each agent: **Common** > **Lockout and Lock Device Actions** > **Failed logon attempts allowed**	The number of failed login attempts allowed before executing the action defined in “Device Locked”.

Chapter 4

Dashboard, Widgets, and Reports

This chapter explains how to use the Control Manager dashboard, manage widgets, and run reports.

Topics include:

- *Using the Dashboard on page 4-2*
- *Understanding Tabs on page 4-2*
- *Understanding Widgets on page 4-4*
- *Using Endpoint Encryption Widgets on page 4-8*

Using the Dashboard

The Control Manager dashboard provides at-a-glance information for the Control Manager network. The dashboard is comprised of two components:

- **Tabs:** Allow administrators to create a screen that contains one or more widgets
- **Widgets:** Provide specific information about various security-related events

User Accounts and the Dashboard

Each user account displays it's own dashboard. When a user logs on to Control Manager for the first time, the default tabs and the widgets contained within the tabs appear on the dashboard.

Each user account can customize the dashboard, tabs, and widgets for the account's specific needs. Customizing the dashboard, tabs, or widgets for one user account has no effect on the dashboard, tabs, or widgets for a different user account. Each user account has a completely independent dashboard, tabs, and widgets from every other user account.

Understanding Tabs

To customize the Control Manager Dashboard, add additional tabs, name the new tabs as needed, and add the appropriate widgets. You can modify or delete added tabs.

Default Tabs

The dashboard provides the following tabs:

- Summary
- DLP Incident Investigation
- Data Loss Prevention
- Compliance

- Threat Detection
- Smart Protection Network

Note

Deleting the default tabs permanently removes the tabs from viewing for the user account that removed the tabs. There is no way to recover a deleted tab. Deleting a default tab has no impact on the dashboard for other user accounts.

Adding a New Tab

Procedure

1. Go to the **Dashboard**.
2. Click the + to the right of the last named tab.

   The **New Tab** screen appears.
3. Specify a name for the **Title** of the new tab.
4. Select the radio button for the appropriate layout style.
5. Select **Auto-fit On** to make the height all widgets on the tab consistent.
6. Click **Save**.

The new tab is added to the right of existing tabs.

Modifying Tab Settings

Procedure

1. Go to the **Dashboard** and then open the appropriate tab.
2. Click **Tab Settings** at the upper-right corner of the tab.

3. Make the needed changes to:
   - **Title**
   - **Layout**
   - **Auto-fit**
4. Click **Save**.

Deleting a Tab

Note

Deleting the default tabs permanently removes the tabs from viewing for the user account that removed the tabs. There is no way to recover a deleted tab. Deleting a default tab has no impact on the dashboard for other user accounts.

Procedure

1. Go to the **Dashboard**.
2. Open the tab to delete.
3. Click the **X** next to the name of the tab.
4. Click **OK** to confirm.

The tab is deleted.

Understanding Widgets

Widgets are the core components for the dashboard. Tabs provide the layout and widgets provide the actual data for the dashboard.

Note

Customizing the dashboard, tabs, or widgets for one user account has no effect on the dashboard, tabs, or widgets for a different user account. Each user account has a completely independent dashboard, tabs, and widgets from every other user account.

Download the Control Manager widget pool (under **Product programs and widget pool** on the **Manual Download** and **Scheduled Download** screens) periodically to check for new or updated widgets.

The data a widget displays comes from one of the following places:

- Control Manager database
- Trend Micro Smart Protection Network
- Managed products added to the Dashboard **Server Visibility** list

Note

Smart Feedback must be enabled to display data for widgets that include data from Smart Protection Network.

The data a widget displays is controlled in two ways:

TABLE 4-1. Widget Data

ITEM	DETAILS
User account	A user's account grants or restricts access to any managed product registered to Control Manager.
Scope	The data scope on many widgets can be individually configured. This means a user can further specify the data source location for the widget. **Example:** An OfficeScan administrator, who manages multiple OfficeScan servers, could create one tab and add widgets that display data for only one OfficeScan server.

Adding Widgets to a Tab

After adding widgets to a tab, drag-and-drop the widgets to various locations within the tab. To customize widgets, see *Customizing Widgets on page 4-6*.

Procedure

1. Go to the **Dashboard** and then open the appropriate tab.
2. Click the **Add Widgets** at the upper right corner of the tab.

   The **Add Widgets** screen appears.
3. Do the following:
   - Click a category from the left and then select the check box next to the name of all applicable widgets that appear.
   - Use the search bar to select a specific widget.
4. Click **Add**.

All selected widgets are added to the tab.

Customizing Widgets

You can manually update, configure or filter the displayed widget information. It is also possible to display information about a specific time period. Some widgets represent the data in graph or table format.

For other customizations, see *Widget Options on page 4-7* or *Using Endpoint Encryption Widgets on page 4-8*.

Procedure

1. Go to the **Dashboard** and then open the appropriate tab.
2. Click the time link in the upper-left corner of the widget.

3. For some widgets, select the style to display information by clicking the chart or list icon in the upper right corner of the widget.

4. For some widgets, click the legend at the bottom of the widget to filter the information.

Widget Options

The following illustration and table provide a general overview of available widget options. Different widgets may have different options available.

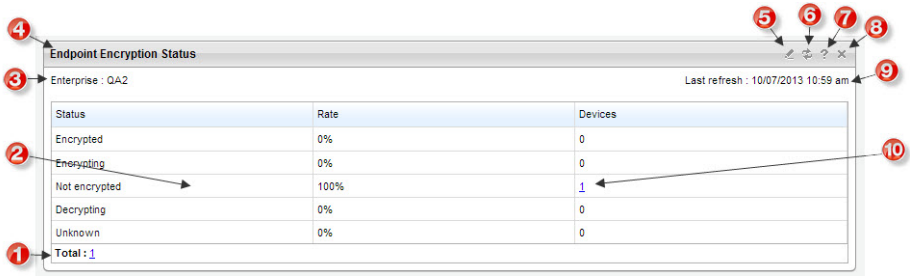


FIGURE 4-1. Widget Options

TABLE 4-2. Widget Option Descriptions

ITEM	DESCRIPTION
1	The total number of objects (examples: events, devices, logs) that the widget gathers data about. Click the number to view additional information.
2	The information that the widget displays.
3	The Enterprise associated with the widget data.
4	The name of the widget. Change the name by clicking the icon to configure widget options.
5	Click the icon to configure the displayable options for that widget. Each widget has different configuration options.

Item	Description
6	Click the icon to manually refresh widget data. The default refresh rate is controlled by the Control Manager dashboard settings at **Administration** > **Settings** > **Web Console Settings**.
7	Click the icon to access the Endpoint Encryption Online Help for that widget.
8	Click the icon to close the widget.
9	View the last time that the widget refreshed data.
10	Click the number or icon to access specific widget data, such as event logs or reports.

Deleting Widgets

Procedure

1. Go to the **Dashboard** and then open the appropriate tab.
2. Click the icon in the upper right corner of the widget.

Note

For information about the available widget options, see *Widget Options on page 4-7*.

Using Endpoint Encryption Widgets

Control Manager has several Endpoint Encryption widgets to manage users, devices, and reports. The following widgets are available:

- *Endpoint Encryption Users Widget on page 4-9*
- *Endpoint Encryption Devices Widget on page 4-11*
- *Full Disk Encryption Status Widget on page 4-13*

- *Endpoint Encryption Unsuccessful Device Logon Widget on page 4-16*
- *Endpoint Encryption Unsuccessful User Logon Widget on page 4-18*
- *Endpoint Encryption Device Lockout Widget on page 4-19*
- *Endpoint Encryption Security Violations Report Widget on page 4-22*

Endpoint Encryption Users Widget

The **Endpoint Encryption Users** widget provides user management capability directly from the Control Manager dashboard. Use the **Endpoint Encryption Users** widget to add or remove Endpoint Encryption user accounts, reset passwords, change permissions, configure policy group priority, import from Active Directory, and search for specific user accounts.

Note

For information about managing users with the **Endpoint Encryption Users** widget, see *Users in Control Manager on page 6-1*.

For information about adding existing Endpoint Encryption users to a policy, see *Configuring Endpoint Encryption Users Rules on page 3-14*.

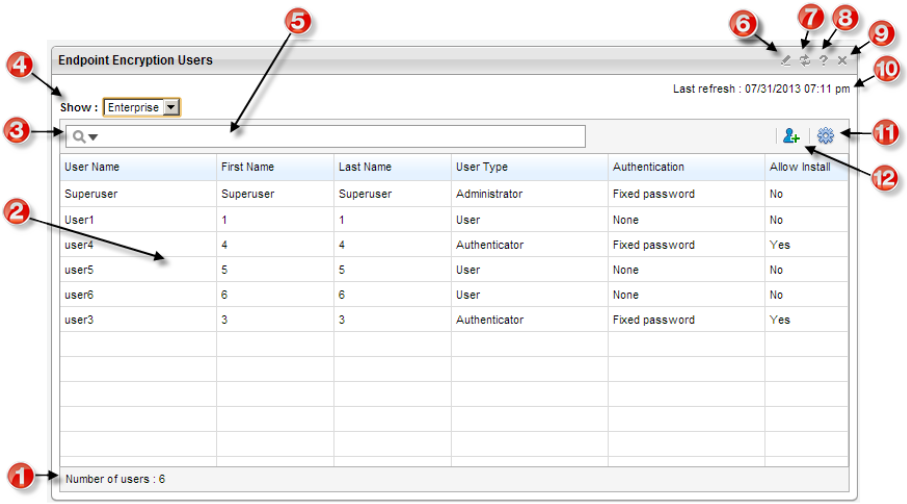


FIGURE 4-2. Endpoint Encryption Users Widget

TABLE 4-3. Endpoint Encryption Users Widget Description

ITEM	DESCRIPTION
1	The total number of users in the entire Enterprise, selected policy, or specified search.
2	All users in the Enterprise, selected policy, or specified search.
3	Click the icon to filter which Endpoint Encryption users appear in the table.
4	Click the **Show** drop-down box to select the Enterprise or a specific policy to show in the table.
5	Use the search field to specify parameters to search against.
6	Click the icon to configure widget settings.
7	Click the icon to refresh widget data.
8	Click the icon to view online help.

Item	Description
9	Click the icon to close the widget.
10	View the last time that the widget synchronized data with PolicyServer.
11	Click the icon to view user attributes or to perform actions on any selected user.
12	Click the icon to add individual users, import users from a CSV file, or import users from Active Directory LDAP.

Endpoint Encryption Devices Widget

Endpoint Encryption devices are Endpoint Encryption agents that have registered with PolicyServer. Installing any Endpoint Encryption agent automatically registers the endpoint with PolicyServer as a new Endpoint Encryption device. Since multiple Endpoint Encryption agents may protect a given endpoint, a single endpoint may appear as more than one Endpoint Encryption device on PolicyServer.

The **Endpoint Encryption Devices** widget provides Endpoint Encryption device management capability directly from the Control Manager dashboard. Use the **Endpoint Encryption Devices** widget to monitor activity, search for Endpoint Encryption devices, or secure endpoint data by initiating lock or erase commands when an endpoint is lost or stolen.

Note

For information about managing devices with the **Endpoint Encryption Devices** widget, see *Devices in Control Manager on page 7-1*.

For information about adding Endpoint Encryption devices to a policy, see *Specifying Policy Targets on page 3-13*.

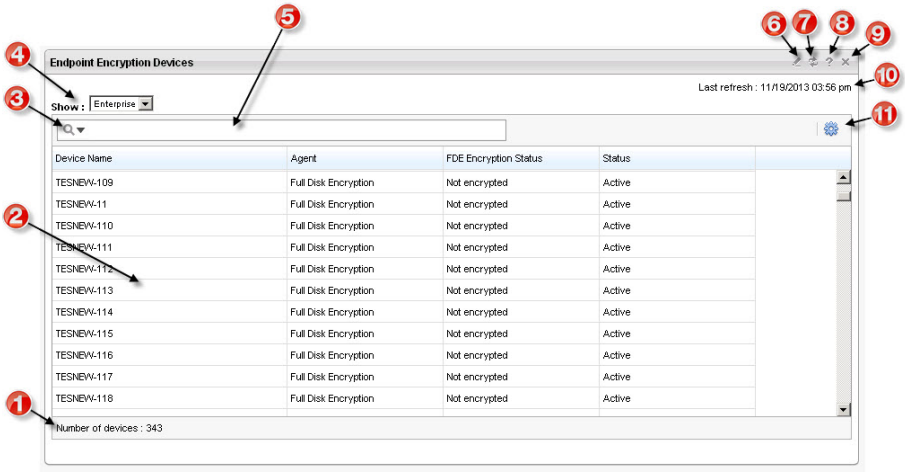


FIGURE 4-3. Endpoint Encryption Devices Widget

TABLE 4-4. Endpoint Encryption Devices Widget Description

ITEM	DESCRIPTION
1	View the total number of devices in the entire Enterprise, selected policy, or specified search.
2	View all devices in the entire Enterprise, selected group, or specified search. • **Device Name**: The computer name associated with the Endpoint Encryption device. • **Agent**: The installed Endpoint Encryption agent. • **FDE Encryption Status**: If Full Disk Encryption agent is installed, the encryption status. For information, see *Full Disk Encryption Status Widget on page 4-13*. • **Status**: The current status of the Endpoint Encryption device.
3	Click the icon to select the Endpoint Encryption agent and filter the devices shown in the table.
4	Click the **Show** drop-down box to select the entire Enterprise or a specific policy to show in the table.

Item	Description
5	Use the search field to specify parameters to search against. Any attributes listed in devices attributes can be searched.
6	Click the icon to configure widget settings.
7	Click the icon to refresh widget data.
8	Click the icon to view online help.
9	Click the icon to close the widget.
10	View the last time that the widget synchronized data with PolicyServer.
11	Click the icon to view device attributes or to perform actions on the selected device.

Full Disk Encryption Status Widget

The **Full Disk Encryption Status** widget shows the current encryption status of any Endpoint Encryption in the Enterprise.

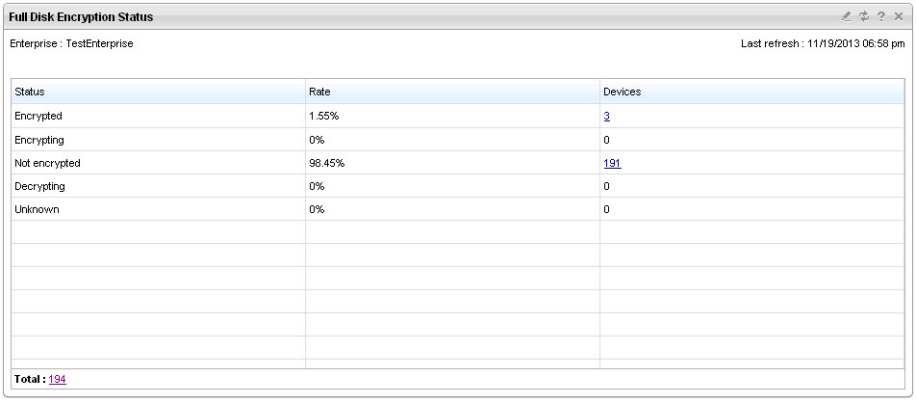


Figure 4-4. Full Disk Encryption Status Widget

TABLE 4-5. Full Disk Encryption Status Widget Description

COLUMN	DESCRIPTION
Status	The status of the Endpoint Encryption device. Statuses include: • **Encrypted**: The Endpoint Encryption device is 100% encrypted. • **Encrypting**: The Endpoint Encryption device is currently encrypting the hard disk. The status changes to "Fully Encrypted" once encryption completes and the endpoint restarts. • **Not encrypted**: The Endpoint Encryption device is 0% encrypted. • **Decrypting**: The Endpoint Encryption device is currently decrypting the hard disk. The status changes to Not Encrypted once the decryption completes and the endpoint restarts. • **Unknown**: The Endpoint Encryption device synchronized, but PolicyServer cannot determine the encryption status.
Rate	The percentage that the Endpoint Encryption device is encrypted.
Devices	The number of Endpoint Encryption devices with that current status. Click the number to view the Endpoint Encryption Devices report. For more information, see *Full Disk Encryption Status Report on page 4-14*.

Note

At the bottom of the widget, click the number next to **Total** to view the Endpoint Encryption Status report. For more information, see *Full Disk Encryption Status Report on page 4-14*.

Full Disk Encryption Status Report

The following table describes the **Full Disk Encryption Status** report. Use it to understand how to read the report details.

TABLE 4-6. Full Disk Encryption Status Report Example

HEADER	EXAMPLE	DESCRIPTION
Policy	GP1	The title of the policy controlling the Endpoint Encryption device.
Device Name	TREND-4136D2DB3	The computer name used by the Endpoint Encryption device.
Device ID	1fabfbff-0001-06e5-000c-29 7085710000	The unique ID established after the Endpoint Encryption agent was installed on the endpoint and a new Endpoint Encryption device was registered with PolicyServer.
Application	Full Disk Encryption	The currently installed Endpoint Encryption agent.
Status	Not Encrypted	The current state of the Endpoint Encryption device. For an encryption status list, see *Full Disk Encryption Status Widget on page 4-13*.
Last Synchronized Date	10/07/2013 11:05 am	The timestamp when the Endpoint Encryption device last updated policies from PolicyServer.
Last Policy Enforcement	10/07/2013 11:05 am	The timestamp when the Control Manager last enforced policy changes on PolicyServer.

Endpoint Encryption Unsuccessful Device Logon Widget

The **Endpoint Encryption Unsuccessful Device Logon** widget shows all Endpoint Encryption devices that had unsuccessful logon attempts by any user (Endpoint Encryption user or non-Endpoint Encryption user). Unsuccessful device logon events may represent a security breach or the Endpoint Encryption user may have forgotten the logon credentials.

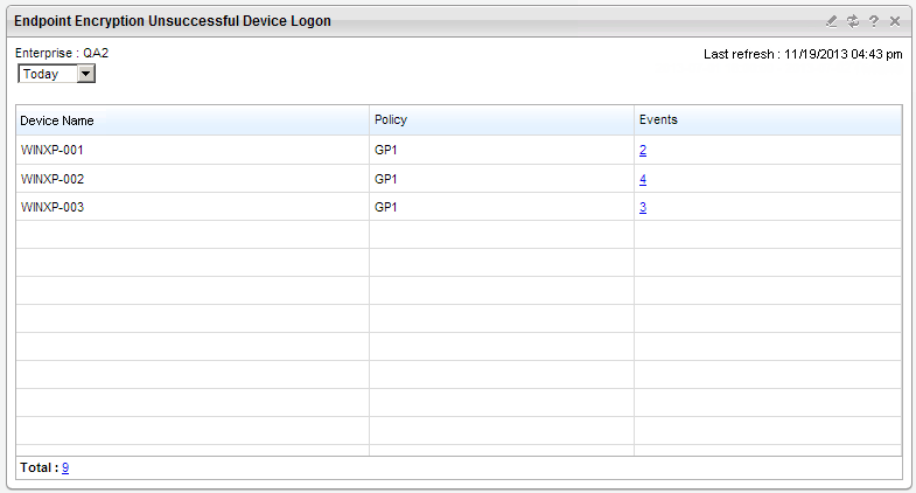


TABLE 4-7. Endpoint Encryption Unsuccessful Device Logon widget column descriptions

COLUMN	DESCRIPTION
Device Name	The computer name of the Endpoint Encryption device.
Policy	The policy managing the Endpoint Encryption device.
Events	The number of logon attempts. Click the number to view the **Endpoint Encryption Unsuccessful Device Logon** report.

Endpoint Encryption Unsuccessful Device Logon Report

The following table explains the **Endpoint Encryption Unsuccessful Device Logon** report. Use it to understand how to read the report details.

TABLE 4-8. Endpoint Encryption Unsuccessful Device Logon Example

HEADER	EXAMPLE	DESCRIPTION
Event Timestamp	07/02/2012 01:56 pm	When the event occurred.
Policy	GP1	The title of the policy controlling the Endpoint Encryption device.
Device Name	TREND-4136D2DB3	The computer name used by the Endpoint Encryption device.
Device ID	1fabfbff-0001-06e5-000c-297085710000	The unique ID established after the Endpoint Encryption agent was installed on the endpoint and a new Endpoint Encryption device was registered with PolicyServer.
IP Address	`10.1.152.219`	The Endpoint Encryption device IP address.
Application	Full Disk Encryption	The currently installed Endpoint Encryption agent.
Display Name	Mary Jones	The first and last name of the Endpoint Encryption user account. If the specified user name is not a valid Endpoint Encryption user name, the column shows “Not Recorded”.
Event	Unsuccessful Fixed Password Login	The logged event including the authentication method.

Endpoint Encryption Unsuccessful User Logon Widget

The **Endpoint Encryption Unsuccessful User Logon**widget shows all attempts by any user (Endpoint Encryption user or non-Endpoint Encryption user) to log on to any Endpoint Encryption device.

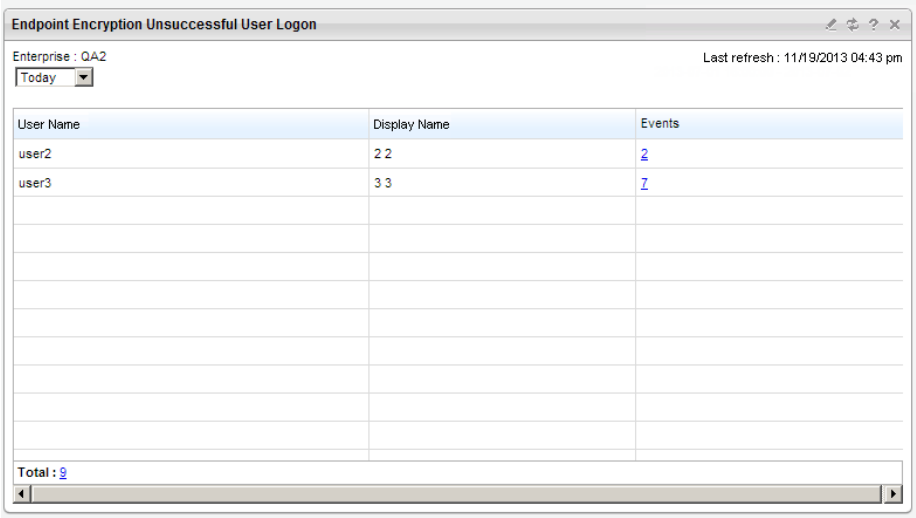


FIGURE 4-5. Endpoint Encryption Unsuccessful User Logon Widget

TABLE 4-9. Endpoint Encryption Unsuccessful User Logon Widget Description

COLUMN	DESCRIPTION
User Name	The user name used to attempt to log on to the Endpoint Encryption device.
Display Name	The display name of the user account that attempted to log on to the Endpoint Encryption device.
Events	The number of authentication attempts. Click the number to view the Endpoint Encryption Unsuccessful User Logon report.

Endpoint Encryption Unsuccessful User Logon Report

The following table explains the **Endpoint Encryption Unsuccessful User Logon** report. Use it to understand how to read the report details.

TABLE 4-10. Endpoint Encryption Unsuccessful User Logon Report Example

HEADER	EXAMPLE	DESCRIPTION
Event Timestamp	07/02/2012 01:56 pm	When the event occurred.
Policy	GP1	The title of the policy controlling the Endpoint Encryption device.
Device Name	TREND-4136D2DB3	The computer name used by the Endpoint Encryption device.
Device ID	1fabfbff-0001-06e5-000c-297085710000	The unique ID established after the Endpoint Encryption agent was installed on the endpoint and a new Endpoint Encryption device was registered with PolicyServer.
IP Address	`10.1.152.219`	The Endpoint Encryption device IP address.
Application	Full Disk Encryption	The currently installed Endpoint Encryption agent.
Display Name	Mary Jones	The first and last name of the Endpoint Encryption user account. If the specified user name is not a valid Endpoint Encryption user name, the column shows “Not Recorded”.
Event	Unsuccessful Fixed Password Login	The logged event including the authentication method.

Endpoint Encryption Device Lockout Widget

The **Endpoint Encryption Device Lockout** widget shows Endpoint Encryption devices that are locked out due to policy restrictions.

Note

For information about Endpoint Encryption device lockout rules, see *Account Lockout and Device Lock Actions on page 3-24*.

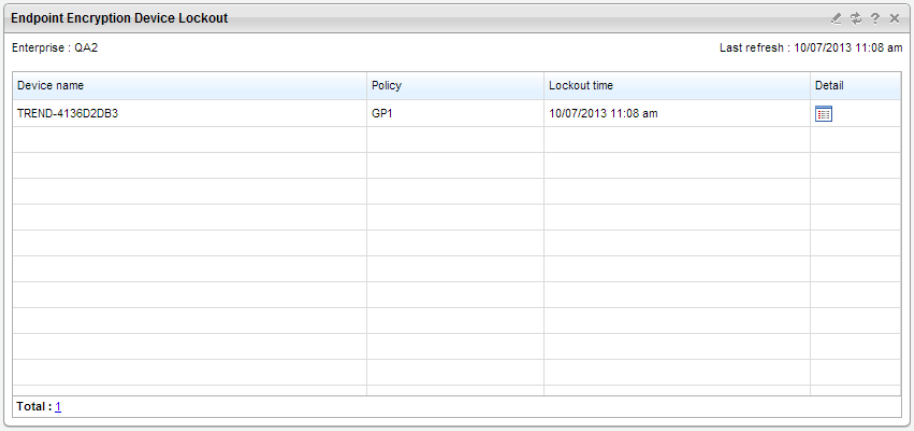


FIGURE 4-6. Endpoint Encryption Device Lockout Widget

TABLE 4-11. Endpoint Encryption Device Lockout Widget Description

HEADER	DESCRIPTION
Device Name	The computer name used by the Endpoint Encryption device.
Policy	The title of the policy controlling the Endpoint Encryption device.
Lockout	The timestamp when PolicyServer issued the device lock command. The Endpoint Encryption device does not actually lock until after the Endpoint Encryption agent synchronizes policies with PolicyServer.
Details	Click details icon to view the Endpoint Encryption Device Lockout report.

At the bottom of the widget, click the number next to **Total** to view the report.

Endpoint Encryption Device Lockout Report

The following table explains the **Endpoint Encryption Device Lockout** report. Use it to understand how to read the report details.

Note

For information about account lockout and device lock actions, see *Account Lockout and Device Lock Actions on page 3-24*.

TABLE 4-12. Endpoint Encryption Device Lockout Report Example

HEADER	EXAMPLE	DESCRIPTION
Event Timestamp	07/02/2012 01:56 pm	When the event occurred.
Policy	GP1	The title of the policy controlling the Endpoint Encryption device.
Device Name	TREND-4136D2DB3	The computer name used by the Endpoint Encryption device.
Device ID	1fabfbff-0001-06e5-000c-29 7085710000	The unique ID established after the Endpoint Encryption agent was installed on the endpoint and a new Endpoint Encryption device was registered with PolicyServer.
IP Address	`10.1.152.219`	The Endpoint Encryption device IP address.
Application	Full Disk Encryption	The currently installed Endpoint Encryption agent.

HEADER	EXAMPLE	DESCRIPTION
Display Name	Mary Jones	The first and last name of the Endpoint Encryption user account. If the specified user name is not a valid Endpoint Encryption user name, the column shows “Not Recorded”.
Event	Locked device due to invalid login attempt violation.	The logged event including the authentication method.

Endpoint Encryption Security Violations Report Widget

The **Endpoint Encryption Security Violations Report** widget shows the security violations assessed by the following reports:

- **Endpoint Encryption Consecutive Unsuccessful Device Logon**
- **Endpoint Encryption Policy Tampering**
- **Endpoint Encryption Log Integrity**

Generating a report gathers all security violations currently logged by PolicyServer. Once generated, click the number on the **Reports** column to view generated reports for that violation.

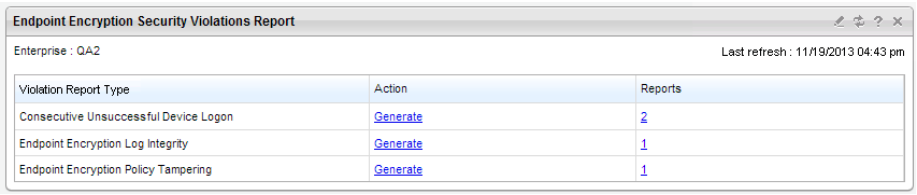


FIGURE 4-7. Endpoint Encryption Security Violations Report Widget

TABLE 4-13. Endpoint Encryption Security Violations Report Description

HEADER	DESCRIPTION
Violation report type	The available report types for various violations.
Action	Click **Generate** to create a new report.
Reports	The total number of generated reports for that violation. Click the number to view available reports.

Endpoint Encryption Consecutive Unsuccessful Device Logon Report

The following table explains the **Endpoint Encryption Consecutive Unsuccessful Device Logon** report. Use it to understand when the logon attempt occurred, the affected Endpoint Encryption device, and how many times the user attempted to log on to the Endpoint Encryption device.

TABLE 4-14. Endpoint Encryption Consecutive Unsuccessful Device Logon Report Example

ENTRY	EXAMPLE	DESCRIPTION
Event Timestamp	07/02/2012 01:56 pm	When the event occurred.
Device Name	TREND-4136D2DB3	The computer name used by the Endpoint Encryption device.
Attempts	5	The number of times that a user attempted to log on to the Endpoint Encryption device.

Endpoint Encryption Policy Tampering Report

The following table explains the **Endpoint Encryption Policy Tampering** report. Use it to understand how to read the report details.

TABLE 4-15. Endpoint Encryption Policy Tampering Report Example

HEADER	EXAMPLE	DESCRIPTION
Event Timestamp	07/02/2012 01:56 pm	When the event occurred.
Event	Policy Value Integrity Check Failed	The logged event including the authentication method.

Endpoint Encryption Log Integrity Report

The following table explains the **Endpoint Encryption Log Integrity** report. Use it to understand how to read the report details.

TABLE 4-16. Endpoint Encryption Log Integrity Report Example

HEADER	EXAMPLE	DESCRIPTION
Event Timestamp	07/02/2012 01:56 pm	When the event occurred.
Event	Audit Log Record Missing	The logged event including the authentication method.

Chapter 5

Policies in Control Manager

This chapter explains how to use policies and provides detailed information about individual policy setting values.

Topics include:

- *Groups on page 5-2*
- *Understanding Policies on page 5-2*
- *Understanding Policy Types on page 5-3*
- *Understanding Policy Target Settings on page 5-6*
- *Understanding the Managed Server List on page 5-27*
- *Updating the Policy Templates on page 5-32*

Groups

To streamline policy management, Control Manager merges the PolicyServer MMC group and policy hierarchy together. PolicyServer maintains the same policy and group configuration no matter which management console you prefer. When you create a new policy target in Control Manager, PolicyServer MMC shows a new group that contains the policy configurations and the users added to that policy.

Important

Control Manager always takes precedence. Any modifications to the group assignment in PolicyServer MMC are automatically overwritten the next time that Control Manager synchronizes with PolicyServer.

Understanding Policies

Policy management allows administrators to enforce product settings on managed products and endpoints from a single management console. Administrators create a policy by selecting the targets and configuring a list of product settings.

Control Manager policies have the following attributes:

TABLE 5-1. Control Manager Policy Options

ATTRIBUTE	DESCRIPTION
Policy name	The name of the policy configuration.
Targets	Administrators can manually select targets or use a filter to automatically assign targets to their policies. The target selection method determines the policy type and how the policy works. See *Understanding Policy Types on page 5-3* for more information about policy types. To include a managed product or endpoint as the target, make sure the product version of the managed product or endpoint supports policy management in Control Manager. The **Policy Template Settings** screen contains information about supported product versions.

Attribute	Description
Settings	Once Control Manager deploys a policy to the targets, the settings defined in the policy overwrite the existing settings in the targets. Control Manager enforces the policy settings in the targets every 24 hours. Although local administrators can make changes to the settings from the managed product console, the changes are overwritten every time Control Manager enforces the policy settings. **Note** Since policy enforcement only occurs every 24 hours, the product settings in the targets may not align with the policy settings if local administrators make changes through the managed product console between the enforcement period.

Administrators can use the **Policy Management** screen to perform the following tasks:

- *Creating a Policy on page 3-11*
- *Editing a Policy on page 5-25*
- *Deleting a Policy on page 5-26*
- *Copying Policy Settings on page 5-24*

Note

Make sure to use the **Product Directory** to move the managed PolicyServer instance from the New Entity folder to the Endpoint Encryption folder in the Product Directory. For more information, see *Understanding the Product Directory on page A-15*.

Understanding Policy Types

Control Manager provides three types of policies administrators can create. Each policy type differs in the target selection method, which affects how a policy works. The policy list arranges the policy types in the order as described in the following table.

TABLE 5-2. Policy Types

POLICY TYPE	DESCRIPTION
Specified	• Uses the search or browse function to locate specific targets and manually assigns them to the policy • Useful when administrators plan to deploy specific settings only to a certain targets • Remains static on the top of the policy list and takes priority over any filtered policies
Filtered	• Uses a filter to automatically assign current and future targets to the policy • Useful for deploying standard settings to a group of targets • Administrators can change the priority of filtered policies in the policy list • See *Assigning Endpoints to Filtered Policies on page 5-4* for more information on how Control Manager assign targets to filtered policies **Note** • When an administrator reorders the policy list, Control Manager re-assigns the targets to different filtered policies based on the target criteria and the user roles of each policy creator. • The filtered policy type is only available for managingOfficeScan settings.
Draft	Allows administrators to save policy settings as a draft without selecting any targets. Control Manager saves draft policies with the lowest priority at the bottom of the list.

Assigning Endpoints to Filtered Policies

When a new endpoint registers to Control Manager, it goes through the filtered policies in the list in descending order. Control Manager assigns the new endpoint to a filtered policy when the following conditions are both satisfied:

- The new endpoint matches the target criteria in the policy
- The policy creator has the permission to manage the new endpoint

The same action applies to an endpoint already assigned to a policy, but the policy creator later deletes the policy.

Note

For endpoints just registered to Control Manager and for those just released from deleted policies, there is a three-minute grace period during which no endpoint allocation occurs. These endpoints are temporarily without policies during this period.

If an endpoint does not meet the target criteria in any filtered policies, the endpoint does not associate with any policies. Control Manager allocates these endpoints again when the following actions occur:

- Create a new filtered policy
- Edit a filtered policy
- Reorder the filtered policies
- Daily endpoint allocation schedule

  Control Manager uses a daily endpoint allocation schedule to ensure that endpoints are assigned to the correct policies. This action occurs once at 3:15 pm every day. When endpoint properties change, such as the operating system or IP address, these endpoints require the daily schedule to re-assign them to the correct policies.

  Note

  If the endpoints are offline during the daily endpoint allocation schedule, the policy status for these endpoints will remain pending until they go online.

When the above actions occur, Control Manager allocate endpoints based on the following conditions:

TABLE 5-3. Endpoint Allocation for Filtered Policies

	New endpoints or endpoints from deleted policies	Endpoints without policies	Endpoints with policies
Create a new policy		●	
Edit a policy	●	●	●
Reorder the filtered policies	●	●	●
Daily endpoint allocation schedule	●	●	●

Understanding Policy Target Settings

This section explains how to use various windows to change a policy, but does not explain the process to modify every policy. All policies have default values. the PolicyServer MMC has a common set of windows to use when modifying a policy. One policy will have an editor window available to edit the numbers, ranges and values associated with the policy while another policy will have a window to modify text strings.

When managing policies, note the following:

- Policies are configurable by application within each group.
- Policy inheritance only occurs when a subgroup is created. For information about group permissions, see *About Groups on page 10-2*.

Understanding the Policy List

The policy list displays the information and status of policies created by all users. When a new endpoint registers to Control Manager, it goes through the filtered policies in the list in descending order. Control Manager assigns the new endpoint to a filtered policy when the following conditions are both satisfied:

- The new endpoint matches the target criteria of the policy
- The policy creator has the permission to manage the new endpoint

The following table describes the items in the policy list.

TABLE 5-4. Policy List

MENU ITEM	DESCRIPTION
Priority	Displays the priority of the policies. • Control Manager lists policies from the highest to the lowest priority. • When administrators create a filtered policy, Control Manager saves the new policy as the lowest priority policy. • A specified policy takes priority over any filtered policies and remains on the top of the list. Administrators cannot reorder specified policies. • Control Manager places draft policies at the bottom of the list.
Policy	Displays the name of the policy.
Targets	Displays how administrators select targets for the policy. • Specified: Uses the browse or search function to select specific targets for the policy. Specified policies remain static on the top of the policy list and take priority over filtered policies. • Filtered: Uses a filter to automatically assign current and future endpoints to the policy. Administrators can rearrange the priority of filtered policies. • None: The policy creator saved the policy as a draft without selecting any targets.
Deployed	Displays the number of targets that have applied the policy settings.

Menu Item	Description
Pending	Displays the number of targets that have not applied the policy settings. Click the pending number to check the policy status.
Creator	Displays the user who created the policy.
Endpoints/Products without policies	Displays the number of managed products or endpoints to which Control Manager has not assigned a policy.
Total endpoints/products	Displays the number of managed products or endpoints available for policy management.

Note

The numbers in Deployed, Pending, Endpoints/Products without policies, and Total endpoints/products only reflect the endpoints or managed products an administrator has the permissions to manage.

Creating a Policy

The following procedure explains how to configure a Control Manager policy that affects Endpoint Encryption users and devices.

Important

To add a user account to the policy, make sure that the user account already exists.

Note

For information about available policy settings, see *Endpoint Encryption Policy Settings on page 5-12*.

For information about adding new Endpoint Encryption users, see *Adding Users to Endpoint Encryption on page 6-4*.

For information about configuring Active Directory, see the *Endpoint Encryption Installation and Migration Guide*.

For information about policy mapping between Control Manager and PolicyServer MMC, see *Policy Mapping Between Management Consoles on page D-1*.

Procedure

1. Go to **Policies** > **Policy Management**.
2. From the **Product** drop-down list, select **Endpoint Encryption**.
3. Click **Create**.

   The **Create Policy** screen appears.

4. Specify a policy name.
5. Select one of the following policy target options:
   - **None (Draft Only)**: Create a policy with no targets (endpoints)
   - **Filter by Criteria**: Endpoint Encryption does not support filtering by criteria
   - **Specify Target(s)**: Specify existing endpoints.

   Note

   For more information about policy targets, see *Specifying Policy Targets on page 3-13*

6. Specify Endpoint Encryption policy settings.
   - Configure **User** policies.

     See *Configuring Endpoint Encryption Users Rules on page 3-14*.

- Configure **Full Disk Encryption** policies.

  See *Configuring Full Disk Encryption Rules on page 3-17*.

- Configure **File Encryption** policies.

  See *Configuring File Encryption Rules on page 3-19*.

- Configure **Common** policies.

  See *Configuring Common Policy Rules on page 3-21*.

7. Click **Save**.

Specifying Policy Targets

Use the **Specify Target(s)** screen to assign Endpoint Encryption devices to the policy.

Note

The **Specify Target(s)** screen is available when creating a new policy.

For information about creating a policy, see *Creating a Policy on page 3-11*.

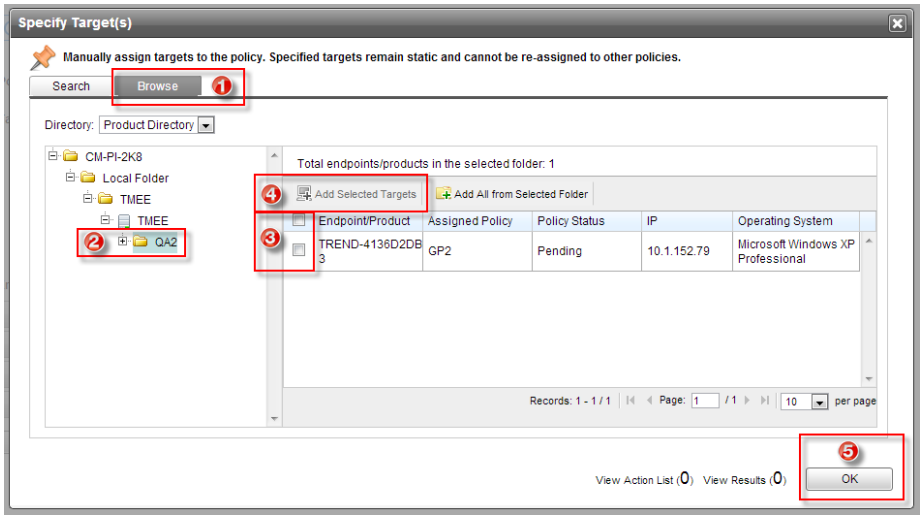


FIGURE 5-1. Specifying Policy Targets

Procedure

1. From the **Specify Target(s)** screen, click the **Browse** tab.
2. From the left pane, expand the tree to select the managed folder.

   Example: **CM-PI-2K8** > **Local Folder** > **TMEE** > **TMEE** > **QA2**
3. Select any appropriate Endpoint Encryption devices, or select the top check box to select all Endpoint Encryption devices listed on the current page.
4. Click **Add Selected Targets**.

> **Note**
>
> To immediately select all devices in the managed folder, click **Add All from Selected Folder**.

"View Action List" and "View Results" update based on the selection.

5. Click **OK**.

Endpoint Encryption Policy Settings

Configuring Endpoint Encryption Users Rules

The following procedure explains the configurable options for policy rules that affect authentication and Endpoint Encryption user accounts.

Procedure

1. Create a new Endpoint Encryption policy.

   See *Creating a Policy on page 3-11*.

2. Click **Users**.

   The **Users** policy rules settings appear.

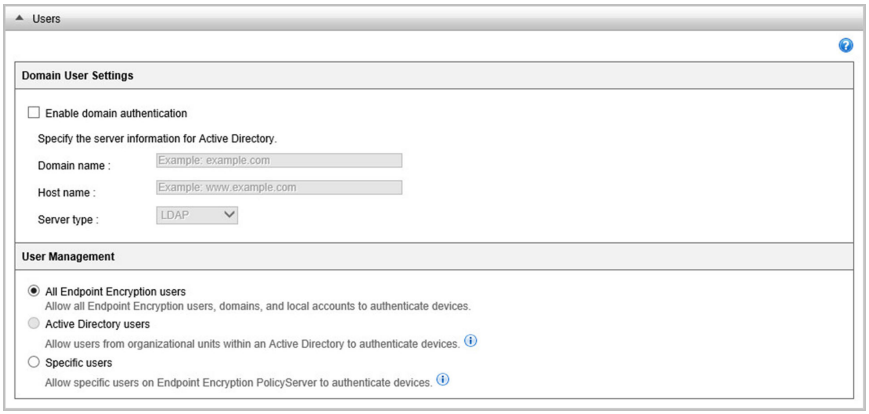


FIGURE 5-2. Endpoint Encryption Users Policy Rules

3. If users require domain authentication, select **Enable domain authentication** under **Domain User Settings**.

If you selected **Enable domain authentication**, specify the server information for your Active Directory (AD) account.

a. Configure the AD domain name.

b. Configure the host name of the AD server.

c. Select the server type:

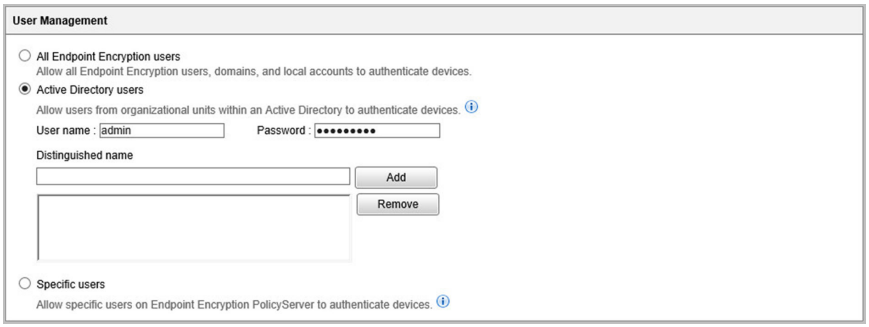
- **LDAP**
- **LDAP proxy**

4. Under **User Management**, configure user access.

Option	Description
All Endpoint Encryption users	Allow all users, domain and local accounts, to authenticate Endpoint Encryption devices.
Active Directory users	Allow users from organizational units (OUs) within an AD to authenticate Endpoint Encryption devices. **Note** Select **Enable domain authentication** to enable the **Active Directory users** option. To configure domain authentication, see *PolicyServer Active Directory Synchronization* in the *Endpoint Encryption Installation and Migration Guide*.
Select specific users	Specify which already added Endpoint Encryption users can authenticate to managed endpoints. **Note** In order to select specific users with this option, you must populate the user list. Add OUs with the **Active Directory users** option or add users with the Endpoint Encryption Users widget. For more information about the Endpoint Encryption Users widget, see *Adding Users to Endpoint Encryption on page 6-4*.

5. If you selected **Active Directory users**, add OUs to the policy by their distinguished name.

After selecting **Active Directory users**, the following additional options appear:



Option	Description
User name	Specify your Active Directory user name.
Password	Specify your Active Directory password.
Distinguished name	Specify each OU by its sequence of relative distinguished names (RDN) separated by commas. Example: OU=TW, DC=mycompany, DC=com After specifying the OU distinguished name, click **OK**. **Important** Endpoint Encryption supports up to 12 OUs per policy.

Configuring Full Disk Encryption Rules

The following procedure explains the configurable options for policy rules affecting Full Disk Encryption devices.

Note

Encryption Management for Apple FileVault and Encryption Management for Microsoft BitLocker do not require authentication and are not affected by authentication policies. Client, login, password, and authentication policies, or allowing the user to uninstall the Endpoint Encryption agent software only affects the Full Disk Encryption and File Encryption agents.

Procedure

1. Create a new Endpoint Encryption policy.

   See *Creating a Policy on page 3-11*.

2. Click **Full Disk Encryption**.

   The **Full Disk Encryption** policy rules settings appear.

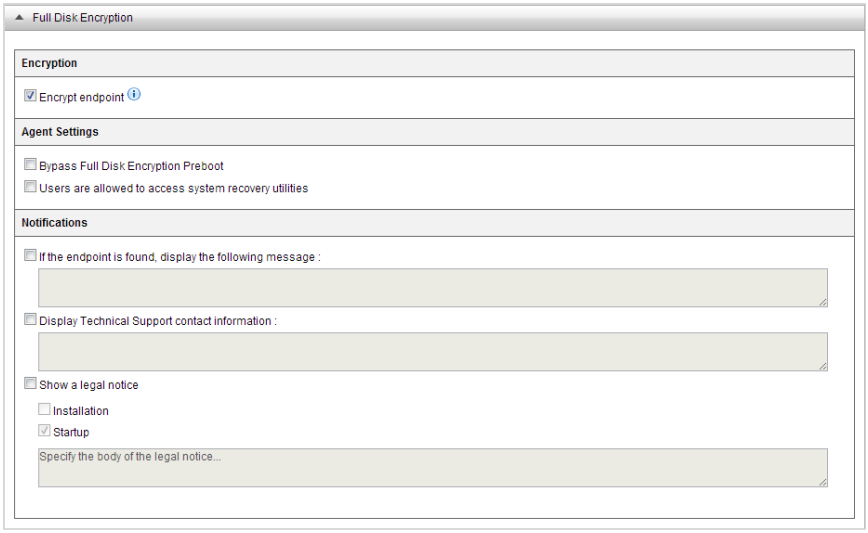


FIGURE 5-3. Full Disk Encryption Policy Rules

3. Under **Encryption**, select **Encrypt device** to start full disk encryption when the Endpoint Encryption agent synchronizes policies with PolicyServer.

WARNING!

Do not deploy encryption to Full Disk Encryption agents without first preparing the endpoint's hard drive.

For information about preparing the hard drive, see *Full Disk Encryption Deployment Outline* in the *Endpoint Encryption Installation Guide*.

4. Under **Agent Settings**, select the following options:
   - Select **Bypass Full Disk Encryption Preboot** to allow the user to authenticate directly into Windows without protection from preboot authentication.
   - Select **Users are allowed to access system recovery utilities on the device** to allow the user to access the Recovery Console.

     For information about configurable options and available tools in Full Disk Encryption, see *Full Disk Encryption Recovery Console on page 14-20*.
5. Under **Notifications**, configure the following options:
   - Select **If found, display the following message on the device** to show a message when the **If Found** policy is active.
   - Select **Display Technical Support contact information** to show a message after the user logs on to the Full Disk Encryption agent.
   - Select **Show a legal notice** to show the specific legal message at start up or only after installing the Full Disk Encryption agent.

Configuring File Encryption Rules

The following procedure explains the configurable options for policy rules affecting File Encryption devices.

Procedure

1. Create a new Endpoint Encryption policy.

   See *Creating a Policy on page 3-11*.

2. Click File Encryption.

   The **File Encryption** policy rules settings appear.

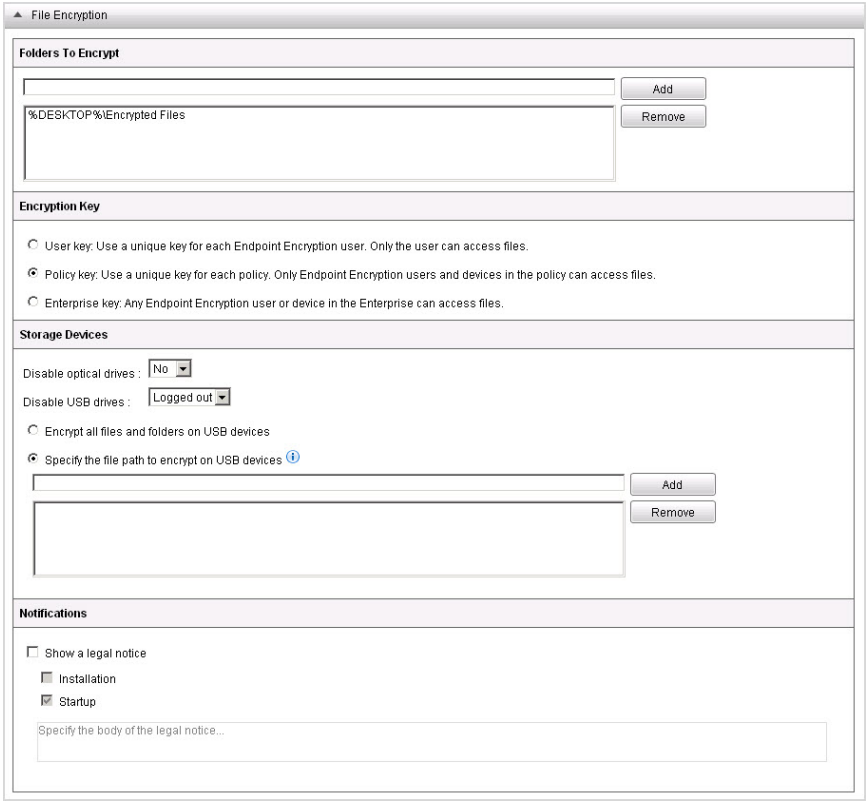


FIGURE 5-4. File Encryption Policy Rules

3. Under **Folder to Encrypt**, specify folders that are automatically created and encrypted on the endpoint when the File Encryption agent synchronized policies.

4. Under **Encryption Key**, select the encryption for the File Encryption encrypted folder.

   - **User key**: Use a unique key for each Endpoint Encryption user. Only the Endpoint Encryption user can decrypt files that he or she encrypted.

- **Policy key**: Use a unique key for each policy. Only Endpoint Encryption users and devices in the policy can decrypt files.
- **Enterprise key**: Any Endpoint Encryption user or device in the Enterprise can decrypt the files.

Note

Selecting **Policy key** or **Enterprise key** controls the sharing for the File Encryption shared key. For more information, see *File Encryption Shared Key Encryption on page 13-15*.

---

5. Under **Storage Devices**, configure the following options:
   - Select **Disable optical drives** to control whether removable media is accessible from the endpoint.
   - Select **Disable USB drives** to control when the USB ports are disabled. Options are:
     - **Always**
     - **Logged out**
     - **Never**
   - Select **Encrypt all files and folders on USB devices** to automatically encrypt all the files and folders on removable drives when plugged into the endpoint.
   - Select **Specify the file path to encrypt on USB devices** to add or remove encrypted folders to USB drives. If a folder does not exist, it is created. If no drive letter is specified, all USB devices are affected.
6. Under **Notifications**, select **Show a legal notice** to show the specific legal message at start up or only after installing the File Encryption agent.

Configuring Common Policy Rules

This section explains the configurable options for policy rules affecting all Endpoint Encryption devices.

Procedure

1. Create a new Endpoint Encryption policy.

   See *Creating a Policy on page 3-11*.

2. Click **Common**.

   The **Common** policy rules settings appear.

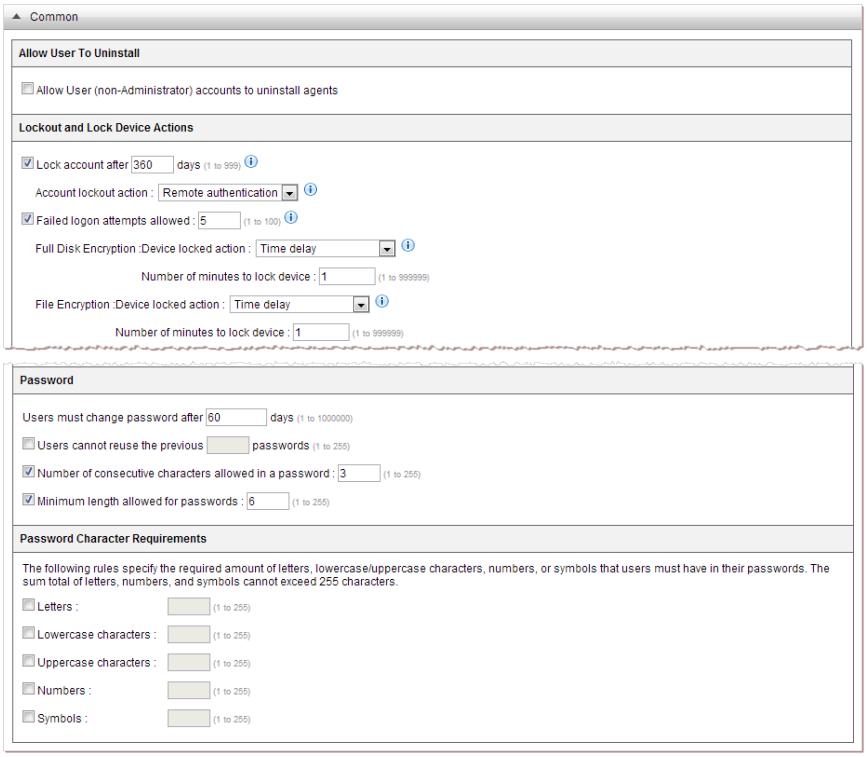


FIGURE 5-5. Common Policy Rules

3. Under **Allow User to Uninstall**, select **Allow User (non-administrator) accounts to uninstall agent software** to allow any Endpoint Encryption user to uninstall the agent.

> **Note**
> By default, only Enterprise Administrator accounts can uninstall Endpoint Encryption agents.

4. Under **Lockout and Lock Device Actions**, configure the following options:
   - Select **Lock account after <number> days** to specify the number of days that the Endpoint Encryption device locks if it does not synchronize policies.
     - Use **Account lockout action** to specify whether the remote authentication or erase action occurs at lockout.

       > **Note**
       > For information about lock options, see *Account Lockout and Device Lock Actions on page 3-24*

   - Select **Failed log on attempts allowed** to specify how many times that a user can attempt to authenticate before the Endpoint Encryption device locks.
   - For Full Disk Encryption or File Encryption devices, separately configure the following:
     - Use **Device locked action** to specify whether the "Remote Authentication" or the "Erase" action occurs at lockout.

       > **Note**
       > For information about lock options, see *Account Lockout and Device Lock Actions on page 3-24*

     - Use **Number of minutes to lock device** to specify the duration that time delay locks the Endpoint Encryption device from authentication

5. Under **Password**, configure the following options:
   - Select **Users must change password after <number> days** to control when a user is prompted to update password.
   - Select **Users cannot reuse the previous <number> passwords** to specify how many previous passwords the user may reuse.

- Select **Number of consecutive characters allowed in a password** to specify how many repeated characters a user may specify in the password.
- Select **Minimum length allowed for passwords** to specify how many characters the user is required to use in the password.

6. Under **Password Requirements**, specify the password character limitations.
   - **Letters**
   - **Lowercase characters**
   - **Uppercase characters**
   - **Numbers**
   - **Symbols**

Important

The sum total of letters, numbers, and symbols cannot exceed 255 characters.

Account Lockout and Device Lock Actions

Some policies have settings to lock out a user account or to lock a device based on certain criteria. Account lockout and device lock actions affect the Endpoint Encryption device whether or not the agent synchronizes policies with PolicyServer. For example, if the Endpoint Encryption agent does not communicate with PolicyServer for a certain period of time, the Endpoint Encryption agent automatically locks the Endpoint Encryption device. Use the tables below to understand the actions available for the account lockout and device lock actions.

TABLE 5-5. Account Lockout Actions

ACTION	DESCRIPTION
Remote authentication	Users cannot log on to the Endpoint Encryption device until after Technical Support provides remote authentication assistance.
Erase	All data is erased the next time that the agent synchronizes policies.

Note

Account lockout actions take effect when the Endpoint Encryption agent does not communicate with PolicyServer for a certain period of time (set by policy).

TABLE 5-6. Device Lock Actions

ACTION	DESCRIPTION
Erase	All data is erased the next time that the Endpoint Encryption agent synchronizes policies.
Remote authentication	Users cannot log on to Endpoint Encryption devices until after Technical Support provides remote authentication assistance.
Time delay	Users cannot log on to Endpoint Encryption devices for a specified time duration.

Note

Device lock actions take effect when the Endpoint Encryption user has too many unsuccessful logon attempts to that Endpoint Encryption device (set by policy).

Remote Help Policy Rules

The following table describes the locations of the account lockout and device lock policies that affect Remote Help authentication. Use it to understand which policies are appropriate to set.

TABLE 5-7. Remote Help Policy Locations

POLICY NAME	POLICYSERVER MMC MENU PATH	CONTROL MANAGER MENU PATH	DESCRIPTION
Account Lockout Action	**Login** > **Account Lockout Action**	**Common** > **Lockout and Lock Device Actions** > **Account Lockout Action**	The action taken when the length of time in “Account Lockout Actions” include: erase, remote authentication.

Policy Name	PolicyServer MMC Menu Path	Control Manager Menu Path	Description
Account Lockout Period	**Login** > **Account Lockout Period**	**Common** > **Lockout and Lock Device Actions** > **Lock account after [ ] days**	The number of days that a device can not communicate with PolicyServer before "Account Lockout Action" is called.
Device Locked Action	For each agent: **Login** > **Device Locked Action**	For each agent: **Common** > **Lockout and Lock Device Actions** > **Device locked action**	The action taken when the "Failed Attempts Allowed" policy value has been exceeded. Actions include: time delay, erase, remote authentication.
Failed Login Attempts Allowed	For each agent: **Login** > **Failed Login Attempts Allowed**	For each agent: **Common** > **Lockout and Lock Device Actions** > **Failed logon attempts allowed**	The number of failed login attempts allowed before executing the action defined in "Device Locked".

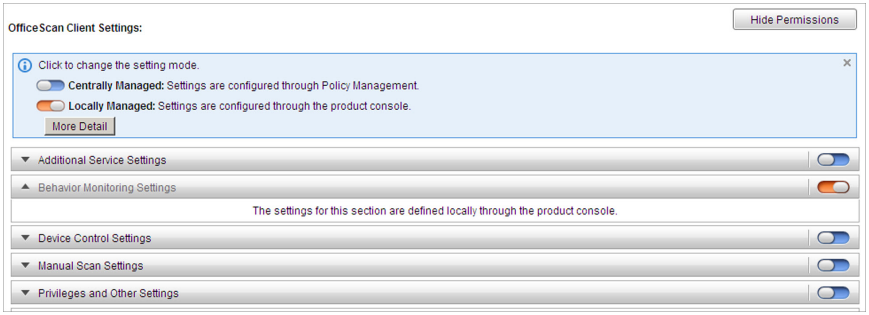
Changing Setting Permissions

When configuring the policy settings, administrators can grant managed product administrators the permissions to define the settings of certain features. Follow the steps below to change setting permissions when creating or editing a policy:

Procedure

1. In the Settings section, click **Show Permissions**.

   A switch appears at the right side of each feature.



2. Click the switch to change the setting permission.

   - **Centrally Managed** (Blue): The assigned targets will comply to the settings defined in the policy.
   - **Locally Managed** (Orange): Control Manager does not deploy the settings of the selected feature to the targets. The managed product administrators can define the settings through the product console.

   Note

   When administrators deploy a policy with all feature settings switched to locally managed, the policy status of the targets will remain in the pending state.

Copying Policy Settings

Administrators can copy the settings from an existing policy, create a new policy with the same settings, and deploy the settings to different endpoints or managed products.

Procedure

1. Navigate to **Policies** > **Policy Management**.

   The **Policy Management** screen appears.

2. Select the type of product settings from the **Product** list.

   The screen refreshes to display policies created for the selected managed product.

3. Select a policy from the list.
4. Click **Copy Settings**.

   The **Copy and Create Policy** screen appears.
5. In the **Policy Name** field, type a name for the policy.
6. Assign **Targets** to the policy.
7. Click **Deploy**.

Note

- After clicking **Deploy**, please wait two minutes for Control Manager to deploy the policy to the targets. Click **Refresh** on the **Policy Management** screen to update the status information in the policy list.
- Control Manager enforces the policy settings on the targets every 24 hours.

Editing a Policy

Administrators can change the information of a policy including the policy name, targets, and settings. Only the policy creator can modify the policy.

Control Manager supports the following changes:

- Modifying a filtered policy
- Adding more targets to a specified policy
- Removing some targets from a specified policy

Note

Control Manager only allows the policy creators to make changes to their own policies. However, the root account can edit every policy in the list.

Procedure

1. Go to **Policies** > **Policy Management**.

The **Policy Management** screen appears.

2. Select the type of product settings from the **Product** list.

   The screen refreshes to display policies created for the selected managed product.

3. Click a policy name in the **Policy** column.

   The **Edit Policy** screen appears.

4. Modify the policy.

5. Click **Deploy**.

   The changes apply immediately.

Note

- After clicking **Deploy**, please wait two minutes for Control Manager to deploy the policy to the targets. Click **Refresh** on the **Policy Management** screen to update the status information in the policy list.
- Control Manager enforces the policy settings on the targets every 24 hours.

Deleting a Policy

Administrators can remove a policy from the list. Control Manager then re-allocates the targets associated with the deleted policy if the targets match the filtering criteria of another policy. Those without a match become endpoints without policies, and they keep the settings defined by the deleted policy unless a managed product administrator modifies the settings.

Note

Control Manager only allows the policy creator to delete his own policies. However, the root account can delete every policy in the list.

Procedure

1. Navigate to **Policies** > **Policy Management**.

The **Policy Management** screen appears.

2. Select the type of product settings from the **Product** list.

   The screen refreshes to display policies created for the selected managed product.

3. Select the policy to delete.

4. Click **Delete**.

   A confirmation screen appears.

5. Click **OK**.

Understanding the Managed Server List

The **Managed Servers** screen shows the servers administrators can manage using policy management. Use the screen to add and edit managed products that do not have MCP agents.

Note

When the **Add** button is disabled, policy management only supports managed products using MCP agents.

For managed products using MCP agents, Control Manager uses the Single Sign-on (SSO) function to access these products by default. Administrators can edit the authentication information for the following reasons:

- The SSO function does not function properly
- Administrators want to access the managed product using another account

TABLE 5-8. Managed Server List

MENU ITEM	DESCRIPTION
Server	Displays the server name of the managed product.

Menu Item	Description
Display Name	Displays the server display name of the managed product.
Product	Displays the name of the managed product.
Connection Type	Displays how the managed product registers to Control Manager. • Automatic: The managed product registers to Control Manager through an MCP agent. • Manual: Administrators manually added the managed product to the **Managed Servers** screen.
Last Report	Shows the date and time when Control Manager received a response from the managed product.
Actions	• Edit: Click this icon to update the server information. • Delete: Click this icon to delete a manually added server. **Note** Control Manager cannot remove servers registered using MCP agents.

Adding PolicyServer as a Managed Product to Control Manager

Endpoint Encryption allows administrators to use Trend Micro Control Manager to control PolicyServer and manage Endpoint Encryption agent policies or use Trend Micro OfficeScan to deploy Endpoint Encryption agent software on managed endpoints.

To use Control Manager to manage PolicyServer, you must add PolicyServer as a managed product.

Make sure to complete the following tasks before proceeding:

1. Install and configure Control Manager.

   See the supporting documentation at:

   http://docs.trendmicro.com/en-us/enterprise/control-manager.aspx

2. Install and configure PolicyServer.

   See the *Endpoint Encryption Installation and Migration Guide*.

Important

Endpoint Encryption supports only one configured PolicyServer instance in Control Manager at a time. It is not possible to add multiple PolicyServer configurations. To configure a different PolicyServer, first remove the previously configured PolicyServer.

Procedure

1. Review all system requirements for compatible product versions.

   See the *Endpoint Encryption Installation and Migration Guide*.

2. Log on to Control Manager.

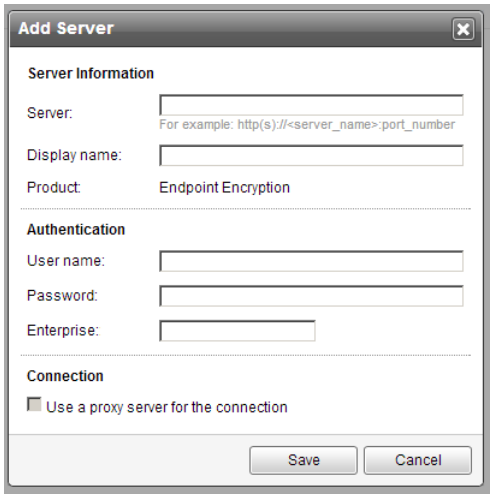
3. Go to **Policies** > **Policy Resources** > **Managed Servers**.

   The **Managed Servers** screen appears.

4. In the **Server Type** drop-down list, select **Endpoint Encryption**.

5. Click **Add**.

The **Add Server** screen appears.



6. Specify **Server Information** options.

   - **Server**: Specify the PolicyServer host name and the port number. Use the following format:

     ```
     http(s)://<server_name>:port_number
     ```

     Note

     Control Manager communicates with PolicyServer Endpoint Encryption Service. The default port number is 8080.

   - **Display name**: Specify how PolicyServer shows in the **Managed Servers** screen

7. Under **Authentication**, specify the user name and password of the Endpoint Encryption Enterprise Administrator account.

8. Under **Connection**, select **Use a proxy server for the connection** if PolicyServer requires a proxy connection.

9. Click **Save**.

Note

Synchronization between Control Manager and PolicyServer may require several minutes to complete.

PolicyServer is added as a new managed product to Control Manager.

Editing a Server

Procedure

1. Navigate to **Policies** > **Policy Resources** > **Managed Servers**.

   The **Managed Servers** screen appears.

2. Click the **Edit** icon in the **Actions** column.
3. Edit the server information.
4. Click **Save**.

Configuring the Proxy Settings

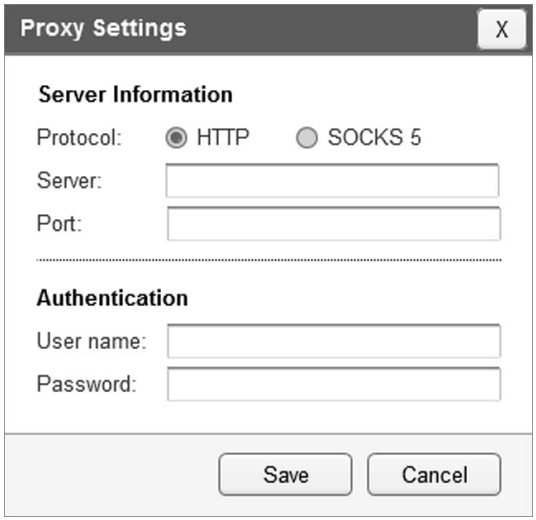
Use a proxy server to connect to the managed products.

Procedure

1. Navigate to **Policies** > **Policy Resources** > **Managed Servers**.

   The **Managed Servers** screen appears.

2. Click **Proxy Settings**.



3. Select the protocol:
   - HTTP
   - SOCKS 5
4. Type the server name in the **Server** field.
5. Type the port number in the **Port** field.
6. Type the user name and password to access the server if it requires authentication.
7. Click **Save**.

Updating the Policy Templates

The **Policy Template Settings** screen lists the following components available for administrators to enable or upgrade:

- Policy Management Framework: The overall policy structure
- Product Support: The setting templates for managed products and endpoints

Note

To check the product versions that support policy management, move the mouse cursor over the information icon in the Template Version column.

Procedure

1. Download the latest **Control Manager widget pool and policy templates (for Control Manager 6.0 and later)** component.

   A blue notification appears on the top of the **Dashboard** and **Policy Management** screens.

2. Click **Update Now** in the notification box on either of the screens.

3. Click **OK** when the update completes.

   The screen refreshes and the logon screen appears.

4. Log on to the web console.

5. Navigate to **Policies** > **Policy Resources** > **Policy Template Settings**.

   The **Policy Template Settings** screen appears.

6. Click **Update <version number>** in the Policy framework row.

7. To add a new policy template, click **Enable** in the Action column.

   Administrators can then select the new setting templates from the **Product** list on the **Policy Management** screen.

8. To update an existing template, click **Update <version number>** in the Action column.

   Note

   To see more information about the update, click **Details** in the Action column.

Once the update completes, administrators can check the updated features by editing existing policies. Under the Settings section, a red message appears next to the new feature title.

Chapter 6

Users in Control Manager

Endpoint Encryption has several types of account roles and authentication methods for comprehensive identity-based authentication and management. Using Control Manager or PolicyServer MMC, you can add or import user accounts, control authentication, synchronize with the Active Directory, and manage policy group membership, as needed.

This chapter explains account roles and authentication methods, how to administer Control Manager to manage policies affecting Endpoint Encryption user, and how to control information access by using the specialized **Endpoint Encryption Users** widget. This chapter also explains how to use PolicyServer MMC to restore deleted Endpoint Encryption users.

Note

For a description of Endpoint Encryption user roles and authentication, see *Endpoint Encryption Users on page 2-4*.

Topics include:

- *Endpoint Encryption Users Widget on page 4-9*
- *Adding Users to Endpoint Encryption on page 6-4*
- *Finding a User on page 6-10*
- *Modifying a User on page 6-10*

- *Working with Passwords on page 6-11*
- *Working with Policy Membership on page 6-16*

Endpoint Encryption Users Widget

The **Endpoint Encryption Users** widget provides user management capability directly from the Control Manager dashboard. Use the **Endpoint Encryption Users** widget to add or remove Endpoint Encryption user accounts, reset passwords, change permissions, configure policy group priority, import from Active Directory, and search for specific user accounts.

Note

For information about managing users with the **Endpoint Encryption Users** widget, see *Users in Control Manager on page 6-1*.

For information about adding existing Endpoint Encryption users to a policy, see *Configuring Endpoint Encryption Users Rules on page 3-14*.

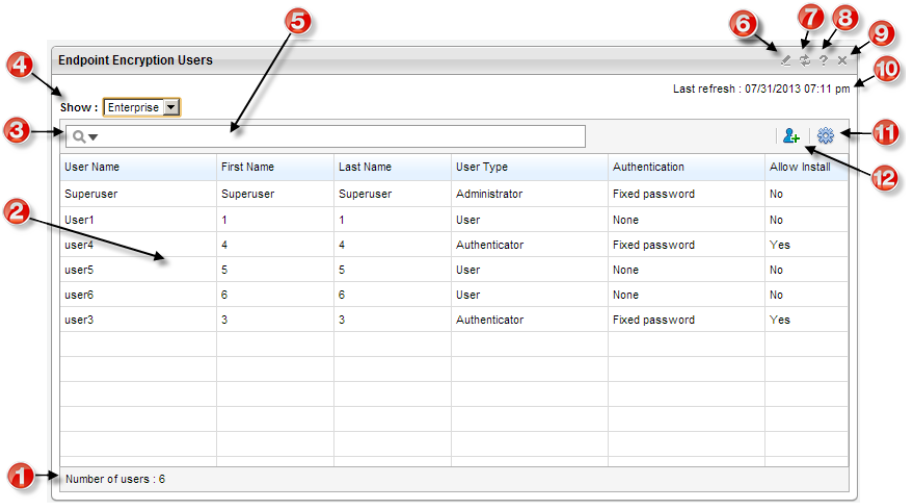


FIGURE 6-1. Endpoint Encryption Users Widget

TABLE 6-1. Endpoint Encryption Users Widget Description

ITEM	DESCRIPTION
1	The total number of users in the entire Enterprise, selected policy, or specified search.
2	All users in the Enterprise, selected policy, or specified search.
3	Click the icon to filter which Endpoint Encryption users appear in the table.
4	Click the **Show** drop-down box to select the Enterprise or a specific policy to show in the table.
5	Use the search field to specify parameters to search against.
6	Click the icon to configure widget settings.
7	Click the icon to refresh widget data.
8	Click the icon to view online help.
9	Click the icon to close the widget.
10	View the last time that the widget synchronized data with PolicyServer.
11	Click the icon to view user attributes or to perform actions on any selected user.
12	Click the icon to add individual users, import users from a CSV file, or import users from Active Directory LDAP.

Adding Users to Endpoint Encryption

Endpoint Encryption has several options to add users to Endpoint Encryption:

- Add users manually, one at a time
- Bulk import numerous users with a CSV file
- Use the External Directory Browser with Active Directory

Adding a New Enterprise User

Procedure

1. From the **Endpoint Encryption Users** widget, click the icon and then select **Add new user**.

   The **Add New User** screen appears.

2. Specify the new user account details:

   - **User name**
   - **First name**
   - **Last name**
   - **Employee ID**
   - **Email address**
   - **Freeze**
   - **User type**
   - **One policy**
   - **Authentication method**

   Note

   For information about the configuration options, see *Add New User Options on page 6-6*.

3. Click **Add**.

The new user is added to the Enterprise. To assign the user to a policy, see *Adding an Existing User to a Policy on page 6-21*.

Add New User Options

The following table explains the options available when adding a new Endpoint Encryption user.

TABLE 6-2. Add New User Options

OPTION	DESCRIPTION
User name	Specify the account user name that the user uses to authenticate.
First name	Specify the user's first name.
Last name	Specify the user's last name.
Employee ID	Specify the user's employee ID (optional).
Email address	Specify user's email address (optional).
Freeze	Select **Yes** to temporarily lock the account. A locked account cannot log on to Endpoint Encryption devices.
User type	Select **User**, **Authenticator**, or **Administrator**.
One group	Select **Yes** to only allow the user to belong to one policy at a time.
Authentication method	Select the authentication method available to the user.

Importing Users from a CSV File

Format each line in the CSV file as follows:

User ID (required), first name, last name, employee ID, email address

For fields with no data, use a comma as a placeholder.

Example: User ID,,, employee ID, email address

Procedure

1. From the **Endpoint Encryption Users** widget, click **Add User** and then select **Import Users from a File**.

   The **Import Users from a File** screen appears.

2. Click **Choose File** to select the CSV file.

   The **Open CSV File** window appears.

3. Select the file and then click **Open**.

4. Click **Add**.

The users in the CSV file are imported.

Importing Active Directory Users

PolicyServer maintains a user directory separate from the Active Directory database. This allows PolicyServer absolute security over access to all Endpoint Encryption devices, user rights, and authentication methods.

For information about configuring Active Directory integration, see the *Endpoint Encryption Installation and Migration Guide*.

Procedure

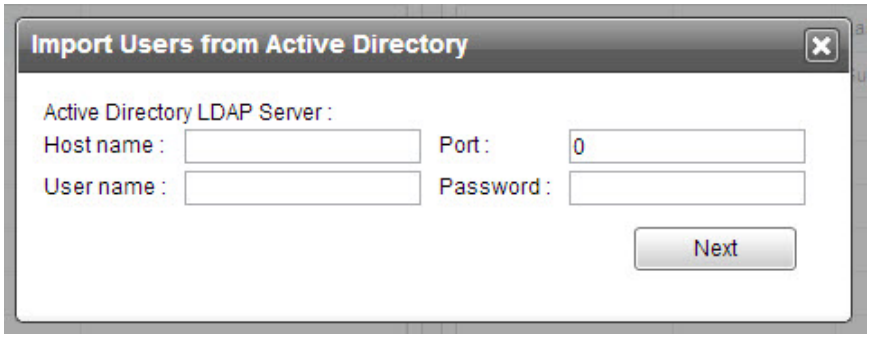
1. Log on to Control Manager.

2. Go to the **Endpoint Encryption Users** widget.

3. Click the icon.

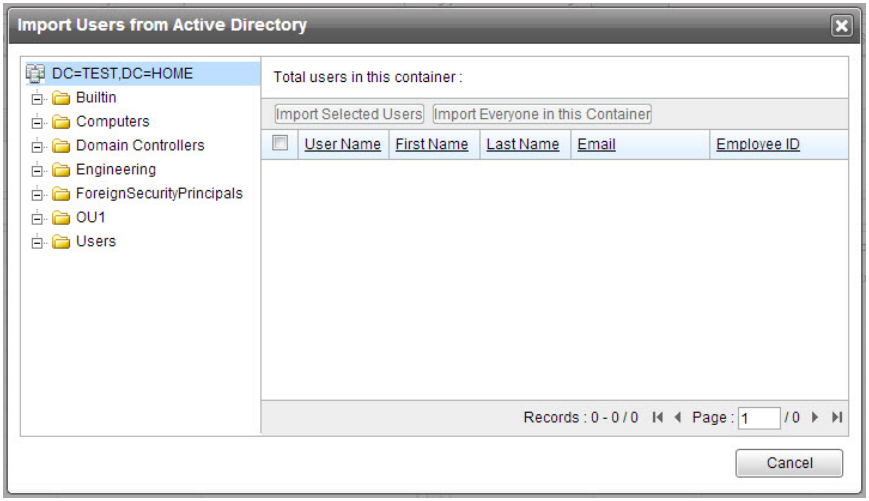
4. Select **Import Users from Active Directory**

The **Import Users from Active Directory** screen appears.



5. Specify the following parameters for the Active Directory LDAP Server:
   - **Host name**
   - **Port**
   - **User name**
   - **Password**
6. Click **Next**.
7. Wait for the specified Active Directory domain to populate.

The Active Directory tree for the specified domain appears in the left pane.



8. From the left pane, use the navigation tree to select the container from which to add users.

   The available users populate in the right pane.

9. Do one of the following:

   - Select individual users, then click **Import Selected Users**.
   - Click **Import Everyone in this Container**.

10. Click **OK** to add the users to the specified location.

    A confirmation window appears.

11. Click **OK** to confirm.

    An import status message displays.

12. Click **Close** to finish, or repeat the procedure to select more users to import.

Finding a User

For a description of the **Endpoint Encryption Users** widget, see *Endpoint Encryption Users Widget on page 4-9*.

Note

Adding a user to the Enterprise does not assign any policy target to the new user account.

Procedure

1. Use the **Show** drop-down list to control whether to show data for the entire Enterprise or only selected policy targets.
2. Click the icon to filter which Endpoint Encryption users appear in the table.
3. Specify search criteria and then press the ENTER key.

All users matching the search criteria display.

Modifying a User

Procedure

1. Select the user account.

   See *Finding a User on page 6-10*.

2. Do one of the following:

   - Right-click the user in the table and select the following option:

     Modify User

   - Select the user in the table, click the icon, and then select the following option:

     Modify User

The **Modify User** screen appears.

3. Specify the changes, and then click **Save Changes**.

   For information about the configuration options, see *Add New User Options on page 6-6*.

Working with Passwords

When a user forgets the password or misplaces an endpoint, the user can reset the password using methods defined by policies. The following password reset methods are available:

- Microsoft Windows Active Directory
- Control Manager
- PolicyServer MMC
- Remote Help
- Self Help

All of these options involve setting the policy at the Enterprise or at the group/policy level, if necessary. Use the Support Information policy to provide support-related information to users about password resets.

Note

For information about configuring support information in Control Manager, see *Endpoint Encryption Policy Settings on page 5-12*.

For information about configuring support information in PolicyServer MMC, see *Support Information Setup on page 11-29*.

Changing an Enterprise Administrator/Authenticator Password

Note

It is not possible modify multiple users' passwords at the same time.

Procedure

1. In the **Show** drop-down list, select **Enterprise**.
2. Select the user account.

   See *Finding a User on page 6-10*.
3. Do one of the following:
   - Right-click the user in the table and select the following option:

     Change password
   - Select the user in the table, click the icon, and then select the following option:

     Change password

   Note

   Use the **User Type** column to find the appropriate account role.

   The **Change Password** screen appears.
4. Specify the new password settings.
5. Click **Save**.

Resetting a Policy Administrator/Authenticator Password

Changing the password only affects the user name and password combination for the current policy group. Policy group passwords are unique to other policy group passwords. To change the password for the user account across all policy groups, make sure to change the account password at the Enterprise level.

Procedure

1. In the **Show** drop-down list, select the appropriate policy name.
2. Select the user account.

   For information about finding the account, see *Finding a User on page 6-10*.
3. Do one of the following:
   - Right-click the user in the table and select the following option:

     Change password
   - Select the user in the table, click the icon, and then select the following option:

     Change password

   Note

   Use the **User Type** column to find the appropriate account role.

   The **Change Password** screen appears.
4. Specify the new password settings.
5. Click **Save**.

Resetting a Fixed Password

Changing the password only affects the user name and password combination for the current policy group. Policy group passwords are unique to other policy group

passwords. To change the password for the user account across all policy groups, make sure to change the account password at the Enterprise level.

Procedure

1. In the **Show** drop-down list, select the appropriate group name.
2. Select the user account.

   For information about finding the account, see *Finding a User on page 6-10*.
3. Do one of the following:
   - Right-click the user in the table and select the following option:

     Change password
   - Select the user in the table, click the icon, and then select the following option:

     Change password

   Note

   Use the **User Type** column to find the appropriate account role.

   The **Change Password** screen appears.
4. In the **Authentication method** drop-down list, make sure that **Fixed Password** is selected.
5. Specify the new fixed password.
6. Confirm the new fixed password.
7. Click **Save**.

Changing a User to Domain Authentication

If configured, users can authenticate using Active Directory credentials. It is not possible to change the Active Directory password.

Procedure

1. In the **Show** drop-down list, select the appropriate group name.
2. Select the user account.

   For information about finding the account, see *Finding a User on page 6-10*.
3. Do one of the following:
   - Right-click the user in the table and select the following option:

     Change password
   - Select the user in the table, click the icon, and then select the following option:

     Change password

   Note

   Use the **User Type** column to find the appropriate account role.

   The **Change Password** screen appears.
4. In the **Authentication method** drop-down list, select **Domain**.
5. Click **Save**.

Changing a User to Fixed Password

Changing the password only affects the user name and password combination for the current policy group. Policy group passwords are unique to other policy group passwords. To change the password for the user account across all policy groups, make sure to change the account password at the Enterprise level.

Procedure

1. In the **Show** drop-down list, select the appropriate group name.

2. Select the user account.

   For information about finding the account, see *Finding a User on page 6-10*.

3. Do one of the following:

   - Right-click the user in the table and select the following option:

     Change password

   - Select the user in the table, click the icon, and then select the following option:

     Change password

   Note

   Use the **User Type** column to find the appropriate account role.

   The **Change Password** screen appears.

4. In the **Authentication method** drop-down list, select **Fixed Password**.
5. Specify the fixed password.
6. Confirm the fixed password.
7. Click **Save**.

Working with Policy Membership

This section explains how to add or remove users from a policy group, and how to restore a deleted user.

Groups

To streamline policy management, Control Manager merges the PolicyServer MMC group and policy hierarchy together. PolicyServer maintains the same policy and group

configuration no matter which management console you prefer. When you create a new policy target in Control Manager, PolicyServer MMC shows a new group that contains the policy configurations and the users added to that policy.

Important

Control Manager always takes precedence. Any modifications to the group assignment in PolicyServer MMC are automatically overwritten the next time that Control Manager synchronizes with PolicyServer.

Policy Membership

The following table explains how to understand Endpoint Encryption user policy membership.

Note

Encryption Management for Apple FileVault and Encryption Management for Microsoft BitLocker do not require authentication and are not affected by authentication policies. Client, login, password, and authentication policies, or allowing the user to uninstall the Endpoint Encryption agent software only affects the Full Disk Encryption and File Encryption agents.

TABLE 6-3. Policy Membership Descriptions

HEADER	EXAMPLE	DESCRIPTION
Priority	1, 2. 3	Shows the order that policies are applied to the Endpoint Encryption user. For more information, see *Changing a User's Policy Priority on page 6-20*.
Policy Name	GP1	Shows the name of all policies that the user is currently assigned.

HEADER	EXAMPLE	DESCRIPTION
Description	Temporary employees policy.	Shows the description of the policy. To change the policy description, see *Editing a Policy on page 5-25*.
Allow Install	Yes, No	Shows whether the user can install new Endpoint Encryption devices. For more information, see *Allowing a User to Install Devices on page 6-19*.

Viewing a User's Assigned Policies

Use the **Policy Membership** screen to view Endpoint Encryption user policy assignment. Allowing Endpoint Encryption users to install means that the user account is allowed to add new Endpoint Encryption devices to their assigned policy groups by installing the Endpoint Encryption agent software on any endpoint. Changing the priority affects the policy membership of the new Endpoint Encryption devices when the user installs the Endpoint Encryption agent. The highest priority (1) policy is the default policy.

Procedure

1. Select the user account.

   For information about finding the account, see *Finding a User on page 6-10*.

2. Do one of the following:

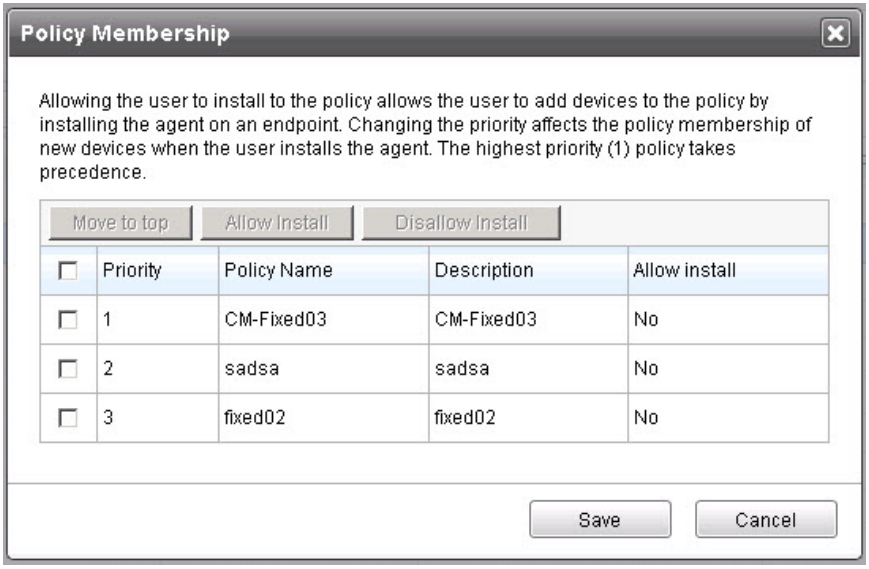
   - Right-click the user in the table and select the following option:

     List policies

   - Select the user in the table, click the icon, and then select the following option:

     List policies

The **Policy Membership** screen appears.



3. Optionally change the policy assignment.
   a. Select the check box next to the appropriate policy.
   b. Click **Allow Install**.
   c. Click **Save**.

Allowing a User to Install Devices

This option allows Endpoint Encryption users to add Endpoint Encryption devices to a policy without requiring Policy Administrator/Authenticator permissions in the policy. The default is **No**.

Procedure

1. Go to the Endpoint Encryption user's policy list.

See *Viewing a User's Assigned Policies on page 6-18*.

2. Select the check box next to the policy that the user should be able to install devices.

3. Click **Allow Client Install**.

Changing a User's Policy Priority

The policy priority defines the order that policies are applied when a user logs on the device. The first policy in the policy list is the default policy for the user. When a user installs a device, the device is always assigned to the user's default policy.

Note

The user must be allowed to install to the default group. For more information, see *Allowing a User to Install Devices on page 6-19*.

Procedure

1. Go to the user's policy list.

   See *Viewing a User's Assigned Policies on page 6-18*.

2. Select the check box next to the policy to set as the default policy.

3. Click **Move to Top**.

Adding a New User to a Policy

Policies can only add existing users. To add a user, first use the **Endpoint Encryption Users** widget to add a new user and then add that user account to a policy. It is not possible to assign a new user directly to a policy using the **Endpoint Encryption Users** widget.

Procedure

1. Create the new user with the **Endpoint Encryption Users** widget.

   See *Adding a New Enterprise User on page 6-5*.

2. Add the user to a policy.

   See *Adding an Existing User to a Policy on page 6-21*.

Adding an Existing User to a Policy

It is not possible to directly assign a new user to a policy using the **Endpoint Encryption Users** widget.

Note

For information about the available user options in the policy, see *Configuring Endpoint Encryption Users Rules on page 3-14*.

Administrators can change the information of a policy including the policy name, targets, and settings. Only the policy creator can modify the policy.

Control Manager supports the following changes:

- Modifying a filtered policy
- Adding more targets to a specified policy
- Removing some targets from a specified policy

Procedure

1. Go to **Policies** > **Policy Management**.

   The **Policy Management** screen appears.

2. Select the type of product settings from the **Product** list.

   The screen refreshes to display policies created for the selected managed product.

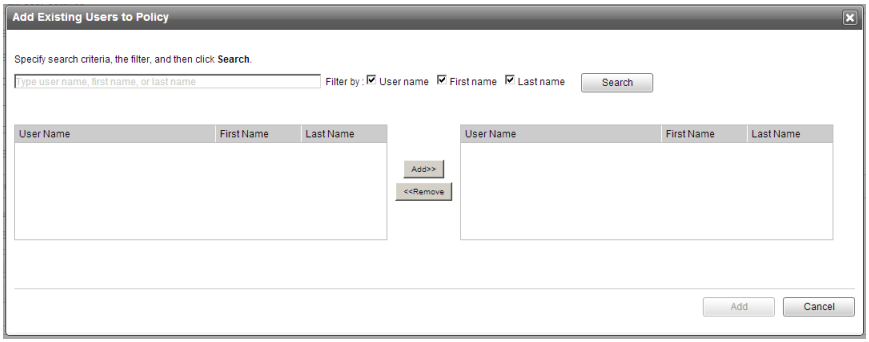
3. Click a policy name in the **Policy** column.

   The **Edit Policy** screen appears.

4. In the **Users** section, select **Select specific users**.

5. Click **Select User**.

   The **Add Existing Users to Policy** screen appears.



6. Specify the search criteria and then click **Search**.

   Any users matching the search criteria display in the left pane.

7. To add a user to the policy, select the user in the left pane and then click **Add>>**.

   The user account moves to the right pane.

8. To remove a user from the selection, select the user in the right pane and then click **<<Remove**.

   The user account moves to the left pane.

9. Click **Add**.

10. Click **Deploy**.

    The changes apply immediately.

Note

- After clicking **Deploy**, please wait two minutes for Control Manager to deploy the policy to the targets. Click **Refresh** on the **Policy Management** screen to update the status information in the policy list.
- Control Manager enforces the policy settings on the targets every 24 hours.

Removing Users from a Policy

WARNING!

- Before removing the Administrator or Authenticator account, reassign this role to another Endpoint Encryption user. Otherwise, only Enterprise Administrator and Enterprise Authenticator accounts can make changes to the policy.
- Removing Endpoint Encryption users from a policy restricts access to all encrypted Endpoint Encryption devices assigned to that policy. Before removing the users, make sure that they back up and decrypt their data.

It is not possible to remove a user from a policy using the Endpoint Encryption Users widget. For information about the available user options, see *Configuring Endpoint Encryption Users Rules on page 3-14*.

Administrators can change the information of a policy including the policy name, targets, and settings. Only the policy creator can modify the policy.

Control Manager supports the following changes:

- Modifying a filtered policy
- Adding more targets to a specified policy
- Removing some targets from a specified policy

Procedure

1. Go to **Policies** > **Policy Management**.

   The **Policy Management** screen appears.

2. Select the type of product settings from the **Product** list.

   The screen refreshes to display policies created for the selected managed product.

3. Click a policy name in the **Policy** column.

   The **Edit Policy** screen appears.

4. Modify the policy.

5. Select all users to remove from the policy, and then click **Remove User From Policy**.

6. Click **Deploy**.

   The changes apply immediately.

Note

- After clicking **Deploy**, please wait two minutes for Control Manager to deploy the policy to the targets. Click **Refresh** on the **Policy Management** screen to update the status information in the policy list.
- Control Manager enforces the policy settings on the targets every 24 hours.

Removing All Users From a Policy

Procedure

1. Go to **Policies** > **Policy Management**.

   The **Policy Management** screen appears.

2. Select the type of product settings from the **Product** list.

   The screen refreshes to display policies created for the selected managed product.

3. Click a policy name in the **Policy** column.

   The **Edit Policy** screen appears.

4. Expand the **Users** section, and then select **Select specific users**, if not already selected.

5. Select all user accounts, then select **Remove User**.

   All users have been removed from the policy.

6. Click **Deploy**.

   The changes apply immediately.

Note

- After clicking **Deploy**, please wait two minutes for Control Manager to deploy the policy to the targets. Click **Refresh** on the **Policy Management** screen to update the status information in the policy list.
- Control Manager enforces the policy settings on the targets every 24 hours.

Restoring a Deleted User

For both Control Manager and PolicyServer MMC environments, use the PolicyServer MMC Recycle Bin node to restore a deleted Endpoint Encryption user.

Procedure

1. Log on to PolicyServer MMC.

2. Expand the **Recycle Bin**.

3. Open **Deleted Users**.

   The right pane loads all deleted users.

4. Right-click the user account, then select **Restore User**.

   The user is added back to the Enterprise, but does not belong to any policy groups.

Chapter 7

Devices in Control Manager

Endpoint Encryption devices are Endpoint Encryption agents that have registered with PolicyServer. Installing any Endpoint Encryption agent automatically registers the endpoint with PolicyServer as a new Endpoint Encryption device. Since multiple Endpoint Encryption agents may protect a given endpoint, a single endpoint may appear as more than one Endpoint Encryption device on PolicyServer.

This chapter explains how to administer Control Manager to manage policies affecting Endpoint Encryption devices, and how to ensure data security by using the specialized Endpoint Encryption devices widget. This chapter also explains how to use PolicyServer MMC to restore deleted Endpoint Encryption devices.

Topics include:

- *Adding a Device to a Policy on page 7-3*
- *Removing a Device From a Policy on page 7-6*
- *Endpoint Encryption Devices Widget on page 4-11*
- *Finding a Device on page 7-9*
- *Deleting a Device From the Enterprise on page 7-16*
- *Getting a Software Token on page 7-9*
- *Getting a Recovery Key on page 7-10*
- *Viewing Device Attributes on page 7-11*

- *Killing a Device on page 7-14*
- *Locking a Device on page 7-15*
- *Resetting a Device on page 7-15*
- *Restoring a Deleted Device on page 7-17*

Adding a Device to a Policy

Endpoint Encryption devices are automatically added to the default policy assigned to the user installing the Endpoint Encryption agent on the endpoint. To manually add Endpoint Encryption devices to policies in Control Manager, assign policy targets to that policy. The following procedure explains how to add Endpoint Encryption devices to an existing Control Manager policy. For information about adding a new policy, see *Creating a Policy on page 3-11*.

Note

Each Endpoint Encryption device can only belong to a single policy.

Procedure

1. Go to **Policies** > **Policy Management**.

   The **Policy Management** screen appears.

2. Select the type of product settings from the **Product** list.

   The screen refreshes to display policies created for the selected managed product.

3. Click a policy name in the **Policy** column.

   The **Edit Policy** screen appears.

4. Modify the policy.

5. Select one of the following policy target options:

   - **None (Draft Only)**: Create a policy with no targets (endpoints)
   - **Filter by Criteria**: Endpoint Encryption does not support filtering by criteria
   - **Specify Target(s)**: Specify existing endpoints.

     Note

     For more information about policy targets, see *Specifying Policy Targets on page 3-13*

6. Click **Deploy**.

   The changes apply immediately.

Note

- After clicking **Deploy**, please wait two minutes for Control Manager to deploy the policy to the targets. Click **Refresh** on the **Policy Management** screen to update the status information in the policy list.
- Control Manager enforces the policy settings on the targets every 24 hours.

Specifying Policy Targets

Use the **Specify Target(s)** screen to assign Endpoint Encryption devices to the policy.

Note

The **Specify Target(s)** screen is available when creating a new policy.

For information about creating a policy, see *Creating a Policy on page 3-11*.

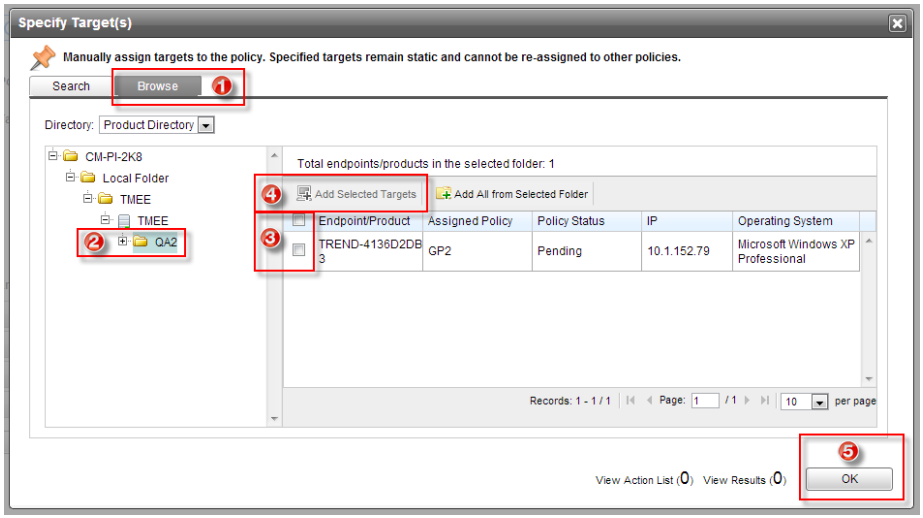


FIGURE 7-1. Specifying Policy Targets

Procedure

1. From the **Specify Target(s)** screen, click the **Browse** tab.
2. From the left pane, expand the tree to select the managed folder.

   Example: **CM-PI-2K8** > **Local Folder** > **TMEE** > **TMEE** > **QA2**
3. Select any appropriate Endpoint Encryption devices, or select the top check box to select all Endpoint Encryption devices listed on the current page.
4. Click **Add Selected Targets**.

> **Note**
>
> To immediately select all devices in the managed folder, click **Add All from Selected Folder**.

"View Action List" and "View Results" update based on the selection.

5. Click **OK**.

Removing a Device From a Policy

Procedure

1. Go to **Policies** > **Policy Management**.

   The **Policy Management** screen appears.

2. Select the type of product settings from the **Product** list.

   The screen refreshes to display policies created for the selected managed product.

3. Click a policy name in the **Policy** column.

   The **Edit Policy** screen appears.

4. Select **Specify Targets**.

   See *Specifying Policy Targets on page 3-13*.

   Note

   Filtering by criteria is not available for Endpoint Encryption.

5. Click **Deploy**.

   The changes apply immediately.

   Note

   - After clicking **Deploy**, please wait two minutes for Control Manager to deploy the policy to the targets. Click **Refresh** on the **Policy Management** screen to update the status information in the policy list.
   - Control Manager enforces the policy settings on the targets every 24 hours.

Endpoint Encryption Devices Widget

Endpoint Encryption devices are Endpoint Encryption agents that have registered with PolicyServer. Installing any Endpoint Encryption agent automatically registers the endpoint with PolicyServer as a new Endpoint Encryption device. Since multiple Endpoint Encryption agents may protect a given endpoint, a single endpoint may appear as more than one Endpoint Encryption device on PolicyServer.

The **Endpoint Encryption Devices** widget provides Endpoint Encryption device management capability directly from the Control Manager dashboard. Use the **Endpoint Encryption Devices** widget to monitor activity, search for Endpoint Encryption devices, or secure endpoint data by initiating lock or erase commands when an endpoint is lost or stolen.

Note

For information about managing devices with the **Endpoint Encryption Devices** widget, see *Devices in Control Manager on page 7-1*.

For information about adding Endpoint Encryption devices to a policy, see *Specifying Policy Targets on page 3-13*.

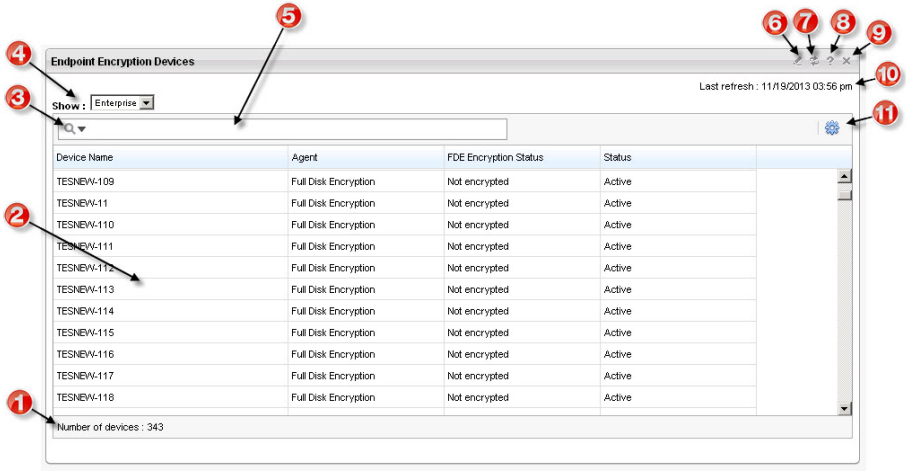


FIGURE 7-2. Endpoint Encryption Devices Widget

TABLE 7-1. Endpoint Encryption Devices Widget Description

ITEM	DESCRIPTION
1	View the total number of devices in the entire Enterprise, selected policy, or specified search.
2	View all devices in the entire Enterprise, selected group, or specified search. • **Device Name**: The computer name associated with the Endpoint Encryption device. • **Agent**: The installed Endpoint Encryption agent. • **FDE Encryption Status**: If Full Disk Encryption agent is installed, the encryption status. For information, see *Full Disk Encryption Status Widget on page 4-13*. • **Status**: The current status of the Endpoint Encryption device.
3	Click the icon to select the Endpoint Encryption agent and filter the devices shown in the table.
4	Click the **Show** drop-down box to select the entire Enterprise or a specific policy to show in the table.
5	Use the search field to specify parameters to search against. Any attributes listed in devices attributes can be searched.
6	Click the icon to configure widget settings.
7	Click the icon to refresh widget data.
8	Click the icon to view online help.
9	Click the icon to close the widget.
10	View the last time that the widget synchronized data with PolicyServer.
11	Click the icon to view device attributes or to perform actions on the selected device.

Finding a Device

For information about the **Endpoint Encryption Devices** widget user interface, see *Endpoint Encryption Devices Widget on page 4-11*.

Procedure

1. Go to the **Endpoint Encryption Devices** widget.
2. Do any or all of the following:
   - Click the icon to select the Endpoint Encryption agent and filter the devices shown in the table.
   - Click the **Show** drop-down box to select the entire Enterprise or a specific policy to show in the table.
   - Use the search field to specify parameters to search against. Any attributes listed in devices attributes can be searched.
3. Find the device from the table.

Getting a Software Token

Generating a "software token" creates a unique string that you can use to unlock Endpoint Encryption devices and to remotely help Endpoint Encryption users reset forgotten passwords.

Note

The software token is only available in the full version of Full Disk Encryption, not Encryption Management for Apple FileVault or Encryption Management for Microsoft BitLocker.

For information about remote help assistance, see *Remote Help Assistance on page 11-27*.

Procedure

1. Find the device.

   See *Finding a Device on page 7-9*

2. Right-click the device and select **Soft Token**.

   The **Software Token** screen appears.

3. Get the16-digit challenge code from the user, and type it into the **Challenge** field of the **Software Token** window.

4. Click **Get Response**.

   The **Response** field loads with an 8-character string.

5. Tell the user the 8-character string from the **Response** field.

The Endpoint Encryption device is unlocked and the Endpoint Encryption user can log on to the device.

Getting a Recovery Key

Generating a "recovery key" allows the user to decrypt a hard disk when the user has forgotten the original password or key. The recovery key is only available to Encryption Management for Apple FileVault and Encryption Management for Microsoft BitLocker agents because they do not use the other recovery methods available in Full Disk Encryption.

Note

The recovery key is used for encrypted devices and is only available as an option when applicable devices are selected.

Procedure

1. Find the device.

See *Finding a Device on page 7-9*

2. Do one of the following:
   - Right-click the device in the table and select **Recovery key**.
   - Select the device in the table, click the icon, and then select **Recovery key**.

   The recovery key appears.
3. Copy the recovery key for use on the locked device.
4. Click **OK**.

Viewing Device Attributes

Use **Device Attributes** to view a current snapshot of the selected device.

Procedure

1. Find the device.

   See *Finding a Device on page 7-9*
2. Do one of the following:
   - Right-click the device in the table and select **Attributes**.
   - Select the device in the table, click the icon, and then select **Attributes**.

The **Device Attributes** screen appears.

Endpoint Encryption Device Attributes

The following table describes the Endpoint Encryption device attributes.

TABLE 7-2. Endpoint Encryption Device Attributes

ATTRIBUTE NAME	EXAMPLE	DESCRIPTION
.NET Version	2.0.50727.3620	The version and build number for the installed .NET framework
Common Framework Build Number	5.0.0.84	The Endpoint Encryption agent uses a common framework for encryption. The build number is used to tell whether the agent is up-to-date
Disk Model	VMware Virtual IDE	The hard disk mode.
Disk Name	`\\.\PHYSICALDRIVE0`	The name of the hard dis.
Disk Partitions	1	The number of partitions on the disk with the agent installe.
Disk Size	10733990400	The total capacity of the hard disk (bytes.
Domain Name	WORKGROUP	The domain that the endpoint is a membe.
Endpoint ID	85b1e3e2a3c25d882540ef6e4818c3e4	The unique ID of the endpoint used for Control Manager integration.
<Agent> User	maryjane	The user name for the last logged on use.
<Agent> Version	5.0.0.260	The version and build number for the agent installation.
Hostname	TREND-4136D2DB3	The endpoint's host name.
IP Address	`10.1.152.219`	The endpoint's IP address.

Attribute Name	Example	Description
Locale	English (United States)	The language and region that the endpoint is configure.
Machine Name	TREND-4136D2DB3	The computer name that the endpoint use.
Manufacturer	VMware, Inc.	The manufacturer of the hard dis.
Model	VMware Virtual Platform	The model of the hard dis.
Operating System	Microsoft Windows NT 5.1.2600 Service Pack 3	The operating system installed on the same hard disk as the agent.
Operating System Name	Microsoft Windows XP Professional	The common name of the operating system installed on the same hard disk as the agent
Operating System Service Pack	Service Pack 3	The service pack number of the operating system installed on the same hard disk as the agent
Operating System Version	5.1.2600.196608	The version number of the operating system installed on the same hard disk as the agent
Partition Scheme	Classical MBR	The partition scheme for the hard disk
Processor	x86 Family 6 Model 30 Stepping 5, Genuine Intel	The processor make and model of the endpoint
Processor Count	2	The number of processors in the endpoint
Processor Revision	1e05	The processor revision number

Attribute Name	Example	Description
Time Zone	Taipei Standard Time	The time zone that the endpoint resides
Total Physical Memory	2047MB	The total RAM installed in or allocated to the endpoint
Type	X86-based PC	The endpoint processor type
Windows User Name	TREND-4136D2DB3\admin	The user name of the Windows account that last logged on the endpoint

Killing a Device

Initiating a "kill" command deletes all Endpoint Encryption device data. The deleted data is different depending on the scope of data that the associated Endpoint Encryption agent manages. For example, initiating a "kill" command to a Full Disk Encryption device deletes all data from the endpoint, while initiating a "kill" command to a File Encryption device deletes all files and folders in local or removable storage protected by the File Encryption agent. The "kill" command is issued when the Endpoint Encryption agent communicates with PolicyServer.

WARNING!

Killing a device cannot be undone. Back up all the data before initiating a kill command.

Procedure

1. Find the device.

   See *Finding a Device on page 7-9*

2. Do one of the following:

   - Right-click the device in the table and select **Kill**.
   - Select the device in the table, click the icon, and then select **Kill**.

3. At the warning message, click **Yes** to confirm.

Locking a Device

Initiating a "lock" command to the Endpoint Encryption device prevents Endpoint Encryption user access until after performing a successful Remote Help authentication. Locking a device reboots the endpoint and forces it into a state that requires Remote Help. The lock command is issued when the Endpoint Encryption agent communicates with PolicyServer.

Procedure

1. Find the device.

   See *Finding a Device on page 7-9*

2. Do one of the following:

   - Right-click the device in the table and select **Lock**.
   - Select the device in the table, click the icon, and then select **Lock**.

3. At the warning message, click **Yes** to confirm.

Resetting a Device

Initiating a "soft reset" command reboots the endpoint. The command issues the next time that the agent communicates with PolicyServer.

Procedure

1. Find the device.

   See *Finding a Device on page 7-9*

2. Do one of the following:

- Right-click the device in the table and select **Soft Reset**.
- Select the device in the table, click the icon, and then select **Soft Reset**.

3. At the warning message, click **Yes** to confirm.

Deleting a Device From the Enterprise

Deleting any Endpoint Encryption device from the Enterprise also removes the device from all policy groups. The deleted Endpoint Encryption device continues functioning as long as connectivity and password policies are current on the device. However, Endpoint Encryption users cannot recover files if the Endpoint Encryption device has a critical hardware failure after it has been removed from the Enterprise. To mitigate this risk, immediately decrypt the Endpoint Encryption device and uninstall the Endpoint Encryption agent software.

For information about removing a device from a specific policy, but not the Enterprise, see *Removing a Device From a Policy on page 7-6*.

WARNING!

Make sure to decrypt the device (files or hard disk) and uninstall the Endpoint Encryption agent before deleting a device from the Enterprise. Failure to do so may result in data loss.

Procedure

1. Uninstall the Endpoint Encryption agent from the endpoint.

   Note

   For information about uninstalling Endpoint Encryption agents, see the *Endpoint Encryption Installation and Migration Guide*.

2. Find the device.

   See *Finding a Device on page 7-9*

3. Do one of the following:

- Right-click the device in the table and select **Delete Device**.
- Select the device in the table and click **Delete Device**.

4. At the warning message, click **Yes** to confirm.

The Endpoint Encryption device is deleted from the Enterprise.

Note

For information about adding the Endpoint Encryption device back the Enterprise, see *Restoring a Deleted Device on page 7-17*.

Restoring a Deleted Device

For both Control Manager and PolicyServer MMC environments, use the PolicyServer MMC Recycle Bin node to restore a deleted Endpoint Encryption device.

Procedure

1. Log on to PolicyServer MMC.
2. Expand the Enterprise, then go to **Enterprise Maintenance**.
3. Expand the **Recycle Bin**.
4. Open **Deleted Devices**.

   The right pane loads all deleted Endpoint Encryption devices.
5. Right-click the Endpoint Encryption device and select **Restore Device**.

   The Endpoint Encryption device is added back to the Enterprise, but does not belong to any policy groups.

Part III

Administration with Endpoint Encryption PolicyServer MMC

Chapter 8

Getting Started with PolicyServer MMC

Before configuring PolicyServer MMC to manage PolicyServer, make sure to install and configure PolicyServer services and databases.

Note

For information about installing and configuring PolicyServer MMC, see the *Endpoint Encryption Installation and Migration Guide* available at:

http://docs.trendmicro.com/en-us/enterprise/endpoint-encryption.aspx

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Topics include:

- *About PolicyServer MMC on page 8-2*
- *Logging on to PolicyServer MMC on page 8-2*
- *PolicyServer MMC Interface on page 8-4*
- *Working with Groups and Users on page 8-5*
- *Understanding Policy Controls on page 8-15*
- *Disabling Agents on page 8-19*

About PolicyServer MMC

The PolicyServer Microsoft Management Console plug-in (PolicyServer MMC) is the native management console for Endpoint Encryption policy, user, and device administration.

Flexibly manage Endpoint Encryption using only PolicyServer MMC or manage Endpoint Encryption using Control Manager for policy, user and device management and PolicyServer MMC for advanced log management and reporting.

Use PolicyServer MMC to centrally manage:

- All Endpoint Encryption users, devices, and groups
- All policies including encryption, password complexity and authentication
- Remote device actions, including killing a device, erasing data, or delaying authentication
- Event logs about authentication events, management events, device encryption status, and security violations
- Remote Help password reset process
- Auditing and reporting options

Logging on to PolicyServer MMC

Configure the Enterprise name and the Enterprise Administrator account during PolicyServer installation. For information about the free 30-day Trial License, see *Trial License on page 17-3*.

Procedure

1. To open PolicyServer MMC, do one of the following:
   - Double-click the **PolicyServer MMC** shortcut on the desktop
   - Go to the folder specified during installation, then double-click `PolicyServer MMC.exe`

The PolicyServer MMC authentication screen appears.

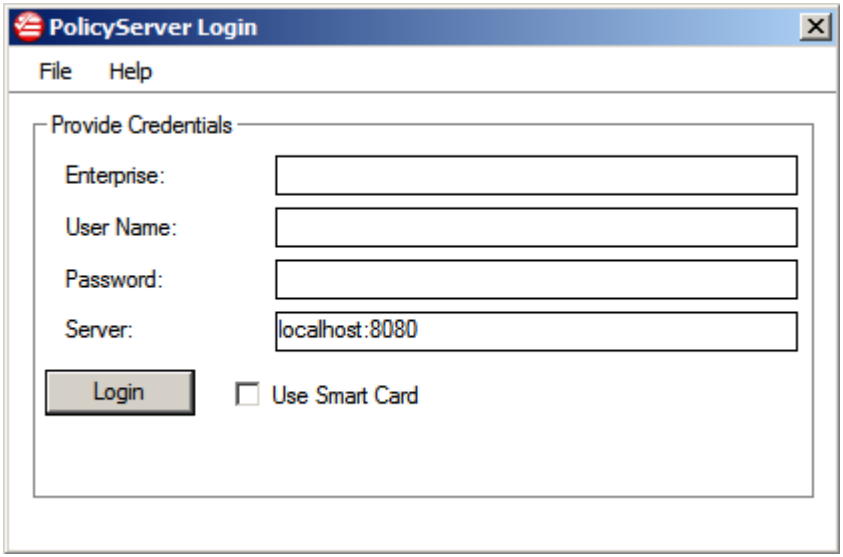


FIGURE 8-1. The PolicyServer MMC Authentication Screen

2. Specify the following parameters:

OPTION	DESCRIPTION
Enterprise	Specify the Enterprise.
User name	Specify the user name of an Enterprise Administrator account.
Password	Specify the password for the user name.
Server	Specify the PolicyServer IP address or host name, and include the port number assigned to that configuration.

3. Optional: To use a smart card to authenticate, select **Use Smart Card**.
4. Click **Login**.
5. Wait for PolicyServer MMC to connect to PolicyServer.

The PolicyServer MMC opens.

PolicyServer MMC Interface

The PolicyServer MMC interface contains the following panes:

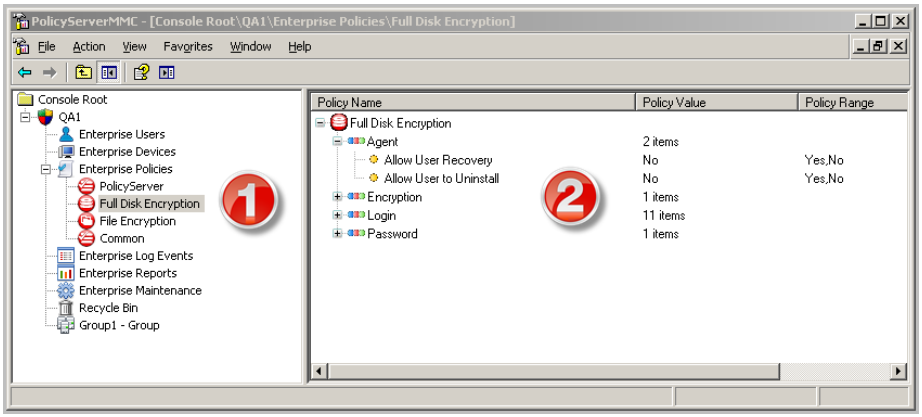


FIGURE 8-2. PolicyServer MMC Interface

TABLE 8-1. PolicyServer MMC Interface Description

PANE	DESCRIPTION
Left (1)	Use the left pane to view users, groups, policies, devices, and agents. Expand a node to manage nested items within the tree structure. Opening an item updates the content in the right pane.
Right (2)	Use the right pane to modify policies, update user and group information, view reports, and maintain other functions. The exact format of the information shown in the right pane depend from the left pane.

Within the left pane tree structure, there are a number of different nodes. The following table describes each node:

TABLE 8-2. PolicyServer MMC Tree Description

NODE	DESCRIPTION
Enterprise Users	View all administrator and user accounts within the Enterprise. To see group affiliation, open the group and then click **Users**.
Enterprise Devices	View all instances of Endpoint Encryption agents and which Endpoint Encryption device they are connecting from. To see group affiliation, open the group and then click **Devices**.
Enterprise Policies	Control whether agents can connect to PolicyServer. Also, manage all enterprise policies. Group policies override enterprise policies.
Enterprise Log Events	View all log entries for the enterprise.
Enterprise Reports	Manage various reports and alerts. No group-only reports are available.
Enterprise Maintenance	Manage the PolicyServer MMC application plug-ins.
Recycle Bin	View deleted Endpoint Encryption users and devices.
Groups	Manage Endpoint Encryption users, devices, policies and log events for a collection of users.

Working with Groups and Users

This section explains how to get started with the PolicyServer MMC groups and users. First define the users and groups, and then assign users to groups. It is also possible to add new users directly to a group. At least one Top Group is required.

User and group recommendations:

- Follow the Active Directory structure.
- Create a new group whenever there is a policy difference between groups of users. If one group requires domain authentication and another requires fixed password, then two separate groups are required.

- Create multiple groups to minimize access. All members of a group are allowed access to any Endpoint Encryption device in that group.

Defining Users and Groups

Define all roles and group affiliations before adding any users or groups.

1. Identify Enterprise Administrator/Authenticator accounts.
2. Create Enterprise Administrator/Authenticator accounts.
3. Identify groups.
4. Create groups.
5. Identify Group Administrator/Authenticator accounts.
6. Create Group Administrator/Authenticator accounts.
7. Identify users to be assigned to each group.
8. Import or create new users each group.

Adding a Top Group

Groups simplify managing Endpoint Encryption agents, users, policies, subgroups, and devices. A Top Group is the highest level group.

Note

It is not possible to add the Enterprise Administrator or Enterprise Authenticator accounts to groups. To create a Group Administrator, add a user and change the account permissions within the group.

For more information, see *Modifying a User on page 11-9*.

Procedure

1. Right-click the Enterprise in the left pane, then click **Add Top Group**.

The **Add New Group** screen appears.

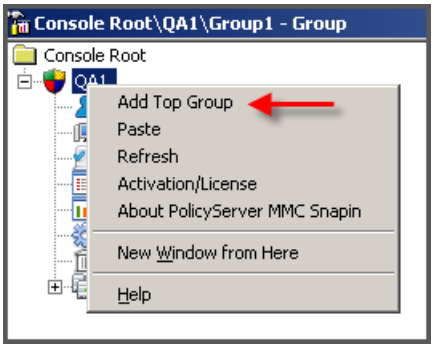


FIGURE 8-3. Add Top Group Screen

2. Specify the name and description for the group.
3. If using Endpoint Encryption devices that do not support Unicode, select **Support Legacy Devices**.

Note

Some legacy devices may not be able to communicate with PolicyServer using Unicode. Assign Unicode and legacy Endpoint Encryption devices to different groups.

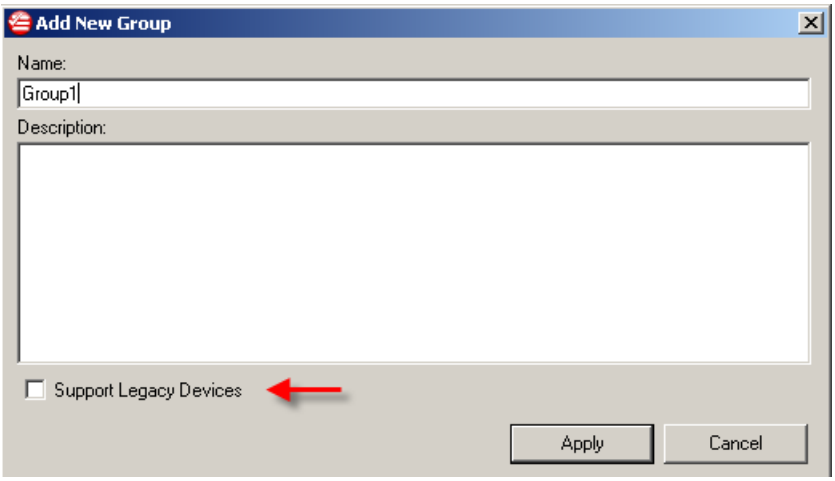


FIGURE 8-4. Add New Group Screen

4. Click **Apply**.
5. At the confirmation message, click **OK**.

   The new group is added to the tree structure in the left pane.

Adding a New User to a Group

Note

Adding a user to the Enterprise does not assign the user to any groups

Adding a user to a group adds the user to the group and to the Enterprise

Procedure

1. Expand the group and open **Users**.
2. Go to the right pane and right-click the whitespace, then select **Add New User**.

The **Add New User** screen appears.

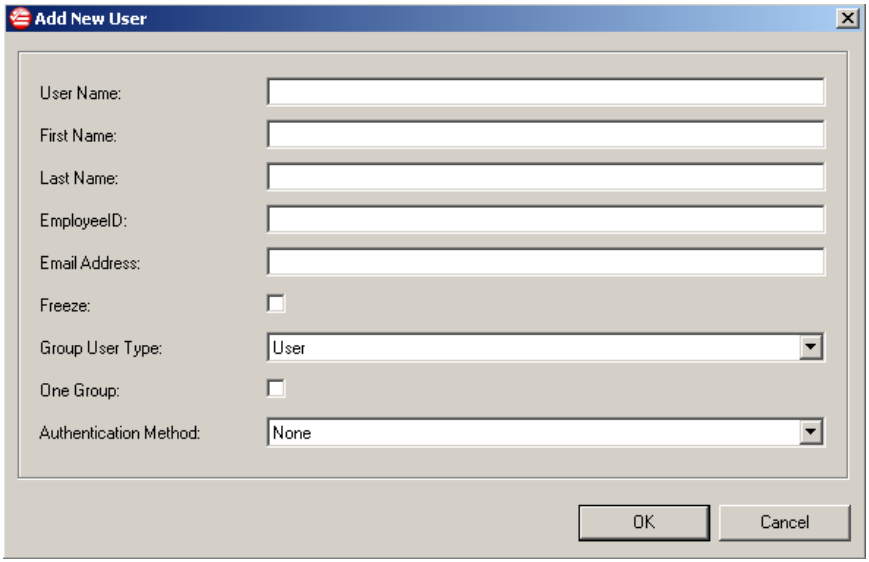


FIGURE 8-5. Add New User Screen

3. Specify the following options:

OPTION	DESCRIPTION
User name	Specify the user name for the new user account (required).
First name	Specify the first name for the new user account (required).
Last name	Specify the last name for the new user account (required).
EmployeeID	Specify the employee ID for the new user account (optional).
Freeze	Select whether to temporarily disable the new user account (optional). While frozen, the user is unable to log devices.
Group User Type	Select the privileges of the new account.

Option	Description
	Note For information about account roles, see *Endpoint Encryption User Roles on page 2-5*. Options include: • User • Authenticator • Administrator **Note** It is not possible to add Enterprise Administrator or Enterprise Authenticator accounts to groups.
One Group	Select whether the new user account is allowed to be a member of multiple group policies.
Authentication method	Select the method that the new user account uses to log on to Endpoint Encryption devices. **Note** The default authentication method for users is **None**. For information about account roles, see *Devices and Users Overview on page 2-1*.

4. Click **OK**.

   The new user is added to the selected group and to the Enterprise. The user can now log on to Endpoint Encryption devices.

Adding a New Enterprise User

The following procedure explains how to add new Endpoint Encryption users to the Enterprise.

Note

Adding a new Endpoint Encryption user to the Enterprise does not assign the user to any groups.

Adding a new Endpoint Encryption user to a group adds the user to the group and to the Enterprise.

Procedure

1. To access Enterprise Users, do one of the following:
   - Expand the Enterprise, then open **Enterprise Users**.
   - Expand the Enterprise, expand the group, then open **Users**.
2. Right-click the white space in the right pane and select **Add User**.

   The **Add New User** screen displays.

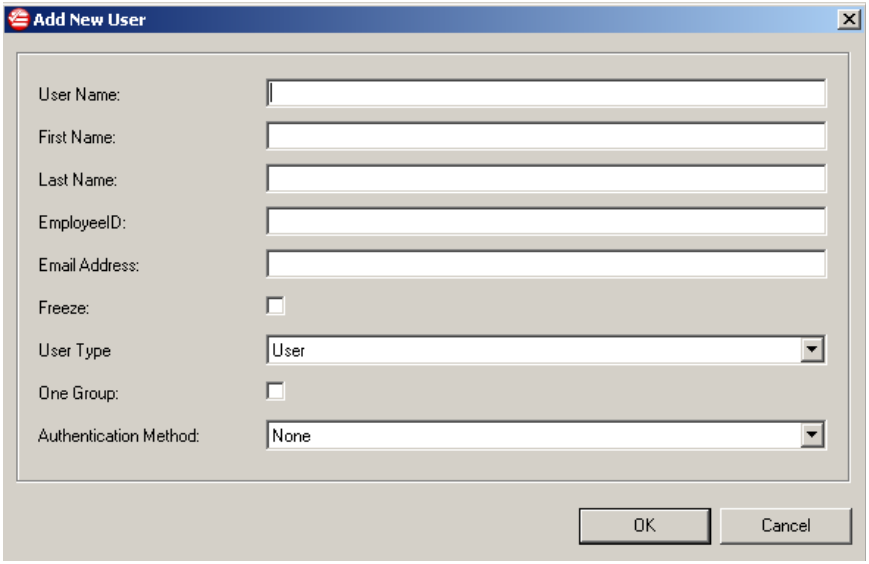


FIGURE 8-6. Add New User screen

3. Specify the following options:

Option	Description
User name	Specify the user name for the new user account (required).
First name	Specify the first name for the new user account (required).
Last name	Specify the last name for the new user account (required).
EmployeeID	Specify the employee ID for the new user account (optional).
Freeze	Select whether to temporarily disable the new user account (optional). While frozen, the user is unable to log on to devices.
Group User Type	Select the privileges of the new account. For information about account roles, see *Devices and Users Overview on page 2-1*. Options include: • **User** • **Authenticator** • **Administrator** **Note** It is not possible to add Enterprise Administrator or Authenticator accounts to groups.
One Group	Select whether the new user account is allowed to be a member of multiple group policies.
Authentication method	Select the method that the new user account uses to log on to Endpoint Encryption devices. For information about authentication methods, see *Devices and Users Overview on page 2-1*. **Note** The default authentication method for users is **None**.

4. Click **OK**.

The new Endpoint Encryption user is added the Enterprise. The user cannot log on to Endpoint Encryption devices until the user account is added to a group.

Adding an Existing User to a Group

A user can be a member of multiple groups.

Procedure

1. Expand the group in the left pane, then click **Users**.
2. Go to the right pane and right-click the whitespace, then select **Add Existing User**.

The **Add Users To Group** screen appears.

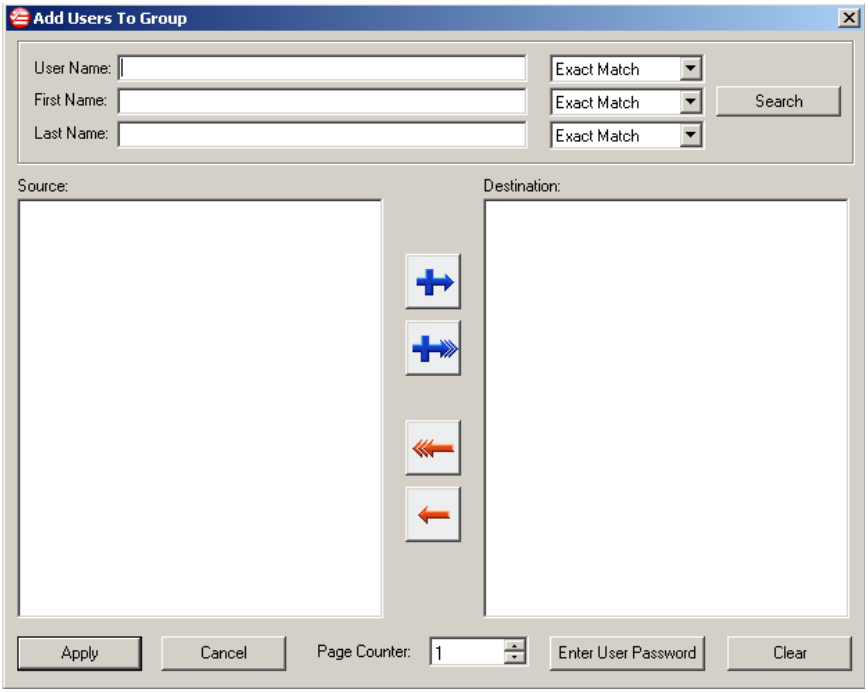


FIGURE 8-7. Add Users To Group Screen

3. Specify user details and then click **Search**.

   The **Source** field populates with any accounts that match the search criteria.

4. Select users from the **Source** list and click the blue arrow to add them.

   For information about search icons, see *Add/Remove Search Result Icons on page 11-15*.

   The selected user moves to the **Destination** list.

5. To change a user password:

   a. In the **Destination** list, highlight the user.

b. Click **Enter User Password** located at the bottom of the window.

c. In the window that appears, specify the user's authentication method.

d. Click **Apply** to close the **Change Password** window.

6. Click **Apply** to save changes.

   The user is added to the group. If this is the only group assignment, then the user is now able to log on to Endpoint Encryption devices.

Understanding Policy Controls

After adding and configuring the users and groups, set policies for the Enterprise or group. Each group (whether a Top Group or a subgroup) contains a "Policies" node with policies specific to each agent and other common policies that affect all agents and authentication.

Note

To disable or enable policies at the Enterprise or group level, see *Accessing Policies on page 9-4*.

For information about the PolicyServer MMC interface, see *PolicyServer MMC Interface on page 8-4*.

Policy Visual Indicators

The small circles to the left of each policy indicate one of the following states:

- Policy level
- Group modification status
- Single or multiple array of values
- Whether the policy contains sub-policies

TABLE 8-3. Policy Indicators

INDICATOR	DESCRIPTION
	A single yellow circle indicates the policy value is inherited from the parent group or the Enterprise.
	A single blue circle indicates a policy has been modified for the group.
	Three blue circles indicate the policy may have multiple arrays of values.
	Three multi-colored (red, blue, green) circles indicate the policy will always have one or more sub-policies.

Policy Fields and Buttons

The following table explains the fields and buttons to control policies in PolicyServer MMC. All modified values are propagated to a group's subgroups. Only the relevant fields and buttons show in a selected policy.

TABLE 8-4. Policy Fields and Buttons

FIELD/BUTTON	DESCRIPTION	CHANGEABLE?
OK	Saves changes to the selected policy	N/A
Description	Explains the selected policy	No
Policy Range	Displays the value range that the selected policy can fall between	Yes
Policy Value	Depending on the policy, displays the actual value of the selected policy, whether it contains a string, number, or series of entries	Yes
Policy Multiple Value	Specifies whether this policy can be used multiple times for different settings (multiple “if found” strings)	No
Policy Name	Displays the name of the selected policy	No
Policy Type	Specifies the category for the selected policy	No

Field/Button	Description	Changeable?
Enterprise controlled	Makes this policy mirror changes to the same policy at the Enterprise level	Yes
Save to subgroups	Pushes policy settings to the same policy in all subgroups	Yes

Modifying Policies

The PolicyServer MMC has a common set of windows to modify policies. Different types of input are available depending on what the policy controls and which parameters are required. This task gives a general overview about editing a policy. The steps required to edit one policy are different to modify another policy.

Note

For more information about modifying policies, including explanations about configuring different policy types, see *Accessing Policies on page 9-4*.

Procedure

1. Expand the **Enterprise**.
2. Select the policy level to modify.
   - For enterprise policies, expand **Enterprise Policies**.
   - For group policies, expand the **Group Name** and then expand **Policies**.
3. Open the specific application or select **Common**.

The policy list displays in the results windows.

Policy Name	Policy Value	Policy Range
PolicyServer		
Admin Console	3 items	
Console Timeout	20	1 - 60
Failed Login Attempts Allowed	0	0 - 100
Legal Notice		
Administrator	10 items	
Authenticator	9 items	
Log Alerts	2 items	
PDA	7 items	
Service Pack Download	2 items	
Welcome Message	4 items	

FIGURE 8-8. Modifying a Policy

4. Go to a policy and double-click to open the editor window.

For example, the “Console Timeout” policy:

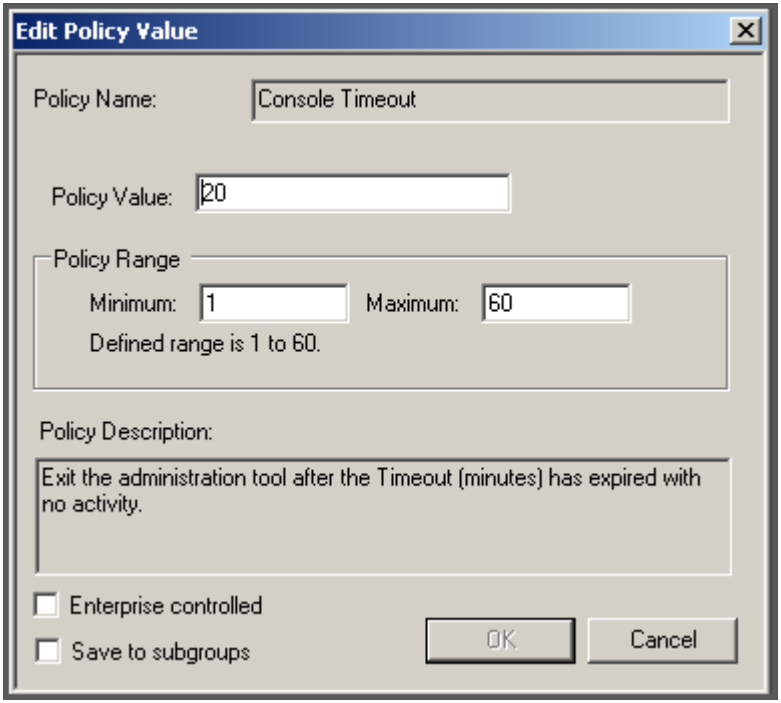


FIGURE 8-9. “Console Timeout” Policy Editor Window

5. Specify changes appropriate for the policy, then click **OK**.

Disabling Agents

All Endpoint Encryption agents are enabled by default.

Procedure

1. Log on to PolicyServer MMC.

See *Logging on to PolicyServer MMC on page 8-2*.

2. Do one of the following:

   - To disable the agent across the Enterprise, click **Enterprise Policies**.
   - To disable the agent for users in the group only, expand the group and then click **Policies**.

   All applications appear in the right pane.

3. Right-click the application and then select **Disable**.

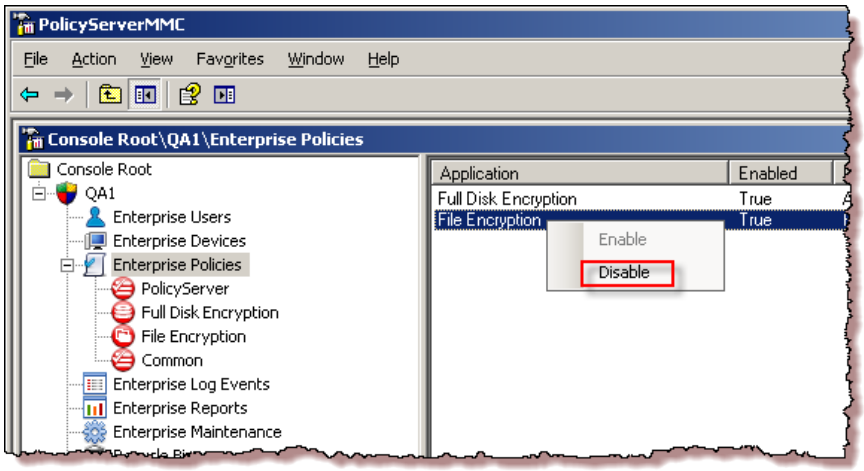


FIGURE 8-10. Enable/Disable Agents

The Endpoint Encryption agent is disabled. Endpoint Encryption users cannot log on devices using this agent.

Chapter 9

Policies in PolicyServer MMC

This chapter explains how to manage and configure Endpoint Encryption policies with PolicyServer MMC.

Note

For information about the policy mapping between PolicyServer MMC and Control Manager, see *Policy Mapping Between Management Consoles on page D-1*.

Topics include:

- *Policy Overview on page 9-2*
- *Policy Mapping Between Management Consoles on page D-1*
- *Automatic Policy Synchronization on page 9-14*
- *PolicyServer Policies on page 9-14*
- *Configuring Full Disk Encryption Rules on page 3-17*
- *Configuring File Encryption Rules on page 3-19*
- *Common Policies on page 9-30*

Policy Overview

This section explains how to use various windows to change a policy, but does not explain the process to modify every policy. PolicyServer MMC has a common set of windows to use when modifying a policy. One policy may have an editor window available to edit the numbers, ranges and values associated with the policy while another policy may have a window to modify text strings.

When managing policies, note the following:

- Policies are configurable by the agent within each group.
- Policy inheritance only occurs when a subgroup exists. For information about group permissions, see *About Groups on page 10-2*.
- Every policy has a default value.

Policy Visual Indicators

The small circles to the left of each policy indicate one of the following states:

- Policy level
- Group modification status
- Single or multiple array of values
- Whether the policy contains sub-policies

TABLE 9-1. Policy Indicators

INDICATOR	DESCRIPTION
	A single yellow circle indicates the policy value is inherited from the parent group or the Enterprise.
	A single blue circle indicates a policy has been modified for the group.
	Three blue circles indicate the policy may have multiple arrays of values.

Indicator	Description
	Three multi-colored (red, blue, green) circles indicate the policy will always have one or more sub-policies.

Policy Fields and Buttons

The following table explains the fields and buttons to control policies in PolicyServer MMC. All modified values are propagated to a group's subgroups. Only the relevant fields and buttons show in a selected policy.

Table 9-2. Policy Fields and Buttons

Field/Button	Description	Changeable?
OK	Saves changes to the selected policy	N/A
Description	Explains the selected policy	No
Policy Range	Displays the value range that the selected policy can fall between	Yes
Policy Value	Depending on the policy, displays the actual value of the selected policy, whether it contains a string, number, or series of entries	Yes
Policy Multiple Value	Specifies whether this policy can be used multiple times for different settings (multiple “if found” strings)	No
Policy Name	Displays the name of the selected policy	No
Policy Type	Specifies the category for the selected policy	No
Enterprise controlled	Makes this policy mirror changes to the same policy at the Enterprise level	Yes
Save to subgroups	Pushes policy settings to the same policy in all subgroups	Yes

Accessing Policies

Every group in PolicyServer MMC contains one or more policy folders. The right pane shows the results window, which provides controls to:

- Display a list of policies and their values
- Modify a policy using the editor window
- Run reports and other log events
- Run enterprise maintenance

Note

For information about the PolicyServer MMC interface, see *PolicyServer MMC Interface on page 8-4*.

Selecting a Policy for Modification

Procedure

1. Go to **Group Name** > **Policies** and select the appropriate node.

   Example: **Group1** > **Policies** > **Full Disk Encryption**.

2. Go to the specific policy.

   Example: **Common** > **Client** > **Allow User to Uninstall**.

3. Right-click the policy and select **Properties**.

Editing Policies with Ranges

Some policies have controls to set a range of policy values, such as the minimum and maximum length for a password.

An example of editing policies with ranges is the **Failed Login Attempts Allowed** policy. **Failed Login Attempts Allowed** controls whether a device locks when a user exceeds the number of failed authentication attempts allowed.

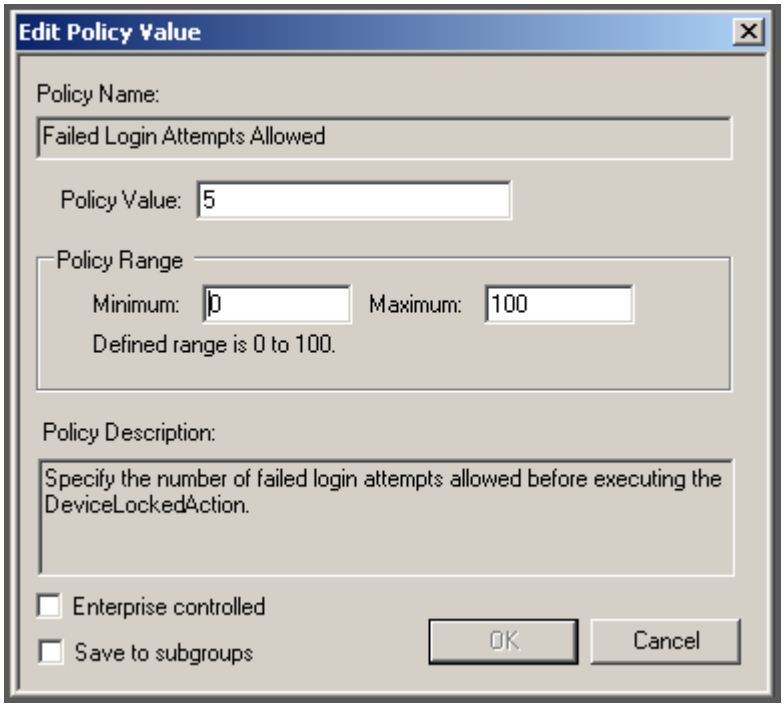


FIGURE 9-1. Policy with Ranges Window

Using the parameters defined in the **Policy Range** fields, indicate the number of failed authentication attempts allowed per user in the **Policy Value** field.

Procedure

1. Right-click the policy to be modified and then click **Properties**.
2. In the **Minimum** field, specify the lowest number of unsuccessful authentication attempts allowed by a user in this group before locking the device.

Note

The minimum and maximum values for the policy range can be the same as the parent's range, or they can be modified with unique values. It is not possible to extend the minimum and maximum values.

3. In the **Maximum** field, specify the highest number of authentication attempts that can be made by a user in this group before authentication fails and the device is locked.
4. In the **Policy Value** field, specify the number of failed authentication attempts allowed for a user in this group before the device is locked.
5. Click **OK** to save changes.

   The policy change is activated once the Endpoint Encryption agent synchronizes with PolicyServer.

Editing Policies with True/False or Yes/ No Responses

Some policies only have True/False or Yes/No options. For this example, **Preboot Bypass** is used.

A Group Administrator can define whether the Full Disk Encryption preboot appears before Windows starts. If the parent group allows **Yes** and **No**, then the subgroup Group Authenticators have the right to set the range to **Yes** and **No**, just **Yes**, or just

No. If the parent group has set the range to either **Yes** or **No**, then the subgroup Group Administrator can only select that same range.

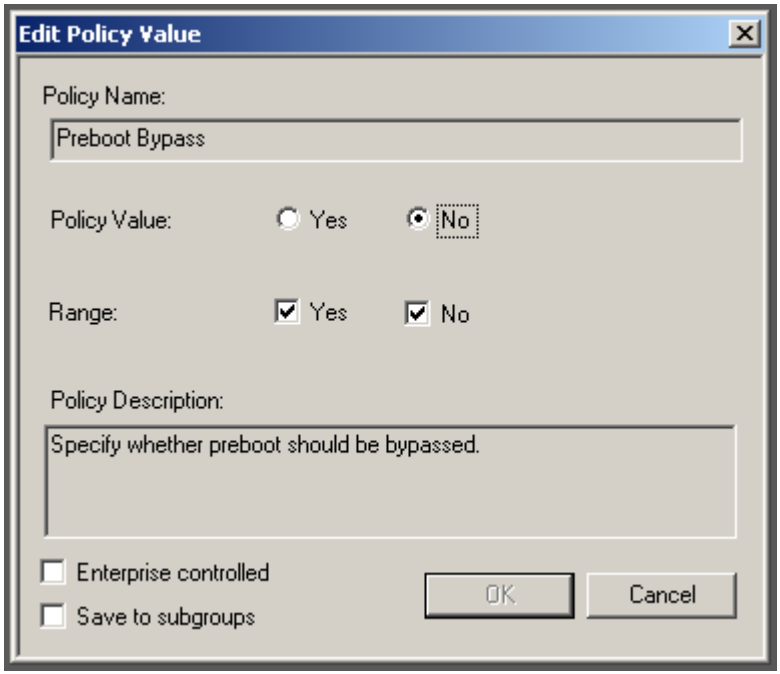


FIGURE 9-2. Policy with Yes/No Values

Procedure

1. Right-click the policy to be modified and then click **Properties**.
2. Specify policy options.
   - The **Policy Value** field sets whether the policy is turned on.
   - The **Range** field sets whether the policy is available to other users or groups.

     Example: if the policy is set to **No**, then the policy will not be available to set to **Yes**.

Note

Removing an option from **Policy Range** removes the value from the **Policy Value** drop-down in the current group and all subgroups.

3. Click **OK** to save changes.

   The policy change is activated once the Endpoint Encryption agent synchronizes with PolicyServer.

Editing Policies with Multiple-choice / Single-selection

Some policies have multiple options available for selection. The **Device Locked Action** policy is edited in a multiple-choice/single-selection window. You can only select one

Policy Value. In this example, the Group Administrator must define the action to take when a user exceeds the allowed number of authentication attempts.

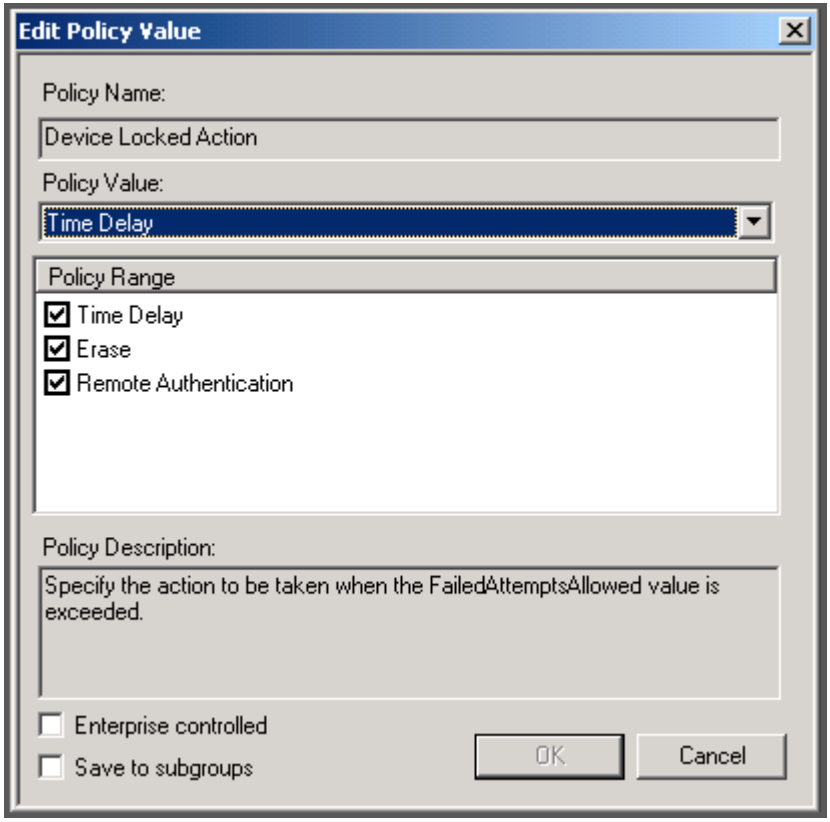


FIGURE 9-3. Policy with Multiple Choice/Single Selection

Procedure

1. Right-click the policy to be modified and then click **Properties**.
2. Select a default setting from the **Policy Value** drop-down list.
3. Select the available options for the **Policy Range** area.

Note

Removing an option from **Policy Range** removes the value from the **Policy Value** drop-down in the current group and all subgroups.

4. Click **OK** to save changes.

   The policy change is activated once the Endpoint Encryption agent synchronizes with PolicyServer.

Editing Policies with Text String Arguments

Some policies have an editable text string for single array arguments. The **Dead Man Switch** policy is an example of a policy that provides the capability to specify a string of text.

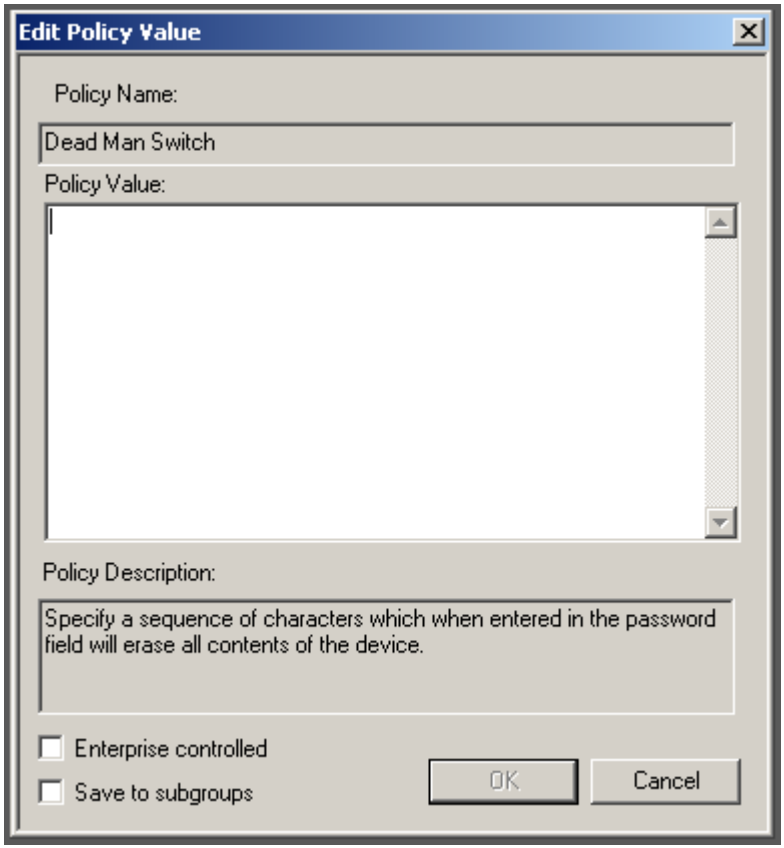


FIGURE 9-4. Policy with Text String Argument

Procedure

1. Right-click the policy to be modified and then click **Properties**.

2. Specify the sequence of characters for this policy in the **Policy Value** field, .
3. Click **OK** to save changes.

   The policy change is activated once the Endpoint Encryption agent synchronizes with PolicyServer.

Editing Policies with Multiple Options

Some policies have multiple options stored in subpolicies affecting that policy. Multiple option policies create separate lines in a text string, and each new line in the string is a subpolicy. For example, the **IF Found** policy displays how to return a found device. A normal address format displays the name, street address, and city/state/zip on three separate lines.

Note

Depending on the policy, multiple options is generally limited to six subpolicies.

Procedure

1. Right-click the policy to modify and then click **Add**.

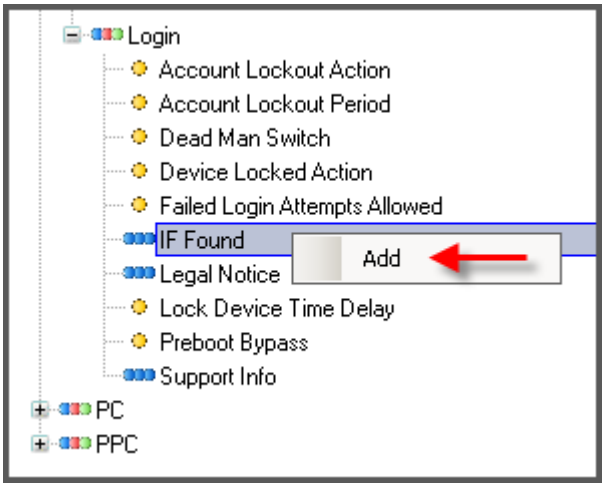


FIGURE 9-5. If Found Policy: Adding a New Option

2. Specify details in the **Policy Value** field.

Note

Depending on the policy, you may need to modify the added policy by right-clicking and selecting **Properties**.

---

3. Click **OK** to save changes.

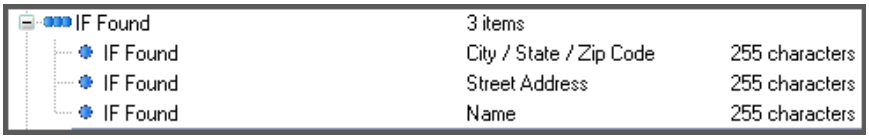


FIGURE 9-6. If Found Policy: Results After Adding Multiple Options

4. If needed, add a new option.

5. To make changes, right-click the child policy, then select **Properties**.

   The policy change is activated once the Endpoint Encryption agent synchronizes with PolicyServer.

Automatic Policy Synchronization

The following list explains the events that initiate policy synchronization between all Endpoint Encryption agents and PolicyServer.

- After the operating system loads and the Endpoint Encryption agent service starts

  Note

  For information about Endpoint Encryption services, see *Endpoint Encryption Services on page C-1*.

- When the Full Disk Encryption preboot starts (Full Disk Encryption only)
- The time duration of the **Sync Interval** policy elapses

Open the **About** screen in the Endpoint Encryption agent to manually synchronize policies.

Note

Endpoint Encryption device actions initiate after the Endpoint Encryption agent receives policy updates.

PolicyServer Policies

This section explains the configurable options for policies affecting PolicyServer.

Admin Console Policies

The following table explains the policies governing PolicyServer MMC.

TABLE 9-3. PolicyServer Admin Console Policy Descriptions

POLICY NAME	DESCRIPTION	VALUE RANGE AND DEFAULT
Console Timeout	Exit the administration tool after the Timeout (minutes) has expired with no activity.	1-60 Default: 20
Failed Login Attempts Allowed	Lockout the administrator logon after this number of consecutive failed log on attempts.	0-100 Default: 0
Legal Notice	Contains the legal notice that must be displayed before the Administrator or Authenticator can use the administration tools.	1-1024 chars Default: N/A

Administrator Policies

The following table explains policies governing PolicyServer Group Administrator privileges.

TABLE 9-4. PolicyServer Administrator Policy Descriptions

POLICY NAME	DESCRIPTION	VALUE RANGE AND DEFAULT
Add Devices	Specify whether the Group Administrator is allowed to add devices.	Yes, No Default: Yes
Add Users	Specify whether the Group Administrator is allowed to add new users.	Yes, No Default: Yes
Add Users to Enterprise	Specify whether the Group Administrator is allowed to add new users to the enterprise.	Yes, No Default: No
Add/Modify Groups	Specify whether the Group Administrator is allowed to add/modify subgroups.	Yes, No Default: Yes

Policy Name	Description	Value Range and Default
Change Policies	Specify whether the Group Administrator is allowed to change policies.	Yes, No Default: Yes
Copy/Paste Groups	Specify whether the Group Administrator is allowed to copy and paste subgroups.	Yes, No Default: Yes
Remove Devices	Specify whether the Group Administrator is allowed to remove devices.	Yes, No Default: Yes
Remove Groups	Specify whether the Group Administrator is allowed to remove subgroups.	Yes, No Default: Yes
Remove Users	Specify whether the Group Administrator is allowed to remove users.	Yes, No Default: Yes
Remove Users from Enterprise	Specify whether the Group Administrator is allowed to remove users from the enterprise.	Yes, No Default: No

Authenticator Policies

The following table explains policies governing Enterprise and Group Authenticator rights and privileges.

Table 9-5. PolicyServer Administrator Policy Descriptions

Policy Name	Description	Value Range and Default
Add Devices	Specify whether Enterprise and Group Authenticators are allowed to add devices.	Yes, No Default: No
Add Users	Specify whether Enterprise and Group Authenticators are allowed to add new users.	Yes, No Default: No

Policy Name	Description	Value Range and Default
Add Users to Enterprise	Specify whether Enterprise and Group Authenticators are allowed to add new users to the enterprise.	Yes, No Default: No
Add/Modify Groups	Specify whether Enterprise and Group Authenticators are allowed to add/modify subgroups.	Yes, No Default: No
Copy/Paste Groups	Specify whether Enterprise and Group Authenticators are allowed to copy and paste subgroups.	Yes, No Default: No
Remove Devices	Specify whether Enterprise and Group Authenticators are allowed to remove devices.	Yes, No Default: No
Remove Groups	Specify whether Enterprise and Group Authenticators are allowed to remove subgroups.	Yes, No Default: No
Remove Users	Specify whether Enterprise and Group Authenticators are allowed to remove users.	Yes, No Default: No
Remove Users from Enterprise	Specify whether Authenticators are allowed to remove users from the enterprise.	Yes, No Default: No

Log Alert Policies

The following table explains policies governing email messages sent for important PolicyServer log events.

TABLE 9-6. PolicyServer Log Alerts Policy Description

POLICY NAME	DESCRIPTION	VALUE RANGE AND DEFAULT
From Email Address	Specify the email address that is used as the source email address for the alerts email message.	1-255 characters Default: N/A
SMTP Server Name	Specify the SMTP server responsible for sending alert email messages.	1-255 characters Default: N/A

Service Pack Download Policies

The following table explains policies governing when agents automatically download service packs.

TABLE 9-7. PolicyServer Service Pack Download Policy Descriptions

POLICY NAME	DESCRIPTION	VALUE RANGE AND DEFAULT
Service Pack Download Begin Hour	Set the time to download service packs.	0-23 Default: 0
Service Pack Download End Hour	Set the time to stop downloading any service pack.	0-23 Default: 0

Welcome Message Policies

The following table explains policies governing whether to send a welcome message to users when they have been added to a group.

TABLE 9-8. PolicyServer Welcome Message Policy Descriptions

POLICY NAME	DESCRIPTION	VALUE RANGE AND DEFAULT
Message	Contains the welcome message file.	1-1024 characters Default: N/A
SMTP Server Name	Specify the SMTP server responsible for sending welcome email messages.	1-255 characters Default: N/A
Source Email	Specify the email address that is used as the source email address for welcome email message.	1-255 characters Default: N/A
Subject	The Welcome message subject line.	1-255 characters Default: N/A

Full Disk Encryption Policies

This section explains the configurable options for policies affecting the following Full Disk Encryption agents:

- Full Disk Encryption
- Encryption Management for Microsoft BitLocker
- Encryption Management for Apple FileVault

Client Policies

The following table explains the policies affecting access to the Full Disk Encryption Recover Console and uninstalling the agent.

Note

Encryption Management for Apple FileVault and Encryption Management for Microsoft BitLocker do not require authentication and are not affected by authentication policies. Client, login, password, and authentication policies, or allowing the user to uninstall the Endpoint Encryption agent software only affects the Full Disk Encryption and File Encryption agents.

TABLE 9-9. Full Disk Encryption Client Policy Descriptions

POLICY NAME	DESCRIPTION	VALUE RANGE AND DEFAULT
Allow User Recovery	Specify if users are allowed to access system recovery utilities on the device.	Yes, No Default: No
Allow User to Uninstall	Specify whether user can uninstall Full Disk Encryption.	Yes, No Default: No

Encryption Policies

The following table explains the Full Disk Encryption encryption policy. The encrypt device policy affects the Full Disk Encryption, Encryption Management for Apple FileVault, and Encryption Management for Microsoft BitLocker agents.

TABLE 9-10. Full Disk Encryption Encryption Policy Descriptions

POLICY NAME	DESCRIPTION	VALUE RANGE AND DEFAULT
Encrypt Device	Specify whether to encrypt the device.	Yes, No Default: Yes

Login Policies

The following table explains the policies that govern logging on to the Full Disk Encryption agent.

Note

Encryption Management for Apple FileVault and Encryption Management for Microsoft BitLocker do not require authentication and are not affected by authentication policies. Client, login, password, and authentication policies, or allowing the user to uninstall the Endpoint Encryption agent software only affects the Full Disk Encryption and File Encryption agents.

TABLE 9-11. Full Disk Encryption Login Policy Descriptions

POLICY NAME	DESCRIPTION	VALUE RANGE AND DEFAULT
Account Lockout Action	Specify the action to be taken when the device has failed to communicate with the PolicyServer as specified in the policy Account Lockout Period. • Erase: All content on the device is wiped. • Remote Authentication: Require user to perform remote authentication.	Erase, Remote Authentication Default: Remote Authentication
Account Lockout Period	Specify the number of days that the client may be out of communication with the PolicyServer.	0-999 Default: 360
Dead Man Switch	Specify a sequence of characters, when entered will erase all contents on the device.	1-255 characters Default: N/A

Policy Name	Description	Value Range and Default
Device Locked Action	Specify the action to be taken when the device locks. • Time Delay: The amount of time that must elapse before the user can retry logging on. • Erase: All content on the device is wiped. • Remote Authentication: Require user to perform remote authentication.	Time Delay, Erase, Remote Authentication Default: Time Delay
Failed Login Attempts Allowed	Specify the number of failed Login attempts before using Lock Device Time Delay.	0-100 Default: 5
If Found	Specify information to be displayed.	1-255 characters Default: N/A
Legal Notice	Specify whether a legal notice should be displayed.	Enable/Disable Default: Disabled
Legal Notice Display Time	Specify when the configured legal notice should be displayed to the user.	Installation, Startup Default: Startup
Legal Notice Text	Specify the body of the legal notice.	Insert File Default: N/A
Lock Device Time Display	Lock device for X minutes if user exceeds Failed Attempts Allowed.	1-999,999 minutes Default: 1
Preboot Bypass	Specify if the preboot should be bypassed.	Yes, No Default: No
Support Info	Display Help Desk information or Administrator contact.	Default: N/A

Policy Name	Description	Value Range and Default
Token Authentication	Policy related to physical tokens including smart cards and USB tokens. All sub-policies are visible only when Token Authentication is enabled.	Enable, Disable Default: Disable
OCSP Validation	Verifying certificates via OCSP allows for the revocation of invalid certificates via the CA. **Note** All sub-policies are visible only when OCSP Validation is Enabled.	Enable, Disable Default: Disable
OCSP CA Certificates	Certificate Authority certificates. **Note** This is a sub-policy of OCSP Validation.	0-1024 characters Default: N/A
OCSP Expired Certificate Status Action	Defines the action to take if the OCSP certificate status is expired. **Note** This is a sub-policy of OCSP Validation.	Time Delay, Erase, Remote Authentication, Denial of Login, Allow Access Default: Denial of Login
OCSP Grace	A grace period in days that allows authentication to occur even if the OCSP server has not verified the certificate in this number of days. **Note** This is a sub-policy of OCSP Validation.	0-365 Default: 7

Policy Name	Description	Value Range and Default
OCSP Responders	Certificate Authority certificates. **Note** This is a sub-policy of OCSP Validation.	Yes, No Default: Yes
OCSP Responder Certificate	Certificate Authority Certificate **Note** This is a sub-policy of OCSP Responders.	0-1024 characters Default: N/A
OCSP Responder URL	Certificate Authority certificates. **Note** This is a sub-policy of OCSP Responders.	0-1024 characters Default: N/A
OCSP Revoked Certificate Status Action	Defines the action to take if the OCSP certificate status is revoked. **Note** This is a sub-policy of OCSP Responders.	Time Delay, Erase, Remote Authentication, Denial of Login, Allow Access Default: Denial of Login
OCSP Show Success	Whether success of OCSP reply should be displayed. **Note** This is a sub-policy of OCSP Responders.	Yes, No Default: Yes

Policy Name	Description	Value Range and Default
OCSP Unknown Certificate Status Action	Specify the action when an OCSP certificate status is unknown. This is sub-policy of OCSP Responders.	Time Delay, Erase, Remote Authentication, Denial of Login, Allow Access Default: Denial of Login
Token Passthru	Pass the token to the desktop GINA for further processing during the boot process. This is sub-policy of OCSP Responders.	Yes, No Default: No

Password Policies

The following table explains Full Disk Encryption password policies.

Note

Encryption Management for Apple FileVault and Encryption Management for Microsoft BitLocker do not require authentication and are not affected by authentication policies. Client, login, password, and authentication policies, or allowing the user to uninstall the Endpoint Encryption agent software only affects the Full Disk Encryption and File Encryption agents.

Table 9-12. Full Disk Encryption Password Policy Descriptions

Policy Name	Description	Value Range and Default
Authentication Methods Allowed	Specify the allowed type(s) of authentication methods that can be used.	Fixed, ColorCode, Pin, Remote, RSA Default: Fixed

File Encryption Policies

This section explains the configurable options for policies affecting File Encryption agents.

Computer Policies

The following table explains the policies governing installation privileges on devices with File Encryption installed.

TABLE 9-13. File Encryption Computer Policy Descriptions

POLICY NAME	DESCRIPTION	VALUE RANGE AND DEFAULT
Allow User to Uninstall	This policy specifies whether a user other than an Administrator can uninstall the endpoint application.	Yes, No Default: Yes

Encryption Policies

The following table explains the policies governing how encryption is handled on File Encryption devices.

TABLE 9-14. File Encryption Encryption Policy Descriptions

POLICY NAME	DESCRIPTION	VALUE RANGE AND DEFAULT
Allow Secure Delete	Specify whether to allow the user to delete files.	Yes, No Default: Yes
Disable Optical Drive	Disable access to CD or DVD drives.	Yes, No Default: No

Policy Name	Description	Value Range and Default
Encryption Key Used	• User Key: choose a key unique to the user. • Group Key: choose a key unique to the group, so all users in the group will also have access to files. • Enterprise Key: choose a key unique to the enterprise, so all users in the enterprise will also have access to files.	User Key, Group Key, Enterprise Key Default: Group Key
Encryption Method Allowed	Choose which allowable ways to encrypt files are allowed: • User Key • Group Key • User-created password • Digital Certificates	User's Unique Key, Group Unique Key, Encrypt With Static Password, Encrypt With Certificate Default: All
Fully Encrypt Device	Specify whether all files/folders on removable media are encrypted.	Yes, No Default: No
Allow USB Devices	Specify permitted USB devices.	Any, KeyArmor Default: Any
Disable USB Drive	Disable the USB drive when not logged in, always disable, and never disable drive.	Always, Logged Out, Never Default: Logged Out
Folders to Encrypt on Removable Media	The drive letter is given and the policy value corresponds to a valid removable media device. Non-existent folders are created. If no drive letter is given then all removable media devices attached to the device at login will use the policy values.	1-255 characters Default: N/A

Policy Name	Description	Value Range and Default
Specify Folders to Encrypt	List the folders that will be encrypted on the hard drive. Non-existent folders are created. A valid drive letter to the hard drive must also be supplied. A valid policy value is: C:\EncryptedFolder.	1-255 characters Default: `%DESKTOP%\Encrypted Files`

Login Policies

The following table explains the policies that govern logging on to the File Encryption agent.

Table 9-15. File Encryption Login Policy Descriptions

Policy Name	Description	Value Range and Default
Authentication Methods Allowed	Specify the allowed type(s) of authentication that can be used.	Fixed, ColorCode, Pin, Smart Card, RSA Default: Fixed
Device Locked Action	Action to be taken when the device is locked.	Time Delay, Remote Authentication Default: Time Delay
Failed Login Attempts Allowed	Number of failed logon attempts before using Lock Device Time Delay. 0 allows for unlimited attempts.	0-100 Default: 5

Policy Name	Description	Value Range and Default
Legal Notice Display Time **Note** This is a sub-policy of the Legal Notice.	Specify when the configured legal notice is displayed to the user. **Note** The legal notice does not appear for File Encryption 3.1.3 or older agents.	Installation, Startup Default: Startup
Legal Notice Text **Note** This is a sub-policy of the Legal Notice.	Specify the body of the legal notice. **Note** The legal notice does not appear for File Encryption 3.1.3 or older agents.	Insert File Default: N/A
Lock Device Time Delay	Lock device for X minutes if user exceeds Failed Attempts Allowed.	0-999,999 Default: 1

Password Policies

The following table explains policies governing File Encryption passwords.

Table 9-16. File Encryption Password Policy Descriptions

Policy Name	Description	Value Range and Default
Force Talking to Server	Forces the File Encryption agent to communicate with to the server after X amount of days. 0 makes File Encryption agent standalone.	0-999 Default: 360

Policy Name	Description	Value Range and Default
Physical Token Required	Require a physical token (smart cards) to log on to Endpoint Encryption devices.	Yes, No Default: No

Common Policies

This section explains the configurable options for all enterprise policies affecting all Endpoint Encryption agents.

Agent Policy

The following table explains the sync interval policy.

Table 9-17. Endpoint Encryption Common Agent Policy Descriptions

Policy Name	Description	Value Range and Default
Sync Interval	Specify how often (in minutes) the application communicates to PolicyServer from the device to receive updated information.	1-1440 Default: 30

Authentication Policies

The following table explains policies that govern authenticating local and domain user accounts.

Note

Encryption Management for Apple FileVault and Encryption Management for Microsoft BitLocker do not require authentication and are not affected by authentication policies. Client, login, password, and authentication policies, or allowing the user to uninstall the Endpoint Encryption agent software only affects the Full Disk Encryption and File Encryption agents.

TABLE 9-18. Endpoint Encryption Common Authentication Policy Descriptions

CATEGORY	POLICY NAME	DESCRIPTION	VALUE RANGE AND DEFAULT
N/A	Allow Offline Password Change	Specify if users can change their password when not connected to the PolicyServer.	Yes, No Default: No
Local Login	Admin Password	Specify policies regarding authenticating to the local device only.	N/A
Local Login > **Admin Password**	Allowed Character Types	Specify whether passwords can contain alpha, numeric, special or a combination.	Alpha, Numeric, Special Default: All
Local Login > **Admin Password**	Can Contain User Name	Specify if the user name can be contained in the password.	Yes, No Default: Yes
Local Login > **Admin Password**	Consecutive Characters Allowed	Specify the number of consecutive characters allowed in a password.	0-255 Default: 3
Local Login > **Admin Password**	Minimum Length	Specify the minimum length allowed for passwords.	0-255 Default: 6
Local Login > **Admin Password**	Password History Retention	Specify the number of past passwords the user is not allowed to use.	0-255 Default: 0
Local Login > **Admin Password**	Require How Many Characters	Specify the number of alpha characters that must be used in a password.	0-255 Default: 0
Local Login > **Admin Password**	Require How Many Lower Case Characters	Specify the number of lower case characters that must be used in a password.	0-255 Default: 0

Category	Policy Name	Description	Value Range and Default
Local Login > **Admin Password**	Require How Many Numbers	Specify the number of numeric characters that must be used in a password.	0-255 Default: 0
Local Login > **Admin Password**	Require How Many Special Characters	Specify the number of special characters that must be used in a password.	0-255 Default: 0
Local Login > **Admin Password**	Require How Many Upper Case Characters	Specify the number of upper case characters that must be used in a password.	0-255 Default: 0
Local Login	Self Help	Specify the policies that are used for Self Help.	N/A
Local Login > **Self Help**	Number of Questions	Specify the number of questions required to be answered correctly to authenticate the user.	1-6 Default: 1
Local Login > **Self Help**	Personal Challenge	Specify the personal challenge question(s) used for Self Help.	1-1024 Default: N/A
Local Login	User Password	Specify the policies that are used for User Passwords.	N/A
Local Login > **User Password**	Allowed Character Types	Specify whether passwords can contain alpha, numeric, special or a combination.	Alpha, Numeric, Special Default: All
Local Login > **User Password**	Can Contain User Name	Specify if the user name can be contained in the password.	Yes, No Default: Yes
Local Login > **User Password**	Change Password Every	Specify (in days) when to force a user to change their password.	1-1000000 Default: 60

Category	Policy Name	Description	Value Range and Default
Local Login > **User Password**	Consecutive Characters Allowed	Specify the number of consecutive characters allowed in a password.	0-255 Default: 3
Local Login > **User Password**	Minimum Length	Specify the minimum length allowed for passwords.	0-255 Default: 6
Local Login > **User Password**	Password History Retention	Specify the number of past passwords the user is not allowed to use.	0-255 Default: 0
Local Login > **User Password**	Require How Many Characters	Specify the number of alpha characters that must be used in a password.	0-255 Default: 0
Local Login > **User Password**	Require How Many Lower Case Characters	Specify the number of lower case characters that must be used in a password.	0-255 Default: 0
Local Login > **User Password**	Require How Many Numbers	Specify the number of numeric characters that must be used in a password.	0-255 Default: 0
Local Login > **User Password**	Require How Many Special Characters	Specify the number of special characters that must be used in a password.	0-255 Default: 0
Local Login > **User Password**	Require How Many Upper Case Characters	Specify the number of upper case characters that must be used in a password.	0-255 Default: 0
Local Login > **User Password**	User Name Case Sensitive	Specify if the user name is case sensitive	Yes, No Default: No

Category	Policy Name	Description	Value Range and Default
Network Login	Distinguished Name	Optional: Specify the distinguished name of the authentication server. If no Distinguished Name is specified, this will default to the LDAP server Default Naming Convention.	1-255 Default: N/A
Network Login	Domain Authentication	Specifies if the Windows credentials should be used to authenticate.	Yes, No Default: No
Network Login	Domain Name	NetBIOS name of the domain for Single Sign On. Default is NetBIOS value used by the PolicyServer.	1-255 Default: N/A
Network Login	Host Name	Specify the host name. The host name can be a domain name.	1-255 Default: N/A
Network Login	Port Number	Optional: 0 = use default. Specifies the port to be used for the connection. If no port number is specified, the LDAP provider uses the default port number.	0-65535 Default: 0
Network Login	Server Type	Type of server used to authenticate client user requests.	LDAP, LDAProxy Default: LDAP
Authentication	Remember User Between Login	Remember last used user name and display it in the authentication screen.	Yes, No Default: Yes

Chapter 10

Groups in PolicyServer MMC

Endpoint Encryption utilizes both role-based and identity-based authentication to secure data. Correctly configuring Endpoint Encryption groups ensures that data remains encrypted from unauthorized users, thus preventing data loss risk from accidental information release or deliberate sabotage.

Topics include:

- *About Groups on page 10-2*
- *Group Management on page 10-2*
- *Offline Groups on page 10-13*

About Groups

Groups are managed in PolicyServer MMC. The following table describes the types of groups available.

TABLE 10-1. PolicyServer Group Types

GROUP	DESCRIPTION
Top Group	The highest level of groups under the Enterprise. Each Top Group has a unique node underneath the Enterprise.
Subgroup	Groups created within a Top Group. A subgroup inherits the policies of its parent group. • Policy inheritance only occurs when a subgroup is created • Policy changes to a top level group do not filter down to existing subgroups • Subgroup policies cannot be more permissive than the parent groups

Note

Although subgroups inherit all existing policies of the parent group, you must separately add users and devices to the subgroup.

Adding Endpoint Encryption users to a subgroup does not automatically add the users to the Top Group. However, you can add users to both the Top Group and subgroup.

Group Management

This section explains how to use PolicyServer MMC to add new groups, add or remove Endpoint Encryption users and devices, and modify groups.

Adding a Top Group

Groups simplify managing Endpoint Encryption agents, users, policies, subgroups, and devices. A Top Group is the highest level group.

Note

It is not possible to add the Enterprise Administrator or Enterprise Authenticator accounts to groups. To create a Group Administrator, add a user and change the account permissions within the group.

For more information, see *Modifying a User on page 11-9*.

Procedure

1. Right-click the Enterprise in the left pane, then click **Add Top Group**.

   The **Add New Group** screen appears.

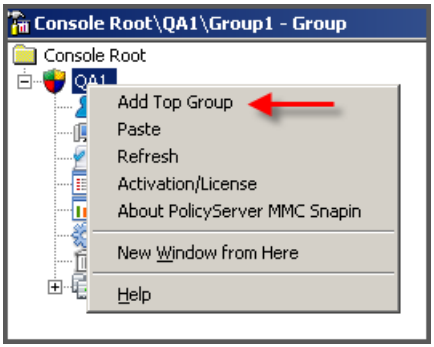


FIGURE 10-1. Add Top Group Screen

2. Specify the name and description for the group.

3. If using Endpoint Encryption devices that do not support Unicode, select **Support Legacy Devices**.

Note

Some legacy devices may not be able to communicate with PolicyServer using Unicode. Assign Unicode and legacy Endpoint Encryption devices to different groups.

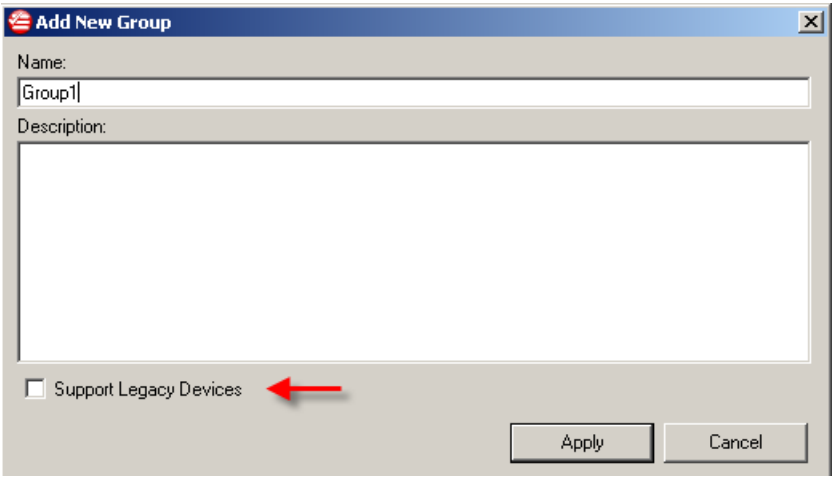


FIGURE 10-2. Add New Group Screen

4. Click **Apply**.
5. At the confirmation message, click **OK**.

   The new group is added to the tree structure in the left pane.

Adding a Subgroup

Although subgroups inherit all existing policies of the parent group, you must separately add users and devices to the subgroup.

Procedure

1. Right-click a group in the left pane tree structure, and then click **Add**.

The **Add New Group** window appears.

2. Follow the steps in *Adding a Top Group on page 8-6*.

   The new group is added to the tree structure inside the Top Group.

Modifying a Group

Procedure

1. Right-click a group in the left pane tree structure, then click **Modify**.

   The **Modify Group** screen appears.

2. Specify changes.

3. Click **Apply**.

Removing a Group

Use the tree structure to remove a group. Removing a Top Group removes all subgroups.

Procedure

1. Right-click a group in the left pane tree structure, then click **Remove**.

   A warning message appears.

2. Click **Yes** to remove the group.

   The selected group no longer appears in the tree structure.

Adding a New User to a Group

Note

Adding a user to the Enterprise does not assign the user to any groups

Adding a user to a group adds the user to the group and to the Enterprise

Procedure

1. Expand the group and open **Users**.
2. Go to the right pane and right-click the whitespace, then select **Add New User**.

   The **Add New User** screen appears.

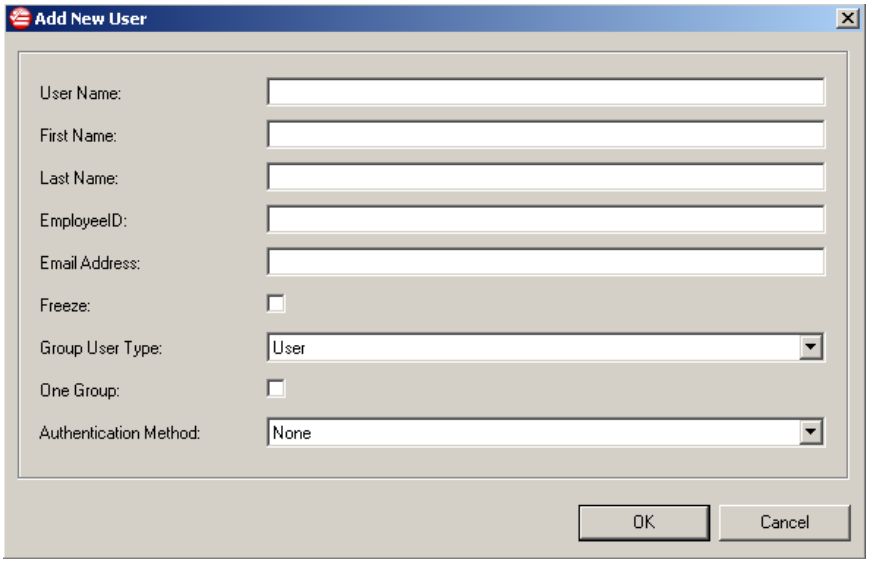


FIGURE 10-3. Add New User Screen

3. Specify the following options:

Option	Description
User name	Specify the user name for the new user account (required).
First name	Specify the first name for the new user account (required).
Last name	Specify the last name for the new user account (required).
EmployeeID	Specify the employee ID for the new user account (optional).
Freeze	Select whether to temporarily disable the new user account (optional). While frozen, the user is unable to log devices.
Group User Type	Select the privileges of the new account. **Note** For information about account roles, see *Endpoint Encryption User Roles on page 2-5*. Options include: • User • Authenticator • Administrator **Note** It is not possible to add Enterprise Administrator or Enterprise Authenticator accounts to groups.
One Group	Select whether the new user account is allowed to be a member of multiple group policies.
Authentication method	Select the method that the new user account uses to log on to Endpoint Encryption devices. **Note** The default authentication method for users is **None**. For information about account roles, see *Devices and Users Overview on page 2-1*.

4. Click **OK**.

   The new user is added to the selected group and to the Enterprise. The user can now log on to Endpoint Encryption devices.

Adding an Existing User to a Group

A user can be a member of multiple groups.

Procedure

1. Expand the group in the left pane, then click **Users**.
2. Go to the right pane and right-click the whitespace, then select **Add Existing User**.

The **Add Users To Group** screen appears.

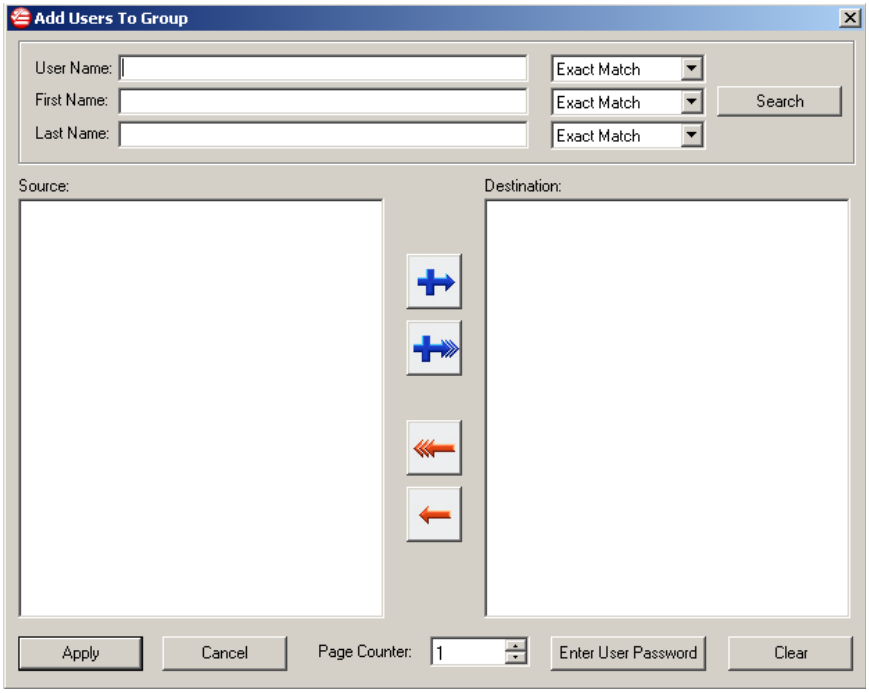


FIGURE 10-4. Add Users To Group Screen

3. Specify user details and then click **Search**.

   The **Source** field populates with any accounts that match the search criteria.

4. Select users from the **Source** list and click the blue arrow to add them.

   For information about search icons, see *Add/Remove Search Result Icons on page 11-15*.

   The selected user moves to the **Destination** list.

5. To change a user password:

   a. In the **Destination** list, highlight the user.

b. Click **Enter User Password** located at the bottom of the window.

c. In the window that appears, specify the user's authentication method.

d. Click **Apply** to close the **Change Password** window.

6. Click **Apply** to save changes.

   The user is added to the group. If this is the only group assignment, then the user is now able to log on to Endpoint Encryption devices.

Removing Users From a Group

WARNING!

Before removing a Group Administrator or Group Authenticator account, reassign this role to another user account. Otherwise, only the Enterprise Administrator or Enterprise Authenticator accounts can make changes to the group.

Removing a user from a group restricts the user from accessing any Endpoint Encryption device assigned to that group. Before removing Endpoint Encryption users, make sure that the users have backed up and unencrypted their data.

Procedure

1. Expand the group, then click **Users**.
2. In the right pane, right-click the user and select **Remove User**.

   A warning message appears.
3. To remove the user from the Enterprise as well, select **Remove from Enterprise**.

   Note

   Removing a user from the Enterprise also removes that user from all groups and subgroups.
4. Click **Yes**.

The user is removed.

Removing All Users From a Group

WARNING!

Before removing a Group Administrator or Group Authenticator account, reassign this role to another user. Otherwise, only Enterprise Administrator and Enterprise Authenticator accounts can make group-level changes.

Procedure

1. Expand the group, then click **Users**.
2. In the right pane, right-click the user and select **Remove All Users**.

   A warning message displays.
3. To remove all users from the Enterprise as well, select **Remove from Enterprise**.

   Note

   Removing a user from the Enterprise also removes that user from all groups and subgroups.
4. Click **Yes.**

Adding a Device to a Group

Note

Each Endpoint Encryption device can belong to only one group.

Procedure

1. In the left pane, expand the desired policy group and click **Devices**.

2. In the right pane, right-click the whitespace and select **Add Device**.

   The **Add Devices to Group** screen appears.

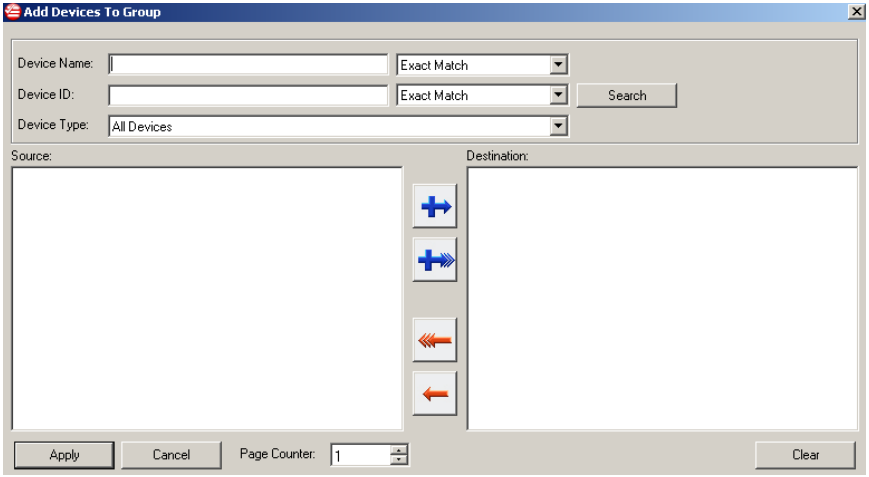


FIGURE 10-5. Add Devices to Group Screen

3. Type the device details, then click **Search**.

   If there is a match, the **Source** field populates with Endpoint Encryption devices.

4. Select applicable Endpoint Encryption devices from the **Source** field, then click the **blue arrow** to add them.

   For information about search icons, see *Add/Remove Search Result Icons on page 11-15*.

5. Click **Apply** to add the Endpoint Encryption device to the selected group.

   The Endpoint Encryption device is added to the group.

Removing a Device from a Group

Removing a device from a group removes the device from the selected group only.

WARNING!

To remove a device from all groups, remove it from the Enterprise. Before deleting a device from the Enterprise, verify that the device has been unencrypted and that all Endpoint Encryption agents were uninstalled. Failure to do so may result in irreversible data loss.

Procedure

1. Expand the group, then open **Devices**.
2. In the right pane, right-click the device and select **Remove Device**.

   A warning message appears.
3. Click **Yes**.

   The device is removed.

Offline Groups

An offline group is a group of endpoints that did not connect to PolicyServer when the File Encryption agent was installed. Export the policies, users, and devices for that group to a file and install them on each endpoint. When the group requires changes, export a new file and repeat the import.

Policies are automatically updated when the agent connects to PolicyServer.

Creating an Offline Group

Offline groups allow agents that do not need to or cannot communicate with PolicyServer to get updated policies. The Endpoint Encryption agent installation files must be available to the server where PolicyServer is installed.

Note

Exported groups must contain at least one user. The group name must also be alphanumeric only.

Procedure

1. From the left pane, right-click the group and then select **Export**.

   The **PolicyServer Export Group Wizard** appears.

FIGURE 10-6. PolicyServer Exporting Group Wizard

2. Select **Create off-line devices**.
3. Specify the export location.
4. Specify and confirm the export password.

> **Note**
> The export password is used to authenticate the executable on the agent.

5. Click **Next**

6. Click **Add** to browse to and upload Endpoint Encryption client installers.

TABLE 10-2. Endpoint Encryption Installation Filename

INSTALLATION FILE	PURPOSE
`FileEncryptionIns.exe`	Installs the File Encryption agent.

> **Note**
> For older Endpoint Encryption product versions, see the supporting documentation.

7. Click **Next**.

8. Depending on the license type, specify the number of devices to be installed on. The number of licenses available is reduced with every device.

9. Optionally specify a **Device Name Prefix**. PolicyServer uses the device prefix number to generate a unique Device ID and device encryption key for each device in this group.

10. Click **Next**.

    The offline group build begins.

11. Click **Done** to generate the export file at the specified location.

    A generated executable file named "Export" is created on the desktop. Use this to distribute policy changes to offline groups.

Updating an Offline Group

The following procedure explains how to create an update for an offline group.

Procedure

1. From the left pane, right-click the group, then select **Export**.

   The **PolicyServer Export Group Wizard** opens.

2. Select **Update off-line devices**.

3. Specify the export password.

   Note

   Use the export password to authenticate the executable on the Endpoint Encryption agent.

4. Click **Browse** to specify a location to store the export file.

5. Click **Next**

   The offline group build begins.

6. Click **Done**.

   The export file is generated at the specified location.

7. Install the software on the device using the generated executable or script.

   Note

   See the *Endpoint Encryption Installation and Migration Guide*.

Chapter 11

Users in PolicyServer MMC

Endpoint Encryption has several types of account roles and authentication methods for comprehensive identity-based authentication and management. Using Control Manager or PolicyServer MMC, you can add or import user accounts, control authentication, synchronize with the Active Directory, and manage policy group membership, as needed.

Note

For a description of Endpoint Encryption user roles and authentication, see *Endpoint Encryption Users on page 2-4*.

This chapter explains account roles and authentication methods, how to administer PolicyServer MMC to manage policies affecting Endpoint Encryption users, and how to control information access by using the **Users** policy node in PolicyServer MMC. This chapter also explains how to restore deleted Endpoint Encryption users.

Topics include:

- *Adding Users to Endpoint Encryption on page 6-4*
- *Finding a User on page 11-8*
- *Modifying a User on page 11-9*
- *Adding a New User to a Group on page 8-8*

- *Adding an Existing User to a Group on page 8-13*
- *Changing a User's Default Group on page 11-15*
- *Allowing User to Install to a Group on page 11-16*
- *Removing Users From a Group on page 10-10*
- *Removing All Users From a Group on page 10-11*
- *Restoring a Deleted User on page 6-25*
- *Working with Passwords on page 6-11*

Adding Users to Endpoint Encryption

Endpoint Encryption has several options to add users to Endpoint Encryption:

- Add users manually, one at a time
- Bulk import numerous users with a CSV file
- Use the External Directory Browser with Active Directory

Adding a New Enterprise User

The following procedure explains how to add new Endpoint Encryption users to the Enterprise.

Note

Adding a new Endpoint Encryption user to the Enterprise does not assign the user to any groups.

Adding a new Endpoint Encryption user to a group adds the user to the group and to the Enterprise.

Procedure

1. To access Enterprise Users, do one of the following:
   - Expand the Enterprise, then open **Enterprise Users**.
   - Expand the Enterprise, expand the group, then open **Users**.
2. Right-click the white space in the right pane and select **Add User**.

The **Add New User** screen displays.

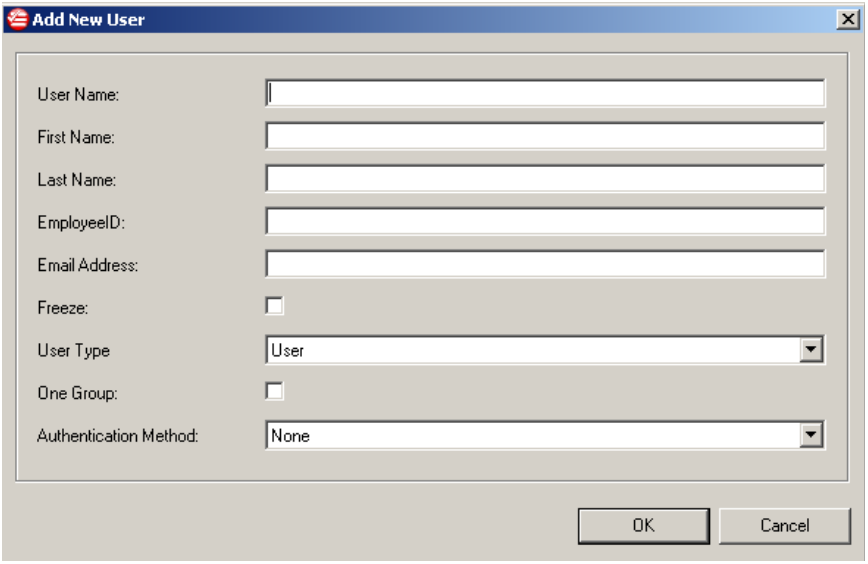


FIGURE 11-1. Add New User screen

3. Specify the following options:

OPTION	DESCRIPTION
User name	Specify the user name for the new user account (required).
First name	Specify the first name for the new user account (required).
Last name	Specify the last name for the new user account (required).
EmployeeID	Specify the employee ID for the new user account (optional).
Freeze	Select whether to temporarily disable the new user account (optional). While frozen, the user is unable to log on to devices.
Group User Type	Select the privileges of the new account. For information about account roles, see *Devices and Users Overview on page 2-1*. Options include:

Option	Description
	• **User** • **Authenticator** • **Administrator** **Note** It is not possible to add Enterprise Administrator or Authenticator accounts to groups.
One Group	Select whether the new user account is allowed to be a member of multiple group policies.
Authentication method	Select the method that the new user account uses to log on to Endpoint Encryption devices. For information about authentication methods, see *Devices and Users Overview on page 2-1*. **Note** The default authentication method for users is **None**.

4. Click **OK**.

   The new Endpoint Encryption user is added the Enterprise. The user cannot log on to Endpoint Encryption devices until the user account is added to a group.

Importing Users from a CSV File

Use a Comma Separated Values (CSV) file to simultaneously import multiple users.

Format: user name (required), first name, last name, employee ID, email address

Note

Include a comma for fields with no data.

Make sure to create one CSV file for each group of users to import. All users in the CSV file are added to the same group.

Procedure

1. Expand the group in the left pane, then click **Users**.
2. Right-click whitespace in the right pane, then select **Bulk Import Add Users**.

   The open file window appears.
3. Go to the CSV file and click **Open**.
4. At the confirmation, click **OK**.

   The users in the CSV file are added to the group and the Enterprise.

Importing Active Directory Users

PolicyServer maintains a user directory separate from the Active Directory database. This allows PolicyServer absolute security over access to all Endpoint Encryption devices, user rights, and authentication methods.

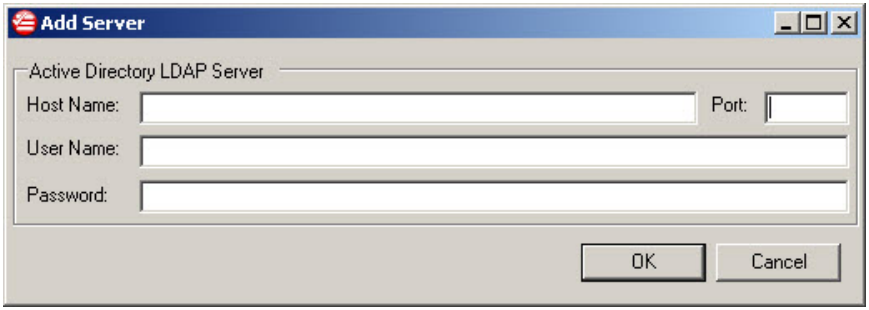
For information about configuring Active Directory integration, see the *Endpoint Encryption Installation and Migration Guide*.

Procedure

1. Log on to PolicyServer MMC.
2. Open **Enterprise Users**, right-click the right pane (whitespace) and then select **External Directory Browser**.

   The **Active Directory User Import** screen appears.
3. Go to **Edit** > **Connect to Domain**.

The **Add Server** screen appears.



4. Specify the following parameters for the Active Directory LDAP Server:
   - **Host name**
   - **Port**
   - **User name**
   - **Password**
5. Click **OK**.
6. Wait for the specified Active Directory domain to populate.

   The Active Directory tree for the specified domain appears in the left pane.
7. From the left pane, use the navigation tree to select the container from which to add users.

   The available users populate in the right pane.
8. Select applicable users, right-click the selection and then select:
   - **Add to Enterprise**
   - **Add to Group**
     a. Expand the Enterprise.
     b. Select the appropriate group.

c. Click **OK**.

9. Click **OK** to add the users to the specified location.

   A confirmation window appears.

10. Click **OK** to confirm.

    An import status message displays.

11. Click **OK** to finish, or repeat the procedure to select more users to import

---

Finding a User

It is faster to search for users at the group level; however, this is at the cost of searching the entire Enterprise.

Procedure

1. From the left pane, click **Enterprise Users** or expand the group and then click **Users**.

2. At the upper corner of the right pane, click **Search**.

The **User Search Filter** window appears.

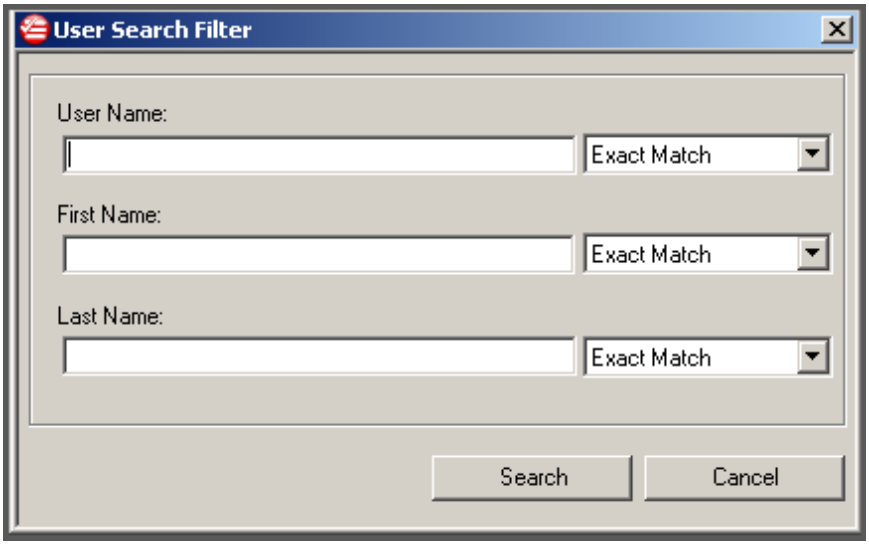


FIGURE 11-2. User Search Filter window

3. Specify search details and then click **Search**.

   All accounts matching the search criteria appear.

> **Note**
>
> If there are many users, use **Page Counter** to go from one page to another or click **Clear** to remove all results.

Modifying a User

Any Group Administrator can change a user's profile information.

Note

- Enterprise-level changes are applied to the user universally, but group-level changes apply only to that group.

Procedure

1. Open **Enterprise Users**.
2. In the right pane, right-click the user and then select **Modify User**.

   The **Modify User** screen appears.
3. Make the necessary changes. If the authentication method changes to **Fixed Password**, provide the default user password.
4. Click **OK**.
5. At the confirmation message, click **OK**.

Viewing a User's Group Membership

List groups to view the Endpoint Encryption user's group membership. If a user belongs to multiple groups, you can also change the priority of assigned groups. For information about the default group, see *Changing a User's Default Group on page 11-15*.

Procedure

1. Open **Enterprise Users**.
2. Right-click the user, then select **List Groups**.

   The **Group Membership** list appears.

Adding a New User to a Group

Note

Adding a user to the Enterprise does not assign the user to any groups

Adding a user to a group adds the user to the group and to the Enterprise

Procedure

1. Expand the group and open **Users**.
2. Go to the right pane and right-click the whitespace, then select **Add New User**.

   The **Add New User** screen appears.

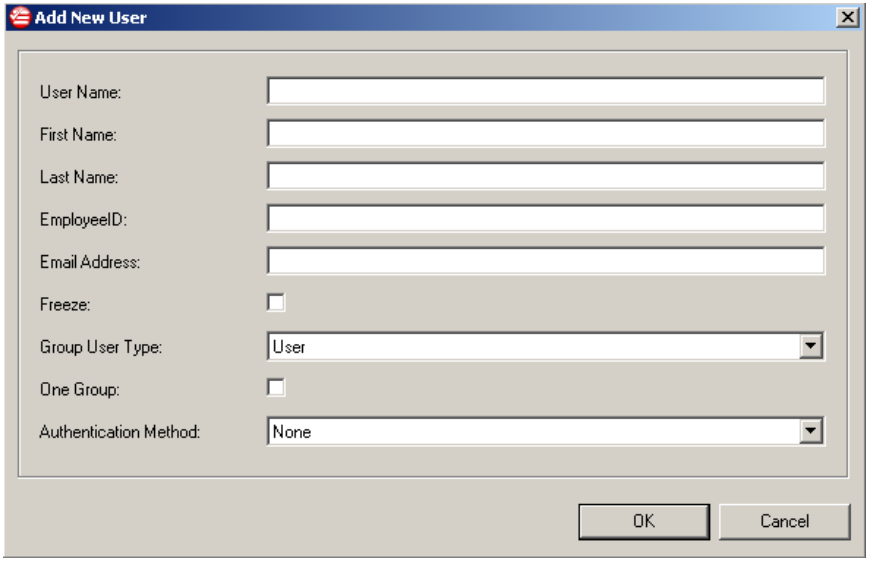


FIGURE 11-3. Add New User Screen

3. Specify the following options:

Option	Description
User name	Specify the user name for the new user account (required).
First name	Specify the first name for the new user account (required).
Last name	Specify the last name for the new user account (required).
EmployeeID	Specify the employee ID for the new user account (optional).
Freeze	Select whether to temporarily disable the new user account (optional). While frozen, the user is unable to log devices.
Group User Type	Select the privileges of the new account. **Note** For information about account roles, see *Endpoint Encryption User Roles on page 2-5*. Options include: • User • Authenticator • Administrator **Note** It is not possible to add Enterprise Administrator or Enterprise Authenticator accounts to groups.
One Group	Select whether the new user account is allowed to be a member of multiple group policies.
Authentication method	Select the method that the new user account uses to log on to Endpoint Encryption devices. **Note** The default authentication method for users is **None**. For information about account roles, see *Devices and Users Overview on page 2-1*.

4. Click **OK**.

   The new user is added to the selected group and to the Enterprise. The user can now log on to Endpoint Encryption devices.

Adding an Existing User to a Group

A user can be a member of multiple groups.

Procedure

1. Expand the group in the left pane, then click **Users**.
2. Go to the right pane and right-click the whitespace, then select **Add Existing User**.

The **Add Users To Group** screen appears.

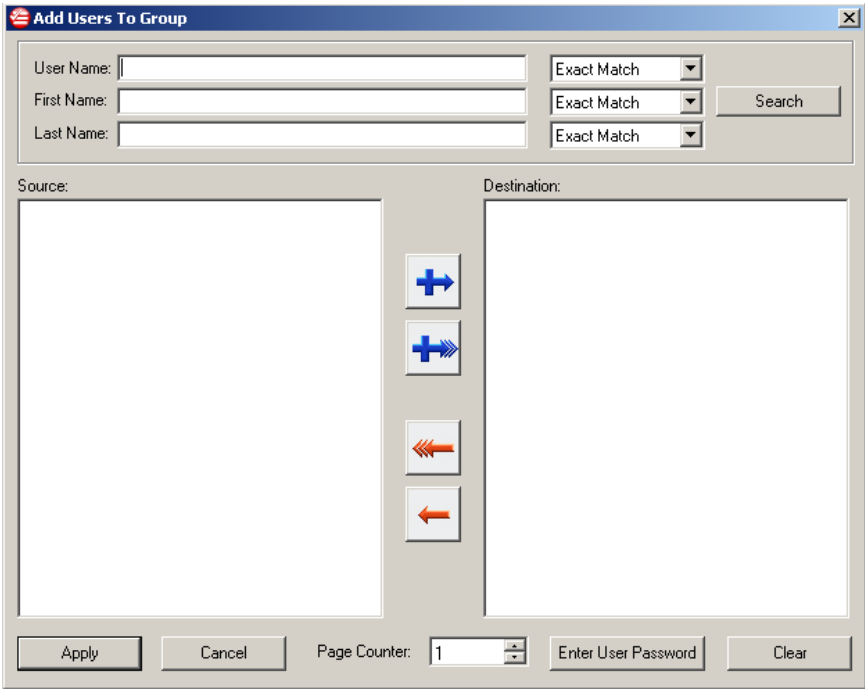


FIGURE 11-4. Add Users To Group Screen

3. Specify user details and then click **Search**.

   The **Source** field populates with any accounts that match the search criteria.

4. Select users from the **Source** list and click the blue arrow to add them.

   For information about search icons, see *Add/Remove Search Result Icons on page 11-15*.

   The selected user moves to the **Destination** list.

5. To change a user password:

   a. In the **Destination** list, highlight the user.

b. Click **Enter User Password** located at the bottom of the window.

c. In the window that appears, specify the user's authentication method.

d. Click **Apply** to close the **Change Password** window.

6. Click **Apply** to save changes.

   The user is added to the group. If this is the only group assignment, then the user is now able to log on to Endpoint Encryption devices.

Add/Remove Search Result Icons

Center Icons	Description
	Add a single selected item to **Destination** field.
	Add all found items based on search criteria to **Destination** field.
	Remove a single selected item from **Destination** field.
	Remove all items from **Destination** field.

Changing a User's Default Group

Endpoint Encryption users can belong to any number of groups while Endpoint Encryption devices can only belong to one group. The default group is the group that controls the user's policies. The first group listed in the group membership is the default group for the user.

Note

The user must be allowed to install to the default group. For more information, see *Allowing User to Install to a Group on page 11-16*.

Procedure

1. Open **Enterprise Users**.
2. Right-click the user and then select **List Groups**.

   The **Group Membership** list appears.
3. Right-click the user and then select **Move to top**.

   The user's default group is changed.

Allowing User to Install to a Group

Allowing a user to install to a group allows users to install Endpoint Encryption devices to a group that they are a member, without requiring the additional privileges of the Administrator or Authenticator role.

Note

The default setting is **Disallow User To Install To This Group**.

Procedure

1. Open **Enterprise Users**.
2. Right-click the user and then select **List Groups**.

   The **Group Membership** list appears.
3. Right-click the user and then select **Allow User To Install To This Group**.

The user can now install devices to this group.

Removing Users From a Group

WARNING!

Before removing a Group Administrator or Group Authenticator account, reassign this role to another user account. Otherwise, only the Enterprise Administrator or Enterprise Authenticator accounts can make changes to the group.

Removing a user from a group restricts the user from accessing any Endpoint Encryption device assigned to that group. Before removing Endpoint Encryption users, make sure that the users have backed up and unencrypted their data.

Procedure

1. Expand the group, then click **Users**.
2. In the right pane, right-click the user and select **Remove User**.

   A warning message appears.
3. To remove the user from the Enterprise as well, select **Remove from Enterprise**.

   Note

   Removing a user from the Enterprise also removes that user from all groups and subgroups.
4. Click **Yes**.

   The user is removed.

Removing All Users From a Group

WARNING!

Before removing a Group Administrator or Group Authenticator account, reassign this role to another user. Otherwise, only Enterprise Administrator and Enterprise Authenticator accounts can make group-level changes.

Procedure

1. Expand the group, then click **Users**.
2. In the right pane, right-click the user and select **Remove All Users**.

   A warning message displays.
3. To remove all users from the Enterprise as well, select **Remove from Enterprise**.

   Note

   Removing a user from the Enterprise also removes that user from all groups and subgroups.
4. Click **Yes.**

Restoring a Deleted User

For both Control Manager and PolicyServer MMC environments, use the PolicyServer MMC Recycle Bin node to restore a deleted Endpoint Encryption user.

Procedure

1. Log on to PolicyServer MMC.
2. Expand the **Recycle Bin**.
3. Open **Deleted Users**.

The right pane loads all deleted users.

4. Right-click the user account, then select **Restore User**.

   The user is added back to the Enterprise, but does not belong to any policy groups.

Working with Passwords

When a user forgets the password or misplaces an endpoint, the user can reset the password using methods defined by policies. The following password reset methods are available:

- Microsoft Windows Active Directory
- Control Manager
- PolicyServer MMC
- Remote Help
- Self Help

All of these options involve setting the policy at the Enterprise or at the group/policy level, if necessary. Use the Support Information policy to provide support-related information to users about password resets.

Note

For information about configuring support information in Control Manager, see *Endpoint Encryption Policy Settings on page 5-12*.

For information about configuring support information in PolicyServer MMC, see *Support Information Setup on page 11-29*.

Resetting an Enterprise Administrator/Authenticator Password

Only Enterprise Administrator accounts can reset an Enterprise Administrator password. An Authenticator within the same group permissions or higher, can reset an Administrator or Authenticator password within that group.

Tip

As a safeguard against password loss, Trend Micro recommends having at least three Enterprise Administrator accounts at all times. If an Enterprise Administrator account password is lost, use Self Help authentication to reset the password.

Procedure

1. Log on to PolicyServer MMC using an Enterprise Administrator account.
2. Open **Enterprise Users**.
3. Right-click the Enterprise Administrator or Authenticator account with the lost password, then select **Change Password**.

   The **Change Password** window appears.
4. Select an authentication method.
5. Specify the password (if requested).
6. Click **Apply**.

   The account password is reset.

Note

The **User must change password at next logon** option is only available after the agent updates policies.

Resetting a Group Administrator/Authenticator Password

Changes to passwords only affect the selected group. To reduce the number of passwords, assign Group Administrator accounts to only one Top Group.

Procedure

1. Log on to PolicyServer MMC using a Group Administrator account.
2. Expand the group, then click **Users**.
3. Right-click the Group Administrator or Group Authenticator account with the lost password, then select **Change Password**.

   The **Change Password** window appears.
4. Select an authentication method.
5. Specify and confirm the password (if requested).
6. Click **Apply**.

   The account password is reset.

Note

The **User must change password at next logon** option is only available after the client updates.

Resetting User Passwords

When resetting a user's password, select the **User must change password at next logon** check box to require a user to change the password at next logon. The user will be required to change the password after logging on any Endpoint Encryption device.

Tip

Trend Micro recommends using domain authentication.

Resetting to a Fixed Password

Procedure

1. Open **Enterprise Users** or expand the group, then click **Users**.
2. Select the user accounts from the right pane.

   Note

   Hold SHIFT to select multiple users. Multiple selection is only available at the group level.

3. Right-click and select **Change Password**.

   The **Change Password** window appears.

4. For the **Authentication Method**, select **Fixed Password**.
5. Specify and confirm the password.
6. Click **Apply**.

   The user must change his/her password after successfully logging on Endpoint Encryption devices.

Resetting a User Password with Active Directory

Trend Micro recommends using Active Directory to reset the user password, especially if the user has access to the company Help Desk, has network connectivity, or if Windows Single Sign-on (SSO) is enabled.

Refer to the appropriate operating system user guide for more information about resetting a domain user password using Active Directory.

Smart Card

Smart card authentication requires both a PIN and a physical token to confirm the user identity. To use smart card authentication, make sure that the following requirements are met:

- The smart card reader is connected to the endpoint and the smart card is inserted into the smart card reader.
- ActivClient 6.1 with all service packs and updates are installed.
- Specify the smart card PIN in the password field.

WARNING!

Failure to provide a correct password sends a password error and may result in locking the smart card.

Note

Smart card authentication is only configurable with PolicyServer MMC.

Enable smart card authentication for each Endpoint Encryption agent:

- For File Encryption, go to **Login** > **Password** > **Physical Token Required**.
- For Full Disk Encryption, go to **Full Disk Encryption** > **Login** > **Token Authentication**

Smart Card Registration

Smart card certificates are associated with the user account and the user's assigned group. Once registered, the user can use smart card authentication from any Endpoint Encryption device in that group. Users are free to use any Endpoint Encryption device in their group and do not need to ask for another one-time password.

Use one of the following methods to register a smart card:

- To use the Full Disk Encryption preboot, see *Registering a Smart Card in Full Disk Encryption Preboot on page 11-25*.

- To use PolicyServer MMC, see *Configuring Smart Card Authentication in PolicyServer MMC on page 11-24*.

Configuring Smart Card Authentication in PolicyServer MMC

Registering a smart card allows a user to log on with smart card authentication. For information about Full Disk Encryption Preboot smart card authentication, see *File Encryption Smart Card Authentication on page 13-4*.

Procedure

1. Log on to PolicyServer MMC.
2. Go to **Full Disk Encryption** > **Login**.
3. Right-click **Token Authentication** and select **Enable**.
4. Go to **Full Disk Encryption** > **Password**.
5. Right-click **Authentication Methods Allowed**, then select **Properties**.

   The **Edit Policy Value** window appears.
6. Select **PIN**, then click **OK** to confirm the policy change.

Smart card authentication is enabled.

Registering a Smart Card in PolicyServer MMC

Before proceeding, make sure to configure smart card authentication. For information about configuring smart card authentication, see *Configuring Smart Card Authentication in PolicyServer MMC on page 11-24*.

Smart card certificates are associated with the user account and the user's assigned group. Once registered, the user can use smart card authentication from any Endpoint Encryption device in that group. Users are free to use any Endpoint Encryption device in their group and do not need to ask for another one-time password.

After assigning a smart card PIN to the user, the user can log on the Full Disk Encryption agent directly with the smart card from the smart card authentication screen in the Full Disk Encryption preboot.

Procedure

1. Log on to PolicyServer MMC.
2. Insert the smart card in the reader.
3. Connect the reader to the PolicyServer endpoint.
4. Expand the specific group and then click **Users**.
5. Right-click a user and then select **Change Password**.

   The **Change Password** window appears.
6. In the **Authentication Method** drop-down, select **Smart Card**.
7. Specify and confirm the **PIN**.
8. In the **Select a slot** drop-down, select the smart card type.
9. Click **Apply** to confirm token authentication.
10. Click **OK** to confirm the user account changes.

The smart card is registered to all users in the same group as the selected user.

Registering a Smart Card in Full Disk Encryption Preboot

Procedure

1. Follow the instructions to change passwords, then select **Smart Card**.

   See *Resetting User Passwords on page 11-21*.
2. Insert the smart card in the reader.
3. Connect the reader to the endpoint.

4. Specify the user name and fixed password.
5. Click **Continue**.
6. At the confirmation message, click **Continue**.
7. At the **Register Token** window, do the following:
   a. Type the new PIN provided by the Group or Enterprise Administrator.
   b. Confirm the new PIN.
   c. Select the smart card type from the **Token** drop-down list.
   d. Click **Continue** to finish registering the smart card token.

Using Self Help Password Reset

Users who have forgotten their passwords can use Self Help to authenticate without Help Desk assistance. Use the Number of Questions and the Personal Challenge policies to set the number of personal challenge questions and the questions that the user must answer, respectively. Self Help questions are answered during the initial user authentication and when users change their passwords.

For information about using Self Help, see *Self Help on page 2-12*.

Note

Self Help requires that the Endpoint Encryption agent has network connectivity to PolicyServer.

Procedure

1. Expand **Enterprise Policies** or expand the group and then expand **Policies**.
2. Go to **Common** > **Authentication** > **Local Login** > **Self Help**.

Policy Name	Policy Value	Policy Range
Common		
Agent	1 items	
Authentication	3 items	
Local Login	3 items	
Admin Password	10 items	
Self Help	2 items	
Number of Questions	1	1 - 6
Personal Challenge	0 items	
User Password	13 items	
Network Login	6 items	
Remember User Between Logins	Yes	Yes,No

FIGURE 11-5. Self Help Policy

3. Open **Number of Questions** to set the required number of questions that users must answer.

WARNING!

Do not set **Number of Questions** greater than six. Otherwise, users are unable to authenticate using Self Help.

---

4. Right-click **Personal Challenge** and select **Add** to set a question that the user must answer. Repeat until all personal challenge questions are defined.

   The user will be prompted to set the personal challenge question answers the next time that the user logs on any Endpoint Encryption device.

Remote Help Assistance

Remote Help allows users to reset a forgotten password or locked account. Any Endpoint Encryption user who has a locked account or forgot the account password must reset the password before being able to log on to any Endpoint Encryption device. Remote Help requires that the user contact the Help Desk for a Challenge Response. Remote Help does not require network connectivity to PolicyServer.

Procedure

1. Log on to PolicyServer MMC using any account with Group Administrator permissions in the same policy group as the user.
2. Ask the user to go to **Help** > **Remote Help** from the Endpoint Encryption agent.
3. Ask the user for the **Device ID**.

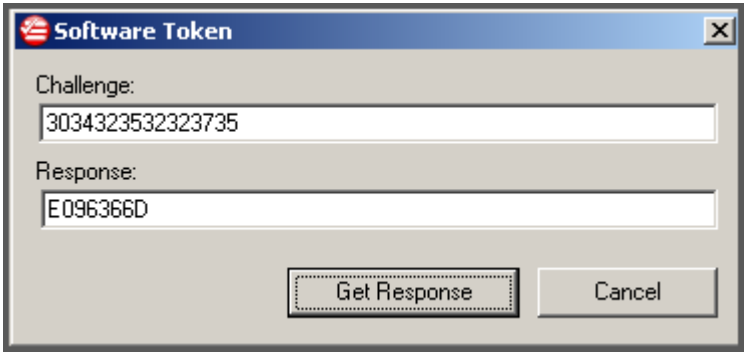
FIGURE 11-6. Remote Help Assistance

4. In PolicyServer MMC, open **Enterprise Devices** or expand the user's group and open **Devices**.
5. In the right pane, right-click the user's device and then select **Soft Token**.

   The **Software Token** window appears.
6. Get the16-digit challenge code from the user, and type it into the **Challenge** field of the **Software Token** window.

7. Click **Get Response**.

   The **Response** field loads with an 8-character string.



8. Tell the user the 8-character string from the **Response** field.
9. The user inputs the string in the **Response** field on the endpoint and clicks **Login**.
10. The user must specify a new password.

Support Information Setup

The Support Information policy specifies information about the organization's Support Help Desk. You can uniquely configure the Support Information policy for each group.

Procedure

1. Log on to PolicyServer MMC with either an Enterprise Administrator/ Authenticator account or a Group Administrator/Authenticator account within the same policy group as the user.
2. Expand the user's group and go to **Policies** > **Full Disk Encryption** > **Login**.
3. Right-click the **Support Info** policy and select **Add**.
4. Specify support information.

5. Click **OK**.

Using Remote Help to Unlock Full Disk Encryption Devices

Important

- Restarting the Endpoint Encryption device resets the challenge code.
- Manually synchronizing policies with PolicyServer also resets the challenge code.
- The challenge code and response code are not case sensitive.

Procedure

1. From the Full Disk Encryption preboot, go to **Menu** > **Authentication** > **Remote Help**.
2. Provide the **Challenge Code** to the Policy/Group Administrator.
3. Specify the **Response Code** provided by the Policy/Group Administrator.
4. Click **Login**.

   The **Change Password** screen appears.

   Note

   If the account uses domain authentication, the endpoint boots directly into Windows.

5. Specify and confirm new password, then click **Next**.

   The device boots into Windows.

Using Remote Help to Unlock a File Encryption Device

If a user exceeds the number of authentication attempts and policies are set to enact Remote Authentication, File Encryption locks Endpoint Encryption folders and notifies

the user that Remote Help is required. Using Remote Help to unlock File Encryption requires assistance from the Enterprise Authenticator or Group Authenticator.

Note

For information about using Remote Help, see *Remote Help on page 2-11*.

Procedure

1. Right-click the File Encryption tray icon, then select **Remote Help**.

   The **Remote Help** screen appears.

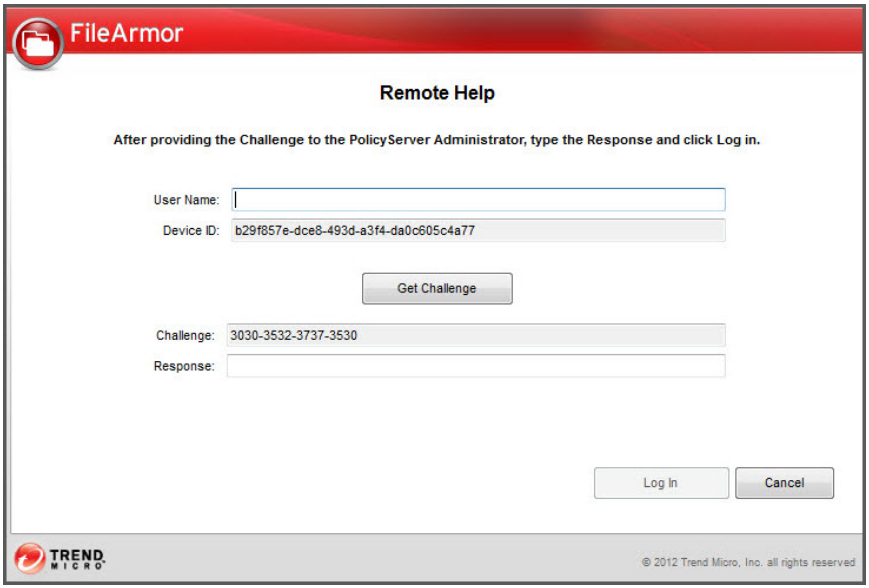


FIGURE 11-7. File Encryption Remote Help

2. Specify the user name.
3. Click **Get Challenge**.
4. Type the **Response** provided by the Enterprise/Group Authenticator.

5. Click **Log In**.

   The user is authenticated to File Encryption and a notification displays.

Chapter 12

Devices in PolicyServer MMC

Endpoint Encryption devices are Endpoint Encryption agents that have registered with PolicyServer. Installing any Endpoint Encryption agent automatically registers the endpoint with PolicyServer as a new Endpoint Encryption device. Since multiple Endpoint Encryption agents may protect a given endpoint, a single endpoint may appear as more than one Endpoint Encryption device on PolicyServer.

This chapter explains how to administer PolicyServer MMC to manage policies affecting Endpoint Encryption devices, and how to ensure data security by using the specialized Endpoint Encryption devices widget. This chapter also explains how to restore deleted Endpoint Encryption devices.

Topics include:

- *Adding a Device to a Group on page 10-11*
- *Removing a Device from a Group on page 10-12*
- *Deleting a Device from the Enterprise on page 12-5*
- *Getting the Software Token on page 12-6*
- *Using the Recovery Key on page 12-7*
- *Viewing Device Attributes on page 12-8*
- *Viewing Directory Listing on page 12-11*
- *Viewing Group Membership on page 12-11*

- *Killing a Device on page 12-12*
- *Locking a Device on page 12-12*
- *Resetting a Device on page 12-13*
- *Restoring a Deleted Device on page 7-17*

Adding a Device to a Group

Note

Each Endpoint Encryption device can belong to only one group.

Procedure

1. In the left pane, expand the desired policy group and click **Devices**.
2. In the right pane, right-click the whitespace and select **Add Device**.

   The **Add Devices to Group** screen appears.

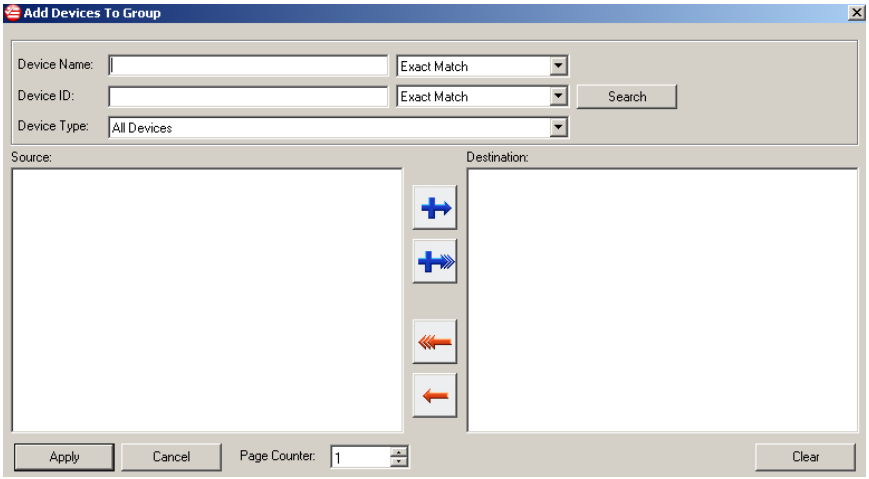


FIGURE 12-1. Add Devices to Group Screen

3. Type the device details, then click **Search**.

   If there is a match, the **Source** field populates with Endpoint Encryption devices.

4. Select applicable Endpoint Encryption devices from the **Source** field, then click the **blue arrow** to add them.

For information about search icons, see *Add/Remove Search Result Icons on page 11-15*.

5. Click **Apply** to add the Endpoint Encryption device to the selected group.

   The Endpoint Encryption device is added to the group.

Add/Remove Search Result Icons

Center Icons	Description
	Add a single selected item to **Destination** field.
	Add all found items based on search criteria to **Destination** field.
	Remove a single selected item from **Destination** field.
	Remove all items from **Destination** field.

Removing a Device from a Group

Removing a device from a group removes the device from the selected group only.

WARNING!

To remove a device from all groups, remove it from the Enterprise. Before deleting a device from the Enterprise, verify that the device has been unencrypted and that all Endpoint Encryption agents were uninstalled. Failure to do so may result in irreversible data loss.

Procedure

1. Expand the group, then open **Devices**.
2. In the right pane, right-click the device and select **Remove Device**.

   A warning message appears.
3. Click **Yes**.

   The device is removed.

Deleting a Device from the Enterprise

Deleting any Endpoint Encryption device from the Enterprise also removes the device from all policy groups. The deleted Endpoint Encryption device continues functioning as long as connectivity and password policies are current on the device. However, Endpoint Encryption users cannot recover files if the Endpoint Encryption device has a critical hardware failure after it has been removed from the Enterprise. To mitigate this risk, immediately decrypt the Endpoint Encryption device and uninstall the Endpoint Encryption agent software.

WARNING!

Make sure to decrypt the device (files or hard disk) and uninstall the Endpoint Encryption agent before deleting a device from the Enterprise. Failure to do so may result in data loss.

For information about removing a device from a specific group, but not the Enterprise, see *Removing a Device from a Group on page 10-12*.

Procedure

1. Uninstall the Endpoint Encryption agent from the endpoint.

   Note

   For information about uninstalling Endpoint Encryption agents, see the *Endpoint Encryption Installation and Migration Guide*.

2. Open **Enterprise Devices**.
3. In the right pane, right-click the device and select **Delete Device**.
4. At the warning message, click **Yes** to confirm.

The Endpoint Encryption device is deleted from the Enterprise.

Note

For information about adding the Endpoint Encryption device back the Enterprise, see *Restoring a Deleted Device on page 7-17*.

Getting the Software Token

Generating a "software token" creates a unique string that you can use to unlock Endpoint Encryption devices and to remotely help Endpoint Encryption users reset forgotten passwords.

For information about resetting passwords or unlocking a user account, see *Remote Help Assistance on page 11-27*.

Procedure

1. Open **Enterprise Devices** or expand a group and open **Devices**.

   All devices in the Enterprise or group appear in the right pane.

2. Right-click the device and select **Soft Token**.

   The **Software Token** screen appears.

3. Get the16-digit challenge code from the user, and type it into the **Challenge** field of the **Software Token** window.
4. Click **Get Response**.

   The **Response** field loads with an 8-character string.

5. Tell the user the 8-character string from the **Response** field.

The Endpoint Encryption device is unlocked and the Endpoint Encryption user can log on to the device.

Using the Recovery Key

Generating a "recovery key" allows the user to decrypt a hard disk when the user has forgotten the original password or key. The recovery key is only available to Encryption Management for Apple FileVault and Encryption Management for Microsoft BitLocker agents because they do not use the other recovery methods available in Full Disk Encryption.

Note

The recovery key is used for encrypted devices and is only available as an option when applicable devices are selected.

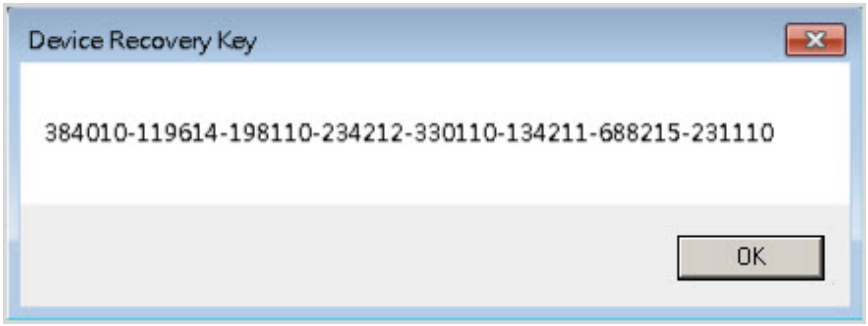
Procedure

1. Open **Enterprise Devices** or expand a group and open **Devices**.

   All devices in the Enterprise or group appear in the right pane.

2. In the right pane, right-click the device, then select **Recovery Key**.

   The **Recovery Key** screen appears.



3. Copy the recovery key for use on the locked device.

4. Click **OK**.

Viewing Device Attributes

Use **Device Attributes** to view a current snapshot of the selected device.

Procedure

1. Open **Enterprise Devices** or expand a group and open **Devices**.

   All devices in the Enterprise or group appear in the right pane.

2. In the right pane, right-click the device and select **Device Attributes**.

   The **Device Attributes** screen appears.

Endpoint Encryption Device Attributes

The following table describes the Endpoint Encryption device attributes.

TABLE 12-1. Endpoint Encryption Device Attributes

ATTRIBUTE NAME	EXAMPLE	DESCRIPTION
.NET Version	2.0.50727.3620	The version and build number for the installed .NET framework
Common Framework Build Number	5.0.0.84	The Endpoint Encryption agent uses a common framework for encryption. The build number is used to tell whether the agent is up-to-date
Disk Model	VMware Virtual IDE	The hard disk mode.
Disk Name	`\\.\PHYSICALDRIVE0`	The name of the hard dis.

Attribute Name	Example	Description
Disk Partitions	1	The number of partitions on the disk with the agent installe.
Disk Size	10733990400	The total capacity of the hard disk (bytes.
Domain Name	WORKGROUP	The domain that the endpoint is a membe.
Endpoint ID	85b1e3e2a3c25d882540ef6e4818c3e4	The unique ID of the endpoint used for Control Manager integration.
<Agent> User	maryjane	The user name for the last logged on use.
<Agent> Version	5.0.0.260	The version and build number for the agent installation.
Hostname	TREND-4136D2DB3	The endpoint's host name.
IP Address	`10.1.152.219`	The endpoint's IP address.
Locale	English (United States)	The language and region that the endpoint is configure.
Machine Name	TREND-4136D2DB3	The computer name that the endpoint use.
Manufacturer	VMware, Inc.	The manufacturer of the hard dis.
Model	VMware Virtual Platform	The model of the hard dis.
Operating System	Microsoft Windows NT 5.1.2600 Service Pack 3	The operating system installed on the same hard disk as the agent.

Attribute Name	Example	Description
Operating System Name	Microsoft Windows XP Professional	The common name of the operating system installed on the same hard disk as the agent
Operating System Service Pack	Service Pack 3	The service pack number of the operating system installed on the same hard disk as the agent
Operating System Version	5.1.2600.196608	The version number of the operating system installed on the same hard disk as the agent
Partition Scheme	Classical MBR	The partition scheme for the hard disk
Processor	x86 Family 6 Model 30 Stepping 5, Genuine Intel	The processor make and model of the endpoint
Processor Count	2	The number of processors in the endpoint
Processor Revision	1e05	The processor revision number
Time Zone	Taipei Standard Time	The time zone that the endpoint resides
Total Physical Memory	2047MB	The total RAM installed in or allocated to the endpoint
Type	X86-based PC	The endpoint processor type
Windows User Name	TREND-4136D2DB3\admin	The user name of the Windows account that last logged on the endpoint

Viewing Directory Listing

Note

Use Directory Listing to view the directory structure of KeyArmor devices. Directory Listing is only available in environments that have upgraded from a previous PolicyServer version that had registered KeyArmor devices.

Procedure

1. Open **Enterprise Devices** or expand a group and open **Devices**.

   All devices in the Enterprise or group appear in the right pane.

2. In the right pane, right-click the device and select **Directory Listing**.

   The **Device Directory Snapshot** screen appears.

Viewing Group Membership

Note

A device can belong to only one group.

Procedure

1. Open **Enterprise Devices** or expand a group and open **Devices**.

   All devices in the Enterprise or group appear in the right pane.

2. In the right pane, right-click the device and select **List Groups**.

   The **Group Membership** screen appears.

Killing a Device

Initiating a "kill" command deletes all Endpoint Encryption device data. The deleted data is different depending on the scope of data that the associated Endpoint Encryption agent manages. For example, initiating a "kill" command to a Full Disk Encryption device deletes all data from the endpoint, while initiating a "kill" command to a File Encryption device deletes all files and folders in local or removable storage protected by the File Encryption agent. The "kill" command is issued when the Endpoint Encryption agent communicates with PolicyServer.

WARNING!

Killing a device cannot be undone. Back up all the data before initiating a kill command.

Procedure

1. Open **Enterprise Devices** or expand a group and open **Devices**.

   All devices in the Enterprise or group appear in the right pane.

2. In the right pane, right-click the device and select **Kill Device**.
3. At the warning message, click **Yes**.
4. At the confirmation message, click **OK**.

Locking a Device

Initiating a "lock" command to the Endpoint Encryption device prevents Endpoint Encryption user access until after performing a successful Remote Help authentication. Locking a device reboots the endpoint and forces it into a state that requires Remote Help. The lock command is issued when the Endpoint Encryption agent communicates with PolicyServer.

Procedure

1. Open **Enterprise Devices** or expand a group and open **Devices**.

All devices in the Enterprise or group appear in the right pane.

2. In the right pane, right-click the Endpoint Encryption device and select **Lock Device**.
3. At the warning message, click **Yes**.
4. At the confirmation message, click **OK**.

Resetting a Device

Initiating a "soft reset" command reboots the endpoint. The command issues the next time that the agent communicates with PolicyServer.

Procedure

1. Open **Enterprise Devices** or expand a group and open **Devices**.

   All devices in the Enterprise or group appear in the right pane.
2. In the right pane, right-click the Endpoint Encryption device and select **Soft Reset**.
3. At the warning message, click **Yes**.
4. At the confirmation message, click **OK**.

Restoring a Deleted Device

For both Control Manager and PolicyServer MMC environments, use the PolicyServer MMC Recycle Bin node to restore a deleted Endpoint Encryption device.

Procedure

1. Log on to PolicyServer MMC.
2. Expand the Enterprise, then go to **Enterprise Maintenance**.

3. Expand the **Recycle Bin**.
4. Open **Deleted Devices**.

   The right pane loads all deleted Endpoint Encryption devices.
5. Right-click the Endpoint Encryption device and select **Restore Device**.

   The Endpoint Encryption device is added back to the Enterprise, but does not belong to any policy groups.

Part IV

Endpoint Encryption Agent Management

Chapter 13

File Encryption

File Encryption protects individual files and folders on local hard drives, and removable media (USB drives). You can set policies specifying which folders and drives are encrypted on the device and policies about encrypted data on removable media. Encryption is performed after authentication takes place.

File Encryption can also protect different files with different keys, allowing you to set access policies to the File Encryption device and separate policies for access to certain files. This is useful in environments where multiple users access one endpoint.

Topics include:

- *About File Encryption on page 13-2*
- *File Encryption Authentication on page 13-2*
- *File Encryption Agent Menu on page 13-10*
- *File Encryption Context Menu on page 13-13*
- *File Encryption Archive Encryption on page 13-14*
- *File Encryption Archive and Burn on page 13-18*
- *Using File Encryption Secure Delete on page 13-19*

About File Encryption

The Trend Micro File Encryption agent uses AES encryption to protect data that is shared between Endpoint Encryption users, stored on removable media, or saved on network resources. File Encryption can also protect different files with different keys, allowing you to set access policies to the File Encryption agent and then create separate policies for access to certain files, which is useful in environments where multiple users access the same endpoint. Encryption is performed after authentication takes place.

You can use Trend Micro PolicyServer to specify which files and folders are encrypted and policies about encrypting removable media.

End users also have the flexibility to locally manage File Encryption by encrypting individual files, folders, or removable media on the fly, safeguarding their data regardless of where it travels.

File Encryption Authentication

This section explains how to authenticate to and use File Encryption. All authentication methods for Endpoint Encryption are available in File Encryption.

Note

For information about authentication methods, see *Authentication Methods on page 2-6*.

File Encryption First-time Authentication

When File Encryption is launched for the first time, an initial registration is required to identify PolicyServer. The fixed password authentication method is default. Other options are available depending on policy settings.

Procedure

1. Right-click the File Encryption tray icon, and then select **Register**.
2. Specify the Endpoint Encryption user name and password.

3. Specify the PolicyServer IP address (or host name) and the Enterprise.
4. Click **OK**.

   The **Change Password** screen appears.
5. Select desired authentication from the drop-down.
6. Specify and confirm the new password, then click **OK**.

> **Note**
> Without authenticating to File Encryption, access to files and removable media is denied.

File Encryption Domain Authentication

For domain authentication single sign-on (SSO), ensure that the following requirements are met:

- The user belongs to a policy group with domain authentication enabled.
- Make sure that the Host Name and Domain Name are configured properly.
- PolicyServer and all Endpoint Encryption devices using domain authentication are in the same domain.
- The user account is configured in both Active Directory and PolicyServer. The user name is case sensitive and must match exactly.

> **Note**
> For information about configuring domain authentication policies for single sign-on, see *Domain Authentication Policy Rules on page 2-10*.

Authenticating with Domain Authentication

Procedure

1. Use PolicyServer MMC and go to the following policy location:

   File Encryption > **Login** > **Authentication Methods Allowed**

2. Select **Fixed Password** as the authentication type.
3. Provide the user name and password for the domain account.
4. Click **OK**.

Note

- Domain authentication cannot be used with a Smart Card PIN.
- Remote Help is available to domain users. However, the domain password must be reset in Active Directory if it is forgotten.

File Encryption Smart Card Authentication

To use smart card authentication, make sure that the following requirements are met:

- Enable the File Encryption policy at **Login** > **Password** > **Physical Token Required**.
- The smart card reader is connected to the endpoint and the smart card is inserted.

Note

File Encryption only supports CASC and PIC smart cards

- ActivClient 6.1 with all service packs and updates must be installed.
- Specify the smart card PIN in the password field.

WARNING!

Failure to provide a correct password sends a password error and may result in locking the smart card.

Authenticating with a Smart Card

File Encryption smart card authentication is only available if enabled by policy.

Note

File Encryption only supports CASC and PIC smart cards

Procedure

1. Use PolicyServer MMC and go to the following policy location:

   File Encryption > **Login** > **Authentication Methods Allowed**

2. From the Endpoint Encryption device, open File Encryption and select **Smart Card** from the authentication drop-down.
3. Specify the user name.
4. Specify the smart card PIN or fixed password (if applicable).
5. Click **OK**.

File Encryption ColorCode Authentication

File Encryption ColorCode authentication is only available if enabled by policy.

Procedure

1. Use PolicyServer MMC and go to the following policy location:

   Group Name > **Policies** > **File Encryption** > **Login** > **Authentication Methods Allowed**

2. Select **ColorCode** from the authentication drop-down.
3. Specify the unique ColorCode combination.
4. Click **OK**.

File Encryption PIN Authentication

File Encryption PIN authentication is only available if enabled by policy.

Procedure

1. Use PolicyServer MMC and go to the following policy location:

   Group Name > **Policies** > **File Encryption** > **Login** > **Authentication Methods Allowed**

2. Select **PIN** from the authentication drop-down.
3. Specify the PIN combination.
4. Click **OK**.

Changing Password in File Encryption

To change the password, the user must authenticate to File Encryption with a User account role. The user can then change the password using any authentication method allowed by policy.
Use PolicyServer MMC to manage the policy at:

Group Name > **Policies** > **File Encryption** > **Login** > **Authentication Methods Allowed**

Procedure

1. Right-click the File Encryption tray icon, then select **Change Password**.
2. Specify the password.

3. Click **Next**.
4. Select any available authentication method.
5. Specify and confirm the new password.
6. Click **OK**.

   The new password is updated and a confirmation message appears.

Forced Password Reset

File Encryption prevents unauthorized access to encrypted files and folders by locking protected files when there are too many unsuccessful authentication attempts or if the endpoint has not communicated with PolicyServer for a specified duration of time. Depending on the policy configuration, File Encryption locks a user from access or enacts a time delay before authentication attempts can be made.

Using Remote Help to Unlock a File Encryption Device

If a user exceeds the number of authentication attempts and policies are set to enact Remote Authentication, File Encryption locks Endpoint Encryption folders and notifies the user that Remote Help is required. Using Remote Help to unlock File Encryption requires assistance from the Enterprise Authenticator or Group Authenticator.

Note

For information about using Remote Help, see *Remote Help on page 2-11*.

Procedure

1. Right-click the File Encryption tray icon, then select **Remote Help**.

The **Remote Help** screen appears.

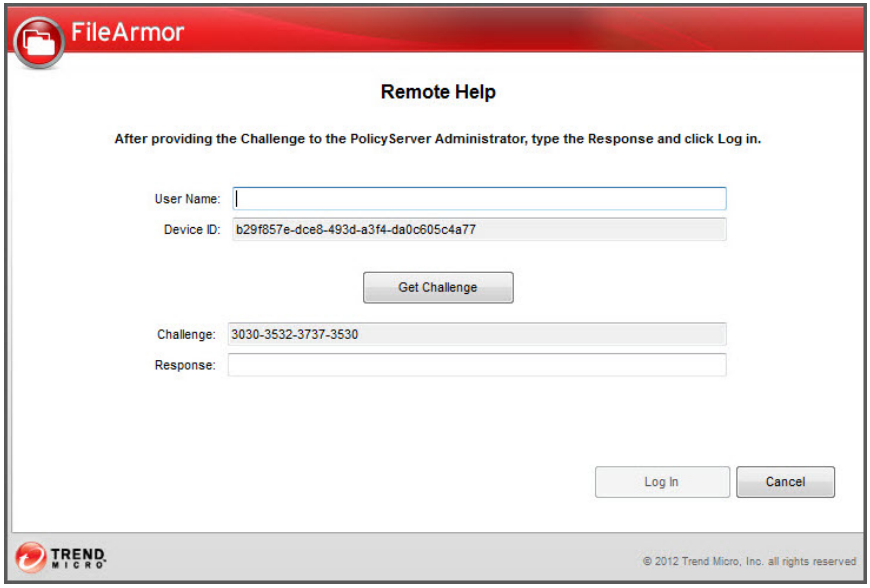


FIGURE 13-1. File Encryption Remote Help

2. Specify the user name.
3. Click **Get Challenge**.
4. Type the **Response** provided by the Enterprise/Group Authenticator.
5. Click **Log In**.

   The user is authenticated to File Encryption and a notification displays.

Endpoint Encryption Device Policy Rules

The following table explains the security policy rules for lost or stolen Endpoint Encryption devices. Depending on the policy settings, too many consecutive unsuccessful authentication attempts to the Endpoint Encryption devices delays the

next authentication attempt, locks the Endpoint Encryption device, or erases all data controlled by the associated Endpoint Encryption agent.

TABLE 13-1. Device Security Options

SECURITY OPTION	DESCRIPTION
Time delay	After exceeding the allowed number of failed authentication attempts, PolicyServer temporarily locks the Endpoint Encryption device and notifies the Endpoint Encryption user that the device is locked. The ability to authenticate or reset the password is disabled during the time delay. The duration of the time delay is determined by policy. Once the time delay has expired, the user is permitted to authenticate. **Note** The Endpoint Encryption user may use Self Help or Remote Help authentication to avoid waiting for the time delay period to expire.
Remote authentication required	After exceeding the allowed number of failed authentication attempts, PolicyServer locks the Endpoint Encryption device until the Endpoint Encryption user contacts Technical Support for Remote Help authentication. **Note** For more information, see *Remote Help on page 2-11*.
Erase the device	After exceeding the allowed number of failed authentication attempts, PolicyServer erases all data controlled by the associated Endpoint Encryption agent. For example, erasing a Full Disk Encryption device deletes all data from the endpoint, while erasing a File Encryption device deletes all files and folders in local or removable storage protected by the File Encryption agent. **WARNING!** The Endpoint Encryption user cannot recover the erased data.

File Encryption Agent Menu

Use the File Encryption icon ( ) in the system tray to access to the File Encryption agent. Right-click the agent icon to display the menu items. The following table explains the available menu options.

TABLE 13-2. File Encryption Agent Menu Options

MENU ITEM	FUNCTION
Register	First-time user registration of File Encryption with the PolicyServer. For more information, see *File Encryption First-time Authentication on page 13-2*.
Log In / Log Out	Authenticate with PolicyServer.
Change Password	Permits users to change their password. For more information, see *Changing Password in File Encryption on page 13-6*.
Remote Help	Unlock File Encryption using Remote Help to authenticate if the user forgets the Endpoint Encryption password, there were too many unsuccessful authentication attempts, or the Endpoint Encryption device has not communicated with the PolicyServer for a specified duration. For more information, see *Forced Password Reset on page 13-7*.
Sync with PolicyServer	Manually download policy updates from PolicyServer. For more information, see *Synchronizing Policies with PolicyServer on page 13-11*.
Sync with PolicyServer Offline Files	Synchronizing with PolicyServer offline files enforces new security policies using an import file instead of communicating directly with PolicyServer. For more information, see *Synchronizing Policies with PolicyServer Offline Files on page 13-12*.
Hide Notification	Silences all File Encryption notifications.
About File Encryption	Displays File Encryption information including version, last sync time, and authenticated user.
Close Tray	Temporarily removes the File Encryption tray icon.

Synchronizing Policies with PolicyServer

File Encryption agents can manually download new policies by opening the File Encryption tray icon and selecting **Sync with PolicyServer**.

Note

File Encryption agents can synchronize policies without user authentication.

If a network connection or PolicyServer is unavailable, a **Failed to sync with server** error display.

Automatic Policy Synchronization

The following list explains the events that initiate policy synchronization between all Endpoint Encryption agents and PolicyServer.

- After the operating system loads and the Endpoint Encryption agent service starts

  ---

  Note

  For information about Endpoint Encryption services, see *Endpoint Encryption Services on page C-1*.

- When the Full Disk Encryption preboot starts (Full Disk Encryption only)
- The time duration of the **Sync Interval** policy elapses

Open the **About** screen in the Endpoint Encryption agent to manually synchronize policies.

Note

Endpoint Encryption device actions initiate after the Endpoint Encryption agent receives policy updates.

Synchronizing Policies with PolicyServer Offline Files

Offline updates work with the File Encryption 3.0.13.2447 or higher and now work on x64 installs of File Encryption. If the update is generated, the offline update replaces any existing user password with the new fixed password.

Synchronized passwords will not replace a user password on update to maintain the same functionality of managed devices.

A fixed password is required to add a user to an offline File Encryption device. The offline process will generate two files:

Changing PolicyServer

Use the File Encryption **About** menu to update the PolicyServer that manages policies.

Procedure

1. Right-click the File Encryption tray icon, then select **About File Encryption**.

   The **About** windows appears.

2. Click **Edit PolicyServer**.

3. Specify the new PolicyServer host name or IP address.

4. Click **OK**.

   File Encryption is now managed by the new PolicyServer.

File Encryption Context Menu

Users can encrypt a file by right-clicking the file and selecting an encryption option. The following illustration shows some of the options available.

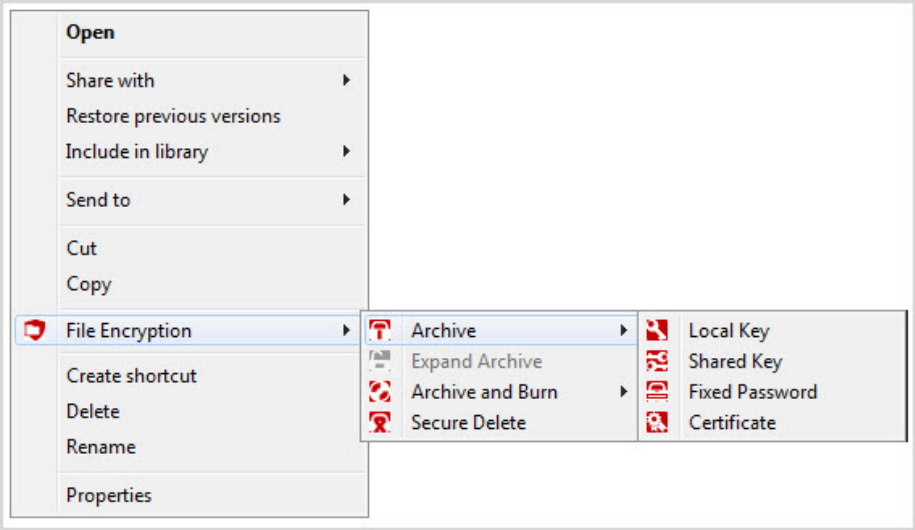


FIGURE 13-2. File Encryption Context Menu

Use the following table to understand the available menu options.

TABLE 13-3. File Encryption Context Menu Options

MENU OPTION	DESCRIPTION
Archive	Create an encrypted copy of the specified file.
Expand Archive	Open a previously created archive.
Archive and Burn	Create an encrypted copy of the specified file and write it to CD/DVD.
Secure Delete	Securely erase the selected files and the file history from the File Encryption device.

File Encryption Archive Encryption

File Encryption encrypts files based on policies defined locally or policies defined by PolicyServer. The encryption method depends on user needs for file access and the level of security desired.

To automatically encrypt files, save them in the following locations:

- A folder on the File Encryption device
- A folder that resides on removable media
- A fully encrypted removable media device

File Encryption Local Key Encryption

Selecting the Local Key function allows a user to encrypt files for view strictly by that user. Local Key files can only be accessed on a File Encryption device by the user who created them.

The policies are available at:

- In Control Manager, go to **Policies** > **Policy Management**, select the policy, then modify **Common** policy rules. For more information, see *Configuring Common Policy Rules on page 3-21*.
- PolicyServer MMC, set **File Encryption** > **Encryption** > **Encryption Method Allowed** to **User's Unique Key**

Note

File Encryption creates a new file when encrypting a file. The original file remains unencrypted in its original location.

WARNING!

Depending on the Windows operating system, a user may view folder contents if switching from one user to a separate user without restarting Windows. While file names and folder content may be viewed, the file contents are not available. This is due to Windows operating system caching the file structure for quick search capability.

Creating a Local Key

Procedure

- Right-click the desired file, then go to **File Encryption** > **Archive** > **Local Key**.

  The original files or folders are unchanged and can be kept or deleted.

File Encryption Shared Key Encryption

Use the Shared Key function to encrypt files strictly for access by members of the same policy group.

The policies are available at:

- In Control Manager, go to **Policies** > **Policy Management**, select the policy, then modify **Common** policy rules. For more information, see *Configuring Common Policy Rules on page 3-21*.
- PolicyServer MMC, set **File Encryption** > **Encryption** > **Encryption Method Allowed** to **Group Key**

  Note

  To allow any File Encryption user within the PolicyServer Enterprise, to view encrypted files, set **Encryption Key Used** to **Enterprise Key**.

Note

File Encryption creates a new file when encrypting a file. The original file remains unencrypted in its original location.

WARNING!

Depending on how Windows permissions are configured, a user can view encrypted folder contents if switching between users without restarting Windows. While the file names and folder content may be viewed, the file contents are not available. This is due to Windows Operating system caching the file structure for quick search capability.

Creating a Shared Key

Procedure

- Right-click the desired file, then go to **File Encryption** > **Archive** > **Shared Key**.

  The original files or folders are unchanged to keep or delete.

File Encryption Fixed Password Encryption

File Encryption can create encrypted files using a fixed password. Users can optionally set the file to self-extract so that the recipient does not need File Encryption to decrypt the file.

Note

- There is no functionality available for password recovery with self-extracting files. If a password is forgotten, the encrypted file cannot be recovered.
- Due to a Windows limitation, executable (self-extracting) files cannot be larger than 2 GB.

Creating a Fixed Password Key

Procedure

1. Right-click the desired file, then go to **File Encryption** > **Archive** > **Fixed Password**.
2. Specify and confirm the fixed password.

3. Optionally select **Output encrypted data as a self-extracting archive**, if necessary.
4. Click **OK**.

   The file encrypts.
5. To decrypt the file, do the following:
   a. Double-click the file.
   b. Specify the archive password.
   c. Click **OK**.
6. For self-extracting archives, do the following:
   a. Double-click the file.
   b. Specify the archive password.
   c. Select the extraction location.
   d. Select whether to open destination after extraction or to overwrite existing files.
   e. Click **Continue**.

   The original files or folders are unchanged and can be kept or deleted.

File Encryption Digital Certificate Encryption

File Encryption can encrypt files with digital certificates (smart cards) from the Windows certificate store.

Creating a Digital Certificate Key

Procedure

1. Right-click the desired file, then go to **File Encryption** > **Archive** > **Certificate**.
2. Select a **Certificate Store**.

3. Click **Gather Certificates**.
4. Select one or more certificates, then click **OK**.

> **Note**
> Certificates are gathered from the Windows certificate store.

5. Insert a blank CD/DVD inserted in an available optical drive.
6. Select the optical drive.
7. Click **OK**.

   The original files or folders are unchanged and can be kept or deleted.

File Encryption Archive and Burn

The File Encryption Use the **Archive and Burn** function to write encrypted files to a CD or DVD. Files are self-extracting and can encrypt using a fixed password or digital certificate.

Burning an Archive with a Fixed Password

Procedure

1. Right-click the file, then go to **File Encryption** > **Archive and Burn** > **Fixed Password**.
2. Specify and confirm the password.
3. Insert a burnable disk into the CD/DVD optical drive.
4. Select the optical drive.
5. Click **OK**.

The self-extracting file is burned to CD/DVD.

Burning an Archive with a Certificate

Procedure

1. Right-click the file, then go to **File Encryption** > **Archive and Burn** > **Certificate** from the File Encryption context menu
2. Select a **Certificate Store**.
3. Click **Gather Certificates**.
4. Select one or more certificates, then click **OK**.
5. Select an optical drive with a black CD/DVD inserted.
6. Click **OK**.

   The self-extracting file is burned to CD/DVD.

File Encryption Secure Delete

Use Secure Delete to securely erase the selected files and the file history from the File Encryption device.

Using File Encryption Secure Delete

Procedure

1. Right-click the file and go to **File Encryption** > **Secure Delete**.
2. Click **Yes** to permanently delete the file.

Chapter 14

Full Disk Encryption

Full Disk Encryption provides comprehensive endpoint data security using mandatory strong authentication and full disk encryption. Full Disk Encryption secures not only the data files, but also all applications, registry settings, temporary files, swap files, print spoolers, and deleted files. Until the user is validated, strong preboot authentication restricts access to the vulnerable host operating system.

Topics include:

- *About Full Disk Encryption on page 14-2*
- *Endpoint Encryption Tools on page 14-2*
- *Full Disk Encryption Preboot on page 14-3*
- *Full Disk Encryption Connectivity on page 14-17*
- *Full Disk Encryption Recovery Console on page 14-20*
- *Full Disk Encryption Recovery Methods on page 14-32*
- *Repair CD on page 14-34*
- *Patch Management with Full Disk Encryption on page 14-41*

About Full Disk Encryption

The Full Disk Encryption agent combines a robust AES256 encryption algorithm and mandatory authentication to make data inaccessible without authentication. Full Disk Encryption prevents data loss by encrypting the whole drive, including operating system, program, temporary, and end user files.

Full Disk Encryption allows for the flexibility to use either software-based encrypted hard drives or hardware-based encrypted hard drives as needed. Seagate DriveTrust™, OPAL, OPAL2, and SanDisk™ self-encrypting solid-state drives are supported. While hardware-based encryption is simpler to deploy on new hardware, easier to maintain, and offers a higher level of performance, software-based encryption does not require any hardware and is cheaper to deploy to existing endpoints.

Trend Micro PolicyServer controls policies affecting Full Disk Encryption, ensuring complete endpoint security centrally managed across the Enterprise. Full Disk Encryption is network-aware and updates policies before allowing authentication. You can also remotely lock or wipe data on the endpoint before the operating system or any other sensitive data is accessed.

Trend Micro Endpoint Encryption 5.0 Patch 2 advances Full Disk Encryption by integrating with encryption solutions built into the host operating system through two new Endpoint Encryption agents:

- Encryption Management for Microsoft BitLocker
- Encryption Management for Apple FileVault

Endpoint Encryption Tools

The following table describes the various tools available for Endpoint Encryption.

TABLE 14-1. Endpoint Encryption Tools

TOOL	DESCRIPTION
Recovery Console	Use Recovery Console to recover from an operating system critical error, troubleshoot network issues, and manage users or logs.
Command Line Helper	Use Command Line Helper to create encrypted values to secure credentials when creating an installation script.
Command Line Installer Helper	Use Command Line Installer Helper to generate scripts for automated installations and to create encrypted values for credentials when creating the scripts.
DAAutoLogin	Use DAAutoLogin for Windows patching. DAAutoLogin allows for a one-time bypass of Endpoint Encryption Preboot.
Repair CD	Use the bootable Repair CD to decrypt the hard disk before removing Full Disk Encryption in the event that the disk becomes corrupted. Only use the Repair CD if standard removal methods are not possible. A typical symptom of a corrupted disk is a black screen.

Full Disk Encryption Preboot

After installing Full Disk Encryption, the Full Disk Encryption preboot appears before Windows loads. The Full Disk Encryption preboot ensures that only authorized users are able to access endpoints and updates local security policies when connected to PolicyServer.

Note

Use PolicyServer MMC to optionally make the user name case sensitive.

FIGURE 14-1. The Full Disk Encryption Preboot Screen

Menu Options

There are several options available in the upper-left menu of Full Disk Encryption Preboot.

TABLE 14-2. Full Disk Encryption Preboot Menu Options

MENU ITEM	DESCRIPTION
Authentication	Change the authentication method used to log on to Endpoint Encryption devices.
Communication	Manually synchronize with PolicyServer. **Note** The **Communication** menu item is not available for unmanaged endpoints.

Menu Item	Description
Computer	View information about Full Disk Encryption, change the keyboard layout, access the on-screen keyboard, or restart/shutdown the device.

Network Connectivity

The network connection icon ( ) appears in the upper-right corner when Full Disk Encryption is installed as a managed endpoint. The icon is only highlighted when the device is connected to the network and has communication with PolicyServer. When Full Disk Encryption is unmanaged, the network icon never displays.

Connecting to a Wireless Network

The wireless connection icon ( ) appears in the upper-right corner of the Full Disk Encryption preboot logon when the endpoint has a detected wireless card installed. If there is no wireless card detected, the wireless network icon does not display.

Note

The Full Disk Encryption preboot cannot automatically detect the authentication for WEP security. If the authentication type is WEP-OPEN or WEP-PSK, manually specify the security type.

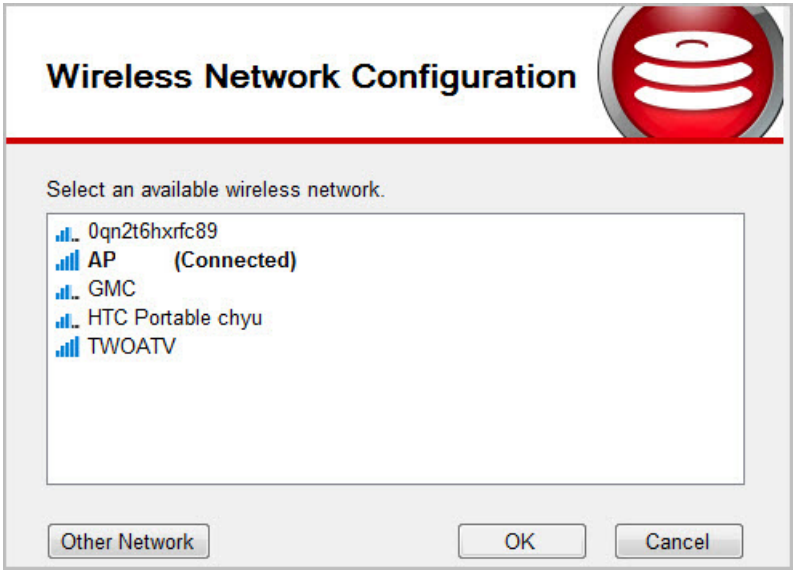
Procedure

1. Click the wireless icon in the upper-right corner of the Full Disk Encryption preboot logon.

The **Access Connection** screen appears.

2. Click **All Access Points**.

The **Wireless Network Configuration** screen appears.



3. Do one of the following:
   - To use a listed network, select the SSID, then click **OK**.
   - To configure an unlisted network, click **Other Network**, specify the SSID settings, then click **Connect**.
4. Wait for Full Disk Encryption to configure wireless access.
5. Click **Close** to complete the wireless network setup.

On-Screen Keyboard

Access the on-screen keyboard from Full Disk Encryption preboot by going to **Menu** > **Computer** > **On-Screen Keyboard**.

To insert the cursor in the desired field when the keyboard is displayed, click **Focus** on the bottom-right corner of the keyboard.

Changing the Keyboard Layout

Changing the keyboard layout affects both keystrokes and the on-screen keyboard. Once Windows boots, the keyboard layout is set by the Windows operating system. A restart is required to commit the keyboard layout changes.

Procedure

1. Go to **Menu** > **Computer** > **Change Keyboard Layout**.

   The **Select the keyboard language (layout)** window appears.

2. Select a keyboard layout.
3. Click **OK**.
4. Click **OK** to restart the endpoint.

Changing Authentication Methods

Note

For information about authentication methods, see *Authentication Methods on page 2-6*.

Procedure

1. From the Full Disk Encryption preboot, select **Change Password After Login**.
2. Specify the user name and password.
3. Click **Login**.

The **Change Password** window appears. The interface is different for different authentication methods.

FIGURE 14-2. Example Of Changing A Fixed Password

4. From the upper-left menu, select **Authentication**, then select the desired authentication method.

   The **New Password** window for the chosen authentication method appears.

5. Provide and confirm the new password, and then click **Next**.

   The device boots into Windows.

Changing Passwords

The following procedure explains how to change the Endpoint Encryption user account password using the Full Disk Encryption preboot.

Procedure

1. Specify the Endpoint Encryption user name and password.
2. select **Change Password After Login**.
3. Click **Login**.

   The **Change Password** window appears. The interface is different for different authentication methods.

FIGURE 14-3. Changing A Fixed Password Screen

4. Provide and confirm the new password, and click **Next**.

   The device boots into Windows.

ColorCode

ColorCode™ is a unique authentication method designed for quick access and easy memorization. Rather than alphanumeric characters or symbols for the password,

ColorCode authentication consists of a user-created color sequence (example: red, red, blue, yellow, blue, green).

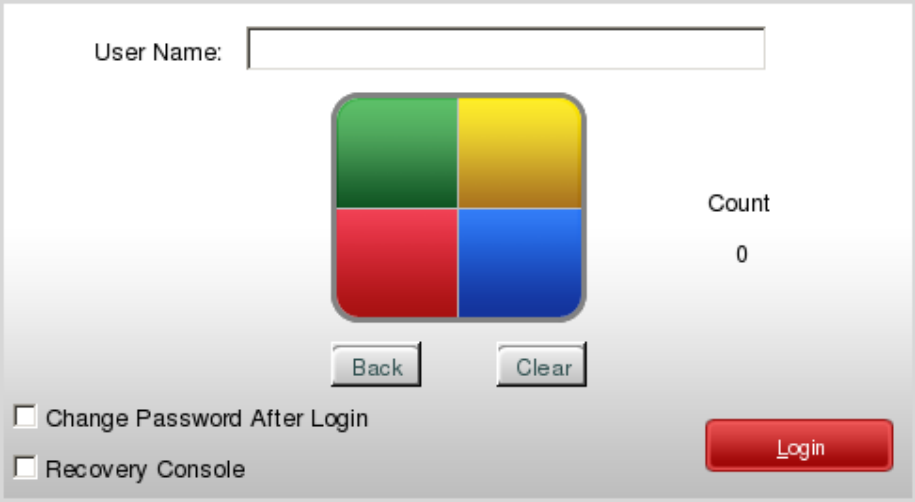


FIGURE 14-4. ColorCode Authentication Screen

Creating a ColorCode Password

The total number of steps in the ColorCode (count) is defined by PolicyServer. The default count is six.

Procedure

1. Start the endpoint and wait for the Full Disk Encryption preboot to appear.
2. Follow the instructions to change passwords.

   See *Changing Passwords on page 14-9*.
3. Change the authentication method to ColorCode.

Note

For information about changing authentication methods, see *Changing Authentication Methods on page 14-8*.

The **ColorCode Change Password** screen appears.

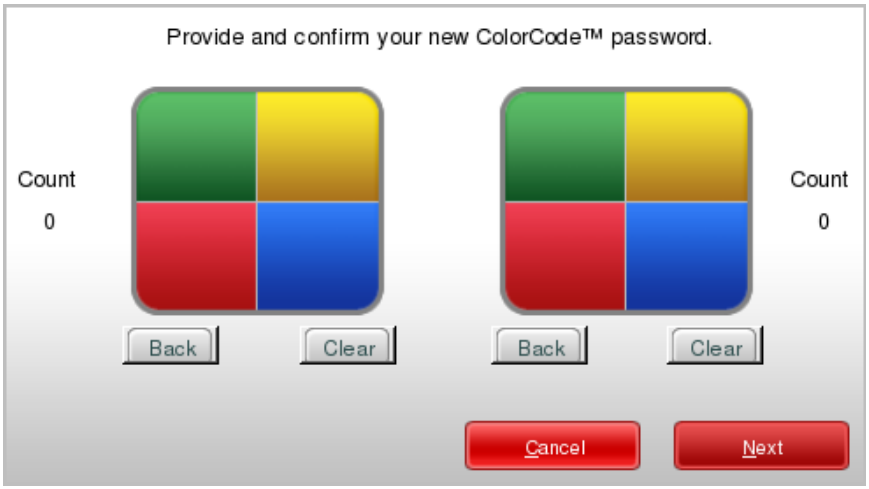


FIGURE 14-5. ColorCode Change Password Screen

4. Select the first color by clicking it using the square to the left.

   The count increases by one.

5. Click additional colors in the sequence.

Tip

Click **Back** to change the last color clicked, or click **Clear** to start over.

6. After the sequence is complete, confirm the ColorCode password using the square to the right.

7. Click **Next** to finish.

Remote Help

Remote Help allows Group or Enterprise Authenticators to assist Endpoint Encryption users who are locked out and cannot log on to Endpoint Encryption devices after too many unsuccessful log on attempts, or when the period between the last PolicyServer synchronization has been too long.

Using Remote Help to Unlock Full Disk Encryption Devices

Important

- Restarting the Endpoint Encryption device resets the challenge code.
- Manually synchronizing policies with PolicyServer also resets the challenge code.
- The challenge code and response code are not case sensitive.

Procedure

1. From the Full Disk Encryption preboot, go to **Menu** > **Authentication** > **Remote Help**.
2. Provide the **Challenge Code** to the Policy/Group Administrator.
3. Specify the **Response Code** provided by the Policy/Group Administrator.
4. Click **Login**.

   The **Change Password** screen appears.

   Note

   If the account uses domain authentication, the endpoint boots directly into Windows.

5. Specify and confirm new password, then click **Next**.

   The device boots into Windows.

Smart Card

Smart card authentication requires both a PIN and a physical token to confirm the user identity. To use smart card authentication, make sure that the following requirements are met:

- The smart card reader is connected to the endpoint and the smart card is inserted into the smart card reader.
- ActivClient 6.1 with all service packs and updates are installed.
- Specify the smart card PIN in the password field.

WARNING!

Failure to provide a correct password sends a password error and may result in locking the smart card.

Note

Smart card authentication is only configurable with PolicyServer MMC.

Enable smart card authentication for each Endpoint Encryption agent:

- For File Encryption, go to **Login** > **Password** > **Physical Token Required**.
- For Full Disk Encryption, go to **Full Disk Encryption** > **Login** > **Token Authentication**

Smart Card Registration

Smart card certificates are associated with the user account and the user's assigned group. Once registered, the user can use smart card authentication from any Endpoint Encryption device in that group. Users are free to use any Endpoint Encryption device in their group and do not need to ask for another one-time password.

Use one of the following methods to register a smart card:

- To use the Full Disk Encryption preboot, see *Registering a Smart Card in Full Disk Encryption Preboot on page 11-25*.

- To use PolicyServer MMC, see *Configuring Smart Card Authentication in PolicyServer MMC on page 11-24*.

Registering a Smart Card in Full Disk Encryption Preboot

Procedure

1. Follow the instructions to change passwords, then select **Smart Card**.

   See *Resetting User Passwords on page 11-21*.

2. Insert the smart card in the reader.
3. Connect the reader to the endpoint.
4. Specify the user name and fixed password.
5. Click **Continue**.
6. At the confirmation message, click **Continue**.
7. At the **Register Token** window, do the following:

   a. Type the new PIN provided by the Group or Enterprise Administrator.

   b. Confirm the new PIN.

   c. Select the smart card type from the **Token** drop-down list.

   d. Click **Continue** to finish registering the smart card token.

Self Help

Self Help authentication allows Endpoint Encryption users who have forgotten the credentials to answer security questions and log on to Endpoint Encryption devices without getting Technical Support assistance. Self Help is not available to Enterprise or Group Administrator and Authenticator accounts. Self Help requires the Endpoint Encryption user to respond with answers to predefined personal challenge questions. Self Help can replace fixed password or other authentication methods.

Note

Self Help is only configurable with PolicyServer MMC.

Make sure to allow Self Help authentication. For more information, see *Authentication Policies on page 9-30*.

WARNING!

Self Help can have a maximum of six questions. Do not create more than six questions or users cannot log on using Self Help authentication.

Setting Up Self Help

If the Self Help policy is enabled, the user is prompted to define answers for the Self Help questions after his/her first login. If the user changes their password, they must define Self Help question answers again.

Note

Self Help answers are stored on the device. If a user logs on another Full Disk Encryption device, the user must define Self Help answers for that device.

Procedure

1. Provide the user name and password.
2. Click **Login**.

   The **Self Help** window appears.
3. Define answers for all of the Self Help questions.
4. Click **Next**.

   The device boots into Windows.

Using Self Help

Procedure

1. From the top-left menu of Full Disk Encryption Preboot, go to **Menu** > **Authentication** > **Self Help**.

   The **Self Help** window appears.

2. Answer all of the Self Help questions.

3. Click **Login**.

4. Define a new password, and then click **Next**.

   The device boots into Windows.

Changing Self Help Answers

Procedure

1. From the Full Disk Encryption preboot, provide the credentials, select **Change Password After Login**, then click **Login**.

   The **Change Password** window appears.

2. Provide and confirm the new password, then click **Next**.

   The **Self Help** window appears.

3. Define new answers for all Self Help questions, then click **Next**.

   The Endpoint Encryption device boots into Windows.

Full Disk Encryption Connectivity

Endpoint Encryption uses a FIPS 140-2 approved encryption process for data passed between the Full Disk Encryption preboot and PolicyServer. Full Disk Encryption

agents that have network connectivity to PolicyServer can receive policy updates and upload audit data from the agent. All client-server communications are internally encrypted and can be sent over insecure connections such as the Internet.

Yous can place PolicyServer within a DMZ (Demilitarized Zone) for access to both internal networks and the Internet. For information about different network topology configurations, see the *Endpoint Encryption Installation and Migration Guide*.

TABLE 14-3. Full Disk Encryption Connectivity Requirements

RESOURCE	FUNCTION
PolicyServer	Updated security policies from PolicyServer are sent to the Full Disk Encryption preboot or by connectivity established within Windows, LAN, or VPN.
TCP/IP Access	Network connectivity requires full TCP/IP network access; dial-up or telephone access cannot be used to provide connectivity with PolicyServer during preboot authentication.
Port	Endpoint Encryption agents communicate using port 8080 by default. To change the default port number, go to Recovery Console and update the PolicyServer. For details, see *Changing the Full Disk Encryption PolicyServer on page 14-23*.

Automatic Policy Synchronization

The following list explains the events that initiate policy synchronization between all Endpoint Encryption agents and PolicyServer.

- After the operating system loads and the Endpoint Encryption agent service starts

  Note

  For information about Endpoint Encryption services, see *Endpoint Encryption Services on page C-1*.

- When the Full Disk Encryption preboot starts (Full Disk Encryption only)
- The time duration of the **Sync Interval** policy elapses

Open the **About** screen in the Endpoint Encryption agent to manually synchronize policies.

Note

Endpoint Encryption device actions initiate after the Endpoint Encryption agent receives policy updates.

Updating Full Disk Encryption Agents

Full Disk Encryption agents automatically receive policy updates from PolicyServer at intervals determined by policy.

Do either of the following to manually update policies.

Procedure

- Use the Full Disk Encryption preboot.
  a. Go to **Communications** > **Synchronize policies**.
  b. Go to **Computer** > **About Full Disk Encryption**.

     The timestamp of the latest PolicyServer policy synchronization displays.
- Use the Full Disk Encryption agent.
  a. Double-click the Full Disk Encryption icon ( ) in the Windows system tray.

     The Full Disk Encryption agent opens.
  b. Click **Synchronize with PolicyServer**.

     After a moment PolicyServer enforces all new policies changes.

Full Disk Encryption Recovery Console

Recovery Console helps you recover Full Disk Encryption devices in the event of primary operating system failure, troubleshoot network connectivity issues, and manage policies when not connected with PolicyServer.

WARNING!

Use Recovery Console before running standard Windows diagnostic and repair utilities.

All policy changes are overwritten when the Full Disk Encryption agent synchronizes policies with PolicyServer.

Recovery Console Options

Console Menu	Description
Back to Login	Exit Recovery Console and return to the login screen.
Decrypt Disk	Remove encryption from the disk drive. Use the Full Disk Encryption Preboot Recovery Console to access Decrypt Disk.
Mount Partitions	Provide access to the encrypted partitions for file management. Use the Full Disk Encryption Preboot Recovery Console to access Mount Partitions. **Note** Mount Partitions is only accessible on devices with software encryption. This option is grayed-out if a device has hardware encryption.

Console Menu	Description
Restore Boot	Roll back the MBR to a state before Full Disk Encryption installation. Use the Full Disk Encryption Preboot Recovery Console to access Restore Boot. **Note** Restore Boot is only accessible on devices with software encryption. This option is grayed-out if a device has hardware encryption.
Manage Users	Add or remove users from the device when not connected to PolicyServer.
Manage Policies	Modify policies for devices that are either not managed by PolicyServer or are managed but are temporarily not connected to PolicyServer. If the device is managed, policy changes are overwritten the next time that the device communicates with PolicyServer.
View Logs	View and search the various Full Disk Encryption logs. **Note** Logs are available only when the Recovery Console is accessed from Windows.
Network Setup	Verify, test, and modify network settings.
Exit	Exit the Recovery Console.

Accessing Recovery Console from Full Disk Encryption Preboot

Only Enterprise or Group Administrator and Authenticator accounts can access Recovery Console.

Procedure

1. To allow users to access Recovery Console, enable the following policy:

Full Disk Encryption > **Agent** > **Allow User Recovery**

2. Reboot the endpoint.

   The Full Disk Encryption preboot appears.

3. Select the **Recovery Console** check box.

4. Specify Endpoint Encryption user account credentials.

5. Click **Login**.

   Recovery Console opens.

Accessing Recovery Console from Windows

Procedure

1. In Windows, go to the Full Disk Encryption installation directory.

   The default location is `C:\Program Files\Trend Micro\Full Disk Encryption\`.

2. Open `RecoveryConsole.exe`.

   The **Recovery Console** window appears.

3. Specify the Endpoint Encryption user name and password, then click **Login**.

   Recovery Console opens to the **Decrypt Disk** page.

Full Disk Encryption PolicyServer Settings

Full Disk Encryption PolicyServer settings are configurable by going to the Recovery Console from the Full Disk Encryption preboot or by running `C:\Program Files\Trend Micro\Full Disk Encryption\RecoveryConsole.exe`.

Changing the Full Disk Encryption PolicyServer

Note

Changing the PolicyServer requires access to Full Disk Encryption Recovery Console. For more information, see *Full Disk Encryption PolicyServer Settings on page 14-22*.

Procedure

1. From the Full Disk Encryption Recovery Console, click the **PolicyServer** tab.
2. Click **Change Server**.
3. At the warning message, click **Yes**.
4. Specify the new server address.
5. Click **Save**.

Using Decrypt Disk

Selecting **Decrypt Disk** decrypts an encrypted Full Disk Encryption hard disk, but does not remove any of the encryption drivers. If using **Decrypt Disk**, disable the Full Disk Encryption "DrAService" service before booting into Windows.

WARNING!

Read this procedure before using **Decrypt Disk**. Data loss may occur if performed incorrectly. Do not use **Decrypt Disk** to remove Full Disk Encryption from any Endpoint Encryption device that is functioning normally. Use `TMFDEUninstall.exe` instead.

Procedure

1. Log on to Recovery Console.

   See *Accessing Recovery Console from Full Disk Encryption Preboot on page 14-21*.

   Recovery Console opens to the **Decrypt Disk** page.

2. Click **Decrypt** to begin decrypting the drive.

   Decryption begins immediately and the **Decrypt Disk** page shows the decryption progress.

3. When decryption completes, click **Exit** to reboot the Endpoint Encryption device.

4. Do one of the following:

   - If booting a repair tool CD, DVD, or USB key:

     a. After exiting Full Disk Encryption, press **F12** (or the appropriate button to enter the boot options).

     b. Insert the Repair CD and select the CD/DVD drive from the boot options screen.

     c. Proceed with established recovery actions.

   - If booting into Windows:

     a. Reboot the endpoint and hold **F8**.

     b. Select **Safe Mode** before the system begins booting into Windows.

> **WARNING!**
>
> If the Windows boot options screen is missed, immediately turn off the device. If Windows boots normally (not in Safe Mode), DrAService will immediately start encrypting the drive again. Any recovery actions taken at this point will risk irreparable damage to data on the drive.

5. Open **Computer Management** and go to **Services and Applications** > **Services**.

   The **Services** screen appears.

6. Locate and double-click **Trend Micro Full Disk Encryption** to open the **Trend Micro Full Disk Encryption Properties** window.

7. On the **General tab**, change **Startup type** to **Disabled**.

8. Click **Apply**, then click **OK**.

9. Reboot the endpoint.

10. Log on the Full Disk Encryption preboot.
11. Log on to Windows.
12. After all recovery actions are complete, set **DrAService** to **Automatic**. The device automatically re-encrypts the hard disk after the next reboot.

Mount Partitions

Use **Mount Partitions** to copy files between the encrypted hard disk and external storage before imaging or reformatting the drive. The encrypted contents on the drive appear in the left pane and an unencrypted device can be mounted in the right pane. Use copy and paste to move file between panes. Files copied to the encrypted drive will encrypt. Files copied out of the encrypted drive will decrypt.

Restore Boot

The **Restore Boot** option restores the original boot on the Endpoint Encryption device when the device is fully decrypted. **Restore Boot** is only available from the Full Disk Encryption preboot.

Decrypt the disk before restoring the Master Boot Record (MBR).

WARNING!

Do not use **Decrypt Disk** before reading through the instructions. Data loss may occur.

Procedure

1. Log on to Recovery Console.

   See *Accessing Recovery Console from Full Disk Encryption Preboot on page 14-21*.

   Recovery Console opens to the **Decrypt Disk** page.

2. Click **Decrypt Disk**, then click **Decrypt**.

3. Switch to the **Restore Boot** option.

   A **Replace MBR** confirmation window appears.

4. Click **Yes** to replace the MBR.

   A message confirming the MBR replacement displays.

5. Click **Exit**.

   The Endpoint Encryption device boots into Windows.

Manage Full Disk Encryption Users

Use **Manage Users** to add or remove users from the Full Disk Encryption preboot cache or to change a user's cached password. The **Manage Users** option is useful when the Full Disk Encryption agent cannot connect to PolicyServer. Both the Full Disk Encryption preboot and Windows Recovery Console can use this option.

Note

- **Manage Users** is only available when not connected to PolicyServer.
- Changes made to users through Recovery Console are overridden when Full Disk Encryption connects to PolicyServer.

Some considerations about passwords:

- Assigned passwords are always a fixed password.
- Specify the user password expiration date using the **Password Expiration** calendar.
- Setting the date to the current date or older forces an immediate password change. Setting the date to a future date commits a change on that specified date.

Editing Users

Editing users in Recovery Console follows the same rules as the Enterprise. For information about roles and authentication, see *Devices and Users Overview on page 2-1*.

Procedure

1. Select the user from the user list.
2. Update the desired information.
3. Select the user type.

   For an explanation of account roles, see *Devices and Users Overview on page 2-1*.
4. Set the password expiration date.
5. Click **Save**.

   The user account is updated.

Adding Users

Procedure

1. Click **Add User**.
2. Specify the user name and password, then confirm the password.
3. Select the authentication method from the **Authentication Type** drop-down list.
4. Set the password expiration date.
5. Click **Save**.

   The new user appears in the User List and a confirmation window appears.
6. Click **OK** to close the confirmation window.

   The new user account is added.

Deleting Users

Procedure

1. Select a user from the user list.
2. Click **Delete User**.

   A delete user confirmation window appears.
3. Click **Yes**.

   The user is deleted from the user list.

Manage Policies

Use **Manage Policies** to set various policies for Full Disk Encryption Recovery Console. For an explanation of these policies, see *Policies in PolicyServer MMC on page 9-1*.

Note

The **Manage Policies** option is only available when not connected to PolicyServer and any changes are overridden the next time Full Disk Encryption connects to PolicyServer.

View Logs

Use **View Logs** to search for and display logs based on specific criteria. **View Logs** is only available from Recovery Console using Windows. It is unavailable from the Full Disk Encryption Preboot.

For information about viewing Full Disk Encryption logs, see *Accessing Recovery Console from Windows on page 14-22*.

Network Setup

Use Network Setup to verify, test, and/or change the network settings that are used by Full Disk Encryption Preboot. There are three tabs: **IPv4**, **IPv6**, and **PolicyServer**.

Managing Network Configuration

By default, **Get setting from Windows** is selected for both IPv4 and IPv6. Deselect this option to manually configure the network settings.

- Selecting **DHCP** (IPv4) or **Automatically get address** (IPv6) uses the dynamically assigned IP address.
- Selecting **Static IP** enables all fields in that section.
- In the **IPv6** tab, selecting **Static IP** when the IP Address field is empty creates a unique IP address based on the hardware address of the machine.

Migrating Full Disk Encryption to a New Enterprise

One PolicyServer instance may have multiple Enterprise configurations that each represent a business unit or department. Moving to a new Enterprise removes the Endpoint Encryption device from the old Enterprise and adds the Endpoint Encryption device to the new Enterprise within the same PolicyServer instance. The Full Disk Encryption agent may need to move to a new Enterprise when the employee moves to a different department or office location.

Note

For information about changing the PolicyServer that manages the Full Disk Encryption agent, see *Changing the Full Disk Encryption PolicyServer on page 14-23*.

Changing the Enterprise requires access to Full Disk Encryption Recovery Console. For more information, see *Full Disk Encryption PolicyServer Settings on page 14-22*.

WARNING!

Changing the Enterprise requires configuring policies again, recreating groups, and deletes all cached passwords, password history, and audit logs.

Procedure

1. Click **Network Setup**.
2. Select the **PolicyServer** tab.
3. Click **Change Enterprise**.

   The **Change Enterprise** screen appears.

FIGURE 14-6. Recovery Console Change Enterprise

4. Configure the following options:

OPTION	DESCRIPTION
New Server User	Specify an Enterprise Administrator account user name, or the user name of an account with permission to install to the Enterprise or group in the new PolicyServer.

Option	Description
New User Password	Specify the password for the Enterprise Administrator account.
New Server Address	Specify the new PolicyServer IP address or host name.
New Enterprise	Specify the new PolicyServer Enterprise.

5. Click **Save**.

   Full Disk Encryption validates the new PolicyServer information.

6. At the confirmation message, click **OK**.

Changing the Full Disk Encryption PolicyServer

Note

Changing the PolicyServer requires access to Full Disk Encryption Recovery Console. For more information, see *Full Disk Encryption PolicyServer Settings on page 14-22*.

Procedure

1. From the Full Disk Encryption Recovery Console, click the **PolicyServer** tab.
2. Click **Change Server**.
3. At the warning message, click **Yes**.
4. Specify the new server address.
5. Click **Save**.

Full Disk Encryption Recovery Methods

Once a Full Disk Encryption device is fully encrypted, scenarios may exist where you must perform system restoration actions such as recovering a lost Local Administrator password or fixing corrupted Windows environment.

Important

Decrypt the drive before preforming recovery actions. For software encryption, standard data recovery tools (Windows Recovery Disk, ERD Commander, UBCD) cannot access a Full Disk Encryption 5.0 Patch 2 or higher encrypted device.

Data recovery methods are available to Endpoint Encryption Administrator and Authenticator accounts to recover data when the Full Disk Encryption device is not properly functioning.

Note

To decrypt the Full Disk Encryption device, the user must have Endpoint Encryption Enterprise or Group Administrator rights. To allow all users in a group/policy to access the recovery console, enable the following policy:

Management Console	Menu Path
PolicyServer MMC	Go to **Full Disk Encryption** > **Agent** > **Allow User Recovery**.
Control Manager	Create or edit a policy, then go to **Full Disk Encryption** > **Users are allowed to access system recovery utilities**.

Recovery Methods for Full Disk Encryption-protected devices

Recovery Method	Description	Usage Timing
Full Disk Encryption Uninstall	Full Disk Encryption Uninstall removes Full Disk Encryption from the device. Once the uninstall is complete, you may proceed with established recovery action within Windows.	Windows environment is working normally.
Recovery Console	Selecting the Full Disk Encryption **Recovery Console** > **Decrypt Disk** option decrypts the selected hard disk on-the-fly or saves an image of the decrypted hard disk to removable media. **Note** This method is not recommended if Windows is functioning normally.	The Full Disk Encryption preboot loads, but Windows does not.
Repair CD	A bootable CD to decrypt a corrupted drive when the device cannot boot to the Full Disk Encryption preboot. A typical symptom of a corrupted disk is a black screen. **WARNING!** Do not use if Windows is functioning normally.	• The Full Disk Encryption preboot does not load. • Full Disk Encryption cannot authenticate.

Repair CD

The Full Disk Encryption Repair CD is a bootable disk used to fully decrypt a device if the device is unable to boot.

Note

- If there is physical damage to the hard disk drive, the drive may not decrypt completely or may be unusable.
- If there are bad sectors in the hard disk drive, Endpoint Encryption will attempt to skip the bad sectors during decryption, which will lower performance depending upon the amount of bad sectors. If the bad sectors are in critical locations, the hard disk drive may be unusable.
- Make sure that the hard-disk drive cable is properly connected before booting from the Repair CD

Repair CD Options

The following tables explain the options available in the Full Disk Encryption Repair CD. Use the tables to understand how to properly use the features available after booting into the Full Disk Encryption Repair CD.

Basic Repair CD Options

Option	Description
Recovery Console	Launches Recovery Console.
Unlock Device	Unlock a device that has been locked because: • too many unsuccessful login attempts • no communication with PolicyServer for a specified duration **Note** Unlock option is only available when the policy Remote Authentication is set to **Lock Out**.

Option	Description
Reboot Computer	Restarts the device.
Advanced Options	Provides access to advanced options: • Remove Full Disk Encryption Preboot • Erase • Force Decryption

Advanced Repair CD Options

Advanced Option	Description
Remove Preboot	Remove the Full Disk Encryption Preboot authentication screen from the device. **WARNING!** This action cannot be undone, and does not decrypt the drive. Use the Decrypt Disk to remove encryption.
Erase Disk	Remove all data from the drive.
Force Decryption	Decrypt the drive when Full Disk Encryption will not boot.
Return to the Main Menu	Return to the standard CD options.

WARNING!

Data loss may occur if **Advanced Options** are incorrectly used.

Recovering Data with the Repair CD

Use the Repair CD to attempt to recover data from an encrypted device. However, keep in mind a number of considerations before trying to decrypt the Endpoint Encryption device:

- Only use the Repair CD if the Endpoint Encryption device is encrypted, or has begun encryption.
- If the Endpoint Encryption device contains important data, make a backup image before continuing. For instructions, go to http://esupport.trendmicro.com/solution/en-us/1059802.aspx.
- Do not attempt to decrypt a laptop unless it is connected to AC power.
- If the Repair CD does not boot, verify that the Endpoint Encryption device has the latest BIOS version installed. Upgrade the system BIOS if necessary.
- Drive decryption takes at least as long as the initial encryption process.
- If a the Repair CD encounters a bad sector, visible progress may slow down. Allow the Repair CD to continue decryption and contact Trend Micro Support before interrupting the process.

WARNING!

Do not interrupt the process after initiating decryption from the Repair CD. Irreversible data loss may occur.

Decrypting a Disk with the Repair CD

Procedure

1. Power on the endpoint.
   a. Immediately press **F12** (or the appropriate button to enter the boot options).
   b. Insert the Repair CD and select the CD/DVD drive from the boot options screen.

      The device boots into the Repair CD environment.

The Full Disk Encryption Repair CD preboot logon appears.

FIGURE 14-7. Full Disk Encryption Repair CD Preboot

2. Specify the user name and password.
3. Click **Login**.

The Full Disk Encryption Repair CD menu screen appears.

FIGURE 14-8. Full Disk Encryption Repair CD

4. Click **Recovery Console**.

The **Decrypt Disk** screen appears.

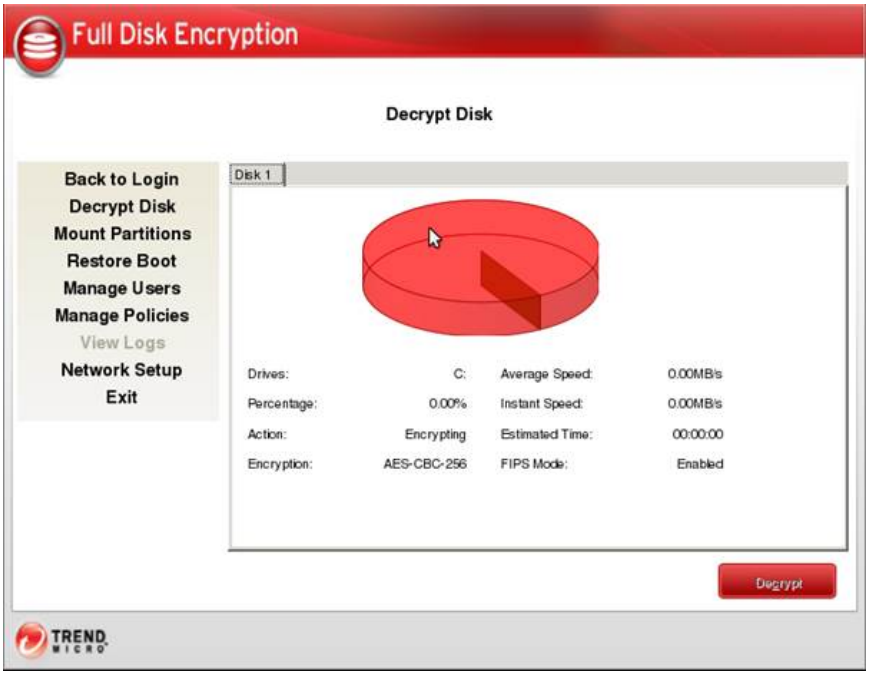


FIGURE 14-9. Recover Console

5. Click **Decrypt** to begin fully decrypting the Endpoint Encryption device.
6. When decryption completes, click **Exit** to return to the Repair CD menu.
7. Click **Reboot Computer** to restart the Endpoint Encryption device.

> **Note**
>
> Remove the Full Disk Encryption Repair CD from the optical drive to start the Endpoint Encryption device normally.

8. Log on to the Full Disk Encryption preboot.

9. Log on to Windows and proceed with the preferred recovery method.

Cleaning Up Full Disk Encryption Files

Decrypting a drive removes MBR changes and other essential elements used to protect the Endpoint Encryption device. For software encryption, decrypt the disk completely before uninstalling Full Disk Encryption. Otherwise, the operating system may have a critical error.

Procedure

- From a command line:
  a. Run `msiexec.exe /X{17BACE08-76BD-4FF5-9A06-5F2FA9EBDDEA}`.
- From Windows:
  a. Open `regedit.exe` within Windows and browse to the following key:

     `HKLM\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall\\{17BACE08-76BD-4FF5-9A06-5F2FA9EBDDEA}`

  b. Browse to the `UninstallString` key:

     Example: `msiexec.exe /x {17BACE08-76BD-4FF5-9A06-5F2FA9EBDDEA}`

  c. Copy the string.

  d. Open **Run...** and paste the string in the **Open** field.

  e. Click **OK**.

     The **Windows Installer** window appears.

  f. At the uninstall confirmation, click **Yes**.

Note

If the **User Account Control** window appears, click **Allow**.

g. When prompted to turn off DrAService, select the second radio button option **Do not close applications** and then click **OK**.

h. If prompted to reboot the endpoint, click **Yes**. Otherwise, manually restart the endpoint.

Patch Management with Full Disk Encryption

Use the Command Line Helper and DAAutoLogin together to run Windows patch management on devices with Full Disk Encryption installed. Command Line Helper creates encrypted values for scripts and DAAutoLogin grants a one-time bypass of the Full Disk Encryption Preboot.

Use DAAutoLogin in various combinations to accomplish different needs. Patches can be pushed out, and followed by a script using DAAutoLogin to send a reboot command for the device to display the Windows GINA for confirmation of successful patching or to another round of patches can be deployed.

DAAutoLogin accepts the following switches:

```
DAAutoLogin <pre-boot Username> <pre-boot Password> [<Domain
Name> <Domain Username> <Domain Password>]
```

Each required value can be passed and separated with a space. Adding in the domain switches allows for Windows authentication.

Note

- Make sure to run both tools on a Full Disk Encryption device.
- Both tools are available in the tools folder of the zip file received from Trend Micro. For assistance, contact Trend Micro Support.

Using Command Line Helper

Adminstrators can use the Command Line Helper and DAAutoLogin together for seamless Full Disk Encryption patch management. Command Line Helper enables

encrypted values to pass via the installation script to the Full Disk Encryption preboot. `DAAutoLogin` grants a one-time bypass of the Full Disk Encryption preboot.

Procedure

1. Copy `CommandLineHelper.exe` locally to Full Disk Encryption device.

   Example: Copy `CommandLineHelper.exe` to the `C:\` drive.

2. Open command prompt and type `C:\CommandLineHelper.exe`, then specify the user name or password.

   For example, use the following command if the user name is SMSUser:

   ```
   C:\CommandLineHelper.exe SMSUser
   ```

3. Press ENTER to display the encrypted value.

4. Run Command Line Helper again for the second encrypted value. If the first time was the user name, run it again to encrypt the password.

Patching Process for Full Disk Encryption

Procedure

1. Push patches to targeted Full Disk Encryption devices.

2. Follow up with a script using `DAAutoLogin`.

3. Send a reboot command for the Full Disk Encryption device to load Windows GINA for confirmation of successful patching or to push another round of patches.

Chapter 15

Encryption Management for Third-Party Products

A key feature of Full Disk Encryption is the ability to manage third-party encryption products. The Endpoint Encryption agents fully integrate with the encryption solutions built into the host operating systems.

Topics include:

- *About Encryption Management Agents on page 15-2*
- *Encryption Management Agent Policy Limitations on page 15-3*
- *Encryption Management for Microsoft BitLocker on page 15-4*
- *Encryption Management for Apple FileVault on page 15-10*

About Encryption Management Agents

The following table explains the two Full Disk Encryption agents for third-party product encryption management.

Note

For information about all available Endpoint Encryption agents, see *Endpoint Encryption Agents on page 1-16*.

TABLE 15-1. Encryption Management Agents

AGENT	DESCRIPTION
Encryption Management for Microsoft BitLocker	The Endpoint Encryption Full Disk Encryption agent for Microsoft Windows environments that simply need to enable Microsoft BitLocker on the hosting endpoint. Use the Encryption Management for Microsoft BitLocker agent to secure endpoints with Trend Micro full disk encryption protection in an existing Windows infrastructure. For more information, see *About Full Disk Encryption on page 14-2*.
Encryption Management for Apple FileVault	The Endpoint Encryption Full Disk Encryption agent for Mac OS environments that simply need to enable Apple FileVault on the hosting endpoint. Use the Encryption Management for Apple FileVault agent to secure endpoints with Trend Micro full disk encryption protection in an existing Mac OS infrastructure. For more information, see *About Full Disk Encryption on page 14-2*.

Encryption Management Agent Policy Limitations

The following table explains the policy limitations for Encryption Management for Apple FileVault and Encryption Management for Microsoft BitLocker. To use all policies, install the Full Disk Encryption agent instead.

Note

Encryption Management for Apple FileVault and Encryption Management for Microsoft BitLocker do not require authentication and are not affected by authentication policies. Client, login, password, and authentication policies, or allowing the user to uninstall the Endpoint Encryption agent software only affects the Full Disk Encryption and File Encryption agents.

The following table explains the policies affecting each agent. Use it to understand the policy limitations of third-party agents.

Table 15-2. Policies Affecting Full Disk Encryption Agents

Policy	Full Disk Encryption	Encryption Management for Apple FileVault	Encryption Management for Microsoft BitLocker
Allow User Recovery	●		
Allow User to Uninstall	●		
Encrypt Device	●	●	●
Account Lockout Action	●		
Account Lockout Period	●		
Dead Man Switch	●		

Policy	Full Disk Encryption	Encryption Management for Apple FileVault	Encryption Management for Microsoft BitLocker
Device Locked Action	●		
Device Killed Action	●	●	●
Failed Login Attempted Allowed	●		
If Found	●		
Legal Notice	●	●	●
Lock Device Time Delay	●		
Preboot Bypass	●		
Support Info	●		
Token Authentication	●		
Authentication Methods Allowed	●		
Sync Interval	●	●	●

Encryption Management for Microsoft BitLocker

Encryption Management for Microsoft BitLocker manages BitLocker Drive Encryption™ (BDE) for endpoints running Microsoft Windows 7 Ultimate and Enterprise editions and Windows 8 Pro and Enterprise editions. Encryption Management for Microsoft BitLocker is designed to protect data by providing

encryption for entire volumes. By default, BDE uses the AES encryption algorithm in CBC mode with a 128-bit or 256-bit key.

Viewing Encryption Status

Procedure

1. Click the Full Disk Encryption icon ( ).
   - For Windows, go to the system tray.
   - For Mac OS, go to the menu bar.
2. Open the **Encryption Status** tab.
3. See *Understanding Encryption Status on page 15-6* for details.

Understanding Encryption Status

The **Encryption Status** tab provides details about the encrypted drives, the types of encryption, and the ratio that the drive is encrypted or not encrypted. See the figure and description below for more information.

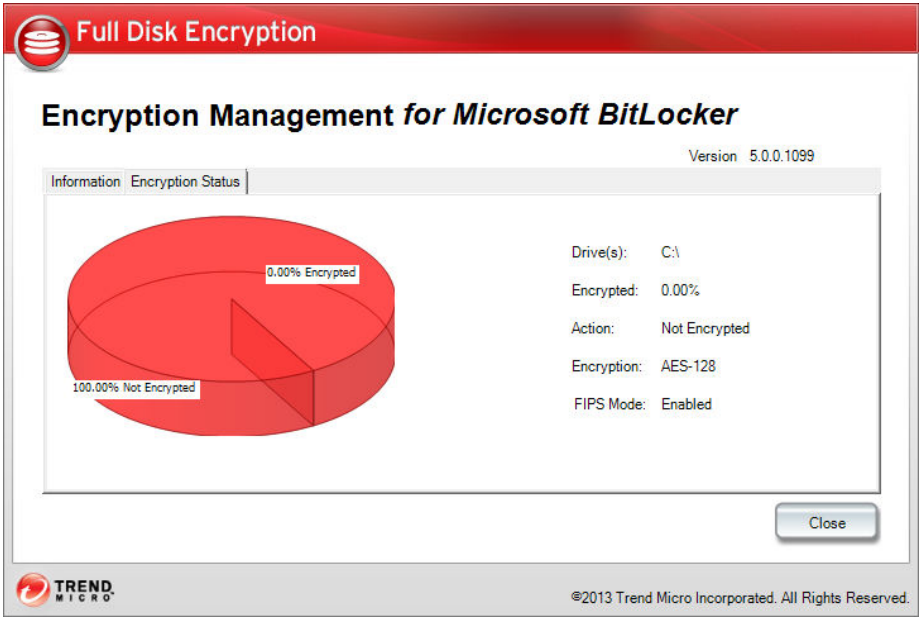


TABLE 15-3. Device Encryption Status

ITEM	DESCRIPTION
Pie Chart	The pie chart represents the ratio that the hard disk is encrypted and not encrypted.
Drive	The hard disk with the agent installed.
Encrypted	The percentage that the drive is encrypted.
Action	The current encryption status.

Item	Description
Encryption	The type of encryption deployed on the endpoint. **Note** Encryption Management for Apple FileVault and Encryption Management for Microsoft BitLocker always use software-based encryption.
FIPS mode	Whether FIPS is enabled. For information about FIPS, see *About FIPS on page 1-9*.

Understanding Agent Information

The **Information** tab provides detailed information about the user account, Endpoint Encryption device, and policy synchronization. See the figure and description below for more information.

TABLE 15-4. Agent Information

LABEL	DESCRIPTION
TMEE user name	The Endpoint Encryption account used to log on the Endpoint Encryption device. This is different from the Windows logon.
Device ID	The unique ID that identifies the agent and endpoint to PolicyServer.
Operating system	The operating system and version currently installed on the endpoint.
Computer name	The endpoint computer name to identify it on the network.
Last sync	The timestamp for the last policy synchronization to PolicyServer. For details about synchronizing policies, see *Synchronizing Policies From the Menu Bar on page 15-15*.
Sync with PolicyServer	Forces an immediate policy update.

Synchronizing Policies with PolicyServer

There are two ways to synchronize policies with PolicyServer. For information about policies affecting Encryption Management for Microsoft BitLocker devices, see *Encryption Management Agent Policy Limitations on page 15-3*.

- *Synchronizing Policies From the Menu Bar on page 15-15*
- *Synchronizing Policies from the About Screen on page 15-9*

Automatic Policy Synchronization

The following list explains the events that initiate policy synchronization between all Endpoint Encryption agents and PolicyServer.

- After the operating system loads and the Endpoint Encryption agent service starts

Note

For information about Endpoint Encryption services, see *Endpoint Encryption Services on page C-1*.

- When the Full Disk Encryption preboot starts (Full Disk Encryption only)
- The time duration of the **Sync Interval** policy elapses

Open the **About** screen in the Endpoint Encryption agent to manually synchronize policies.

Note

Endpoint Encryption device actions initiate after the Endpoint Encryption agent receives policy updates.

Synchronizing Policies from the About Screen

For information about policies limitations affecting the Encryption Management for Microsoft BitLocker agent, see *Encryption Management Agent Policy Limitations on page 15-3*.

Procedure

1. Make sure that the Endpoint Encryption device has network access.
2. Click the agent icon ( ).
3. Select **About Full Disk Encryption** to open the agent menu.
4. Open the **Information** tab.
5. Click **Sync with PolicyServer**.

If successful, all Endpoint Encryption policies are up-to-date.

Synchronizing Policies From the System Tray

Procedure

1. Make sure that the Endpoint Encryption device has network access.
2. Click the agent icon ( ).
3. Select **Sync with PolicyServer**.

If successful, all Endpoint Encryption policies are up-to-date.

Encryption Management for Apple FileVault

Encryption Management for Apple FileVault manages Apple Filevault™ to encrypt the entire OS X startup volume, which typically includes the home directory, abandoning the disk image approach. Encryption Management for Apple FileVault manages encryption using Apple FileVault with the user's password as the encryption pass phrase. Encryption Management for Apple FileVault uses the AES-XTS mode of AES with 128 bit blocks and a 256 bit key to encrypt the disk, as recommended by NIST. Only unlock-enabled users can start or unlock the drive. Once unlocked, other users may also use the computer until it is shut down.

Note

Mac OS local accounts or mobile accounts are able to initiate encryption on Mac OS X Mountain Lion or above. Other Mac OS user account types will be unable to initiate encryption.

To create a mobile account for Active Directory on your Mac, see *Creating a Mobile Account for Active Directory on Mac OS on page 15-16*.

Viewing Encryption Status

Procedure

1. Click the Full Disk Encryption icon ( ).

- For Windows, go to the system tray.
- For Mac OS, go to the menu bar.

2. Open the **Encryption Status** tab.
3. See *Understanding Encryption Status on page 15-6* for details.

Understanding Encryption Status

The **Encryption Status** tab provides details about the encrypted drives, the types of encryption, and the ratio that the drive is encrypted or not encrypted. See the figure and description below for more information.

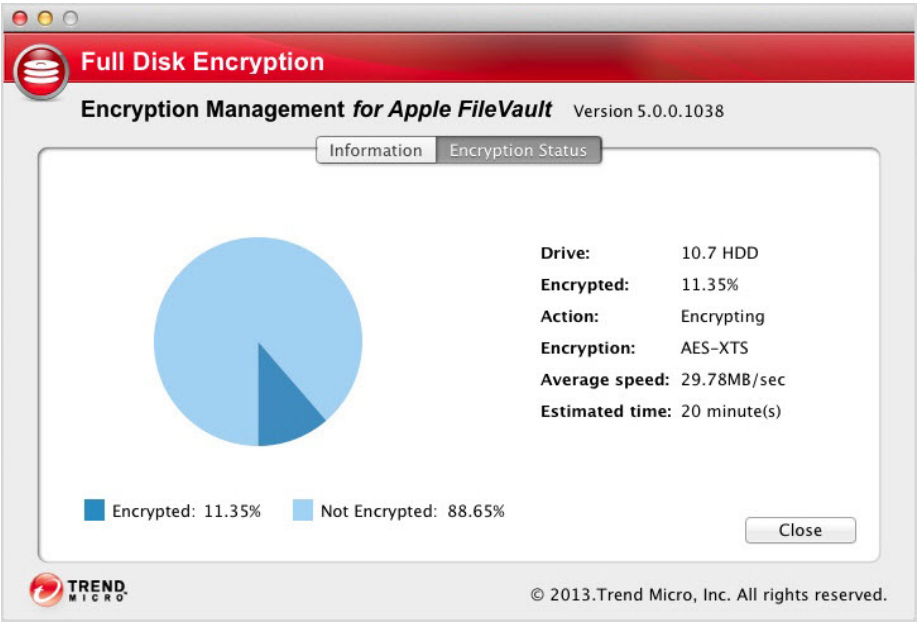


TABLE 15-5. Device Encryption Status

ITEM	DESCRIPTION
Pie Chart	The pie chart represents the ratio that the hard disk is encrypted and not encrypted.
Drive	The hard disk with the agent installed.
Encrypted	The percentage that the drive is encrypted.
Action	The current encryption status.
Average speed	The rate (MB/second) that the drive is encrypting or decrypting.
Estimated time	The amount of time until the drive is 100% encrypted or decrypted.

Understanding Agent Information

The **Information** tab provides detailed information about the user account, Endpoint Encryption device, and policy synchronization. See the figure and description below for more information.

TABLE 15-6. Agent Information

LABEL	DESCRIPTION
TMEE user name	The Endpoint Encryption account used to log on the Endpoint Encryption device. This is different from the Windows logon.
Device ID	The unique ID that identifies the agent and endpoint to PolicyServer.

LABEL	DESCRIPTION
Operating system	The operating system and version currently installed on the endpoint.
Computer Name	The endpoint computer name to identify it on the network.
Enterprise	The Enterprise name of the PolicyServer managing agent policies.
Last sync	The timestamp for the last policy synchronization to PolicyServer. For details about synchronizing policies, see *Synchronizing Policies From the Menu Bar on page 15-15*.
Synchronize now	Forces an immediate policy update.

Synchronizing Policies with PolicyServer

There are two ways to synchronize policies with PolicyServer. For information about policies affecting Encryption Management for Apple FileVault devices, see *Encryption Management Agent Policy Limitations on page 15-3*.

- *Synchronizing Policies from the About Screen on page 15-15*
- *Synchronizing Policies From the Menu Bar on page 15-15*

Automatic Policy Synchronization

The following list explains the events that initiate policy synchronization between all Endpoint Encryption agents and PolicyServer.

- After the operating system loads and the Endpoint Encryption agent service starts

  Note

  For information about Endpoint Encryption services, see *Endpoint Encryption Services on page C-1*.

- When the Full Disk Encryption preboot starts (Full Disk Encryption only)

- The time duration of the **Sync Interval** policy elapses

Open the **About** screen in the Endpoint Encryption agent to manually synchronize policies.

Note

Endpoint Encryption device actions initiate after the Endpoint Encryption agent receives policy updates.

Synchronizing Policies from the About Screen

For information about policies limitations affecting Encryption Management for Apple FileVault agents, see *Encryption Management Agent Policy Limitations on page 15-3*.

Procedure

1. Make sure that the Endpoint Encryption device has network access.
2. Click the agent icon ( ).
3. Select **About Full Disk Encryption** to open the agent menu.
4. Open the **Information** tab.
5. Click **Synchronize now**.

If successful, all Endpoint Encryption policies are up-to-date.

Synchronizing Policies From the Menu Bar

Procedure

1. Make sure that the Endpoint Encryption device has network access.
2. Click the agent icon ( ).
3. Select **Synchronize Policies**.

If successful, all Endpoint Encryption policies are up-to-date.

Creating a Mobile Account for Active Directory on Mac OS

Mac OS local accounts or mobile accounts are able to initiate encryption on Mac OS X Mountain Lion or above. Other Mac OS user account types will be unable to initiate encryption.

If a Mac OS account other than a local account or mobile account attemps to initate encryption, the following notification appears:

The following task shows how to create a mobile account for your Mac OS account to bypass this issue.

Procedure

1. Go to **System Preferences...** in the Apple menu.

   The **System Preferences** window appears.

2. Select **User Groups** under the **System** section.

3. Click the lock icon in the lower left corner.

4. Click **Create...** next to **Mobile account**.
5. On the following screens, select any personal settings, and click **Create** to proceed from one screen to the next.
6. When prompted, enter your Active Directory password and click **OK**.

Your mobile account has been created. You may now use this mobile account to initate encryption.

Part V

Advanced Management and Technical Support

Chapter 16

Advanced Enterprise Features

In environments primarily managed by Control Manager, use PolicyServer MMC for advanced options including certain reports, logs, and maintenance. Endpoint Encryption keeps comprehensive logs and generates reports about events and updates. Use logs and reports to assess policy controls and to verify component updates. Enterprise maintenance provides a way to purge inactive users, inactive devices, and logs matching specific criteria from the database.

Topics include:

- *Enterprise Maintenance on page 16-2*
- *Restoring Deleted Users and Devices on page 16-10*
- *Enterprise Log Events on page 16-11*
- *Enterprise Reports on page 16-15*

Enterprise Maintenance

PolicyServer records system activities (changes made to policies, successful authentication attempts, devices locked due to too many unsuccessful logon attempts) and maintains those records as log events. You can generate reports on an as-needed or scheduled basis.

PolicyServer MMC has a variety of built-in reports to verify device encryption status, user/device activity, and PolicyServer integrity.

Note

Only Enterprise Administrator accounts can use reports.

Purge Inactive Users

An inactive user is a user account that has not logged on any Endpoint Encryption devices for a specified time period.

The Enterprise Maintenance node in PolicyServer MMC allows you to purge inactive Endpoint Encryption users and devices, then view the purged user or device log events in a report. Additionally, you can set specific criteria to purge the log database at a specific time or on a schedule.

WARNING!

Purged user accounts cannot authenticate to any Endpoint Encryption devices.

Purging Inactive Users

Procedure

1. Log on to PolicyServer MMC.
2. Expand the Enterprise, then go to **Enterprise Maintenance**.
3. Click **Purge Inactive Users**.

4. Specify the number of days to purge all user accounts that have not logged on a device for period of time.

> **Note**
> Specify a range between 7 and 999 days.

5. Click **Purge**.
6. Click **OK** to confirm the purge.

Anything meeting the purge criteria is deleted from the database.

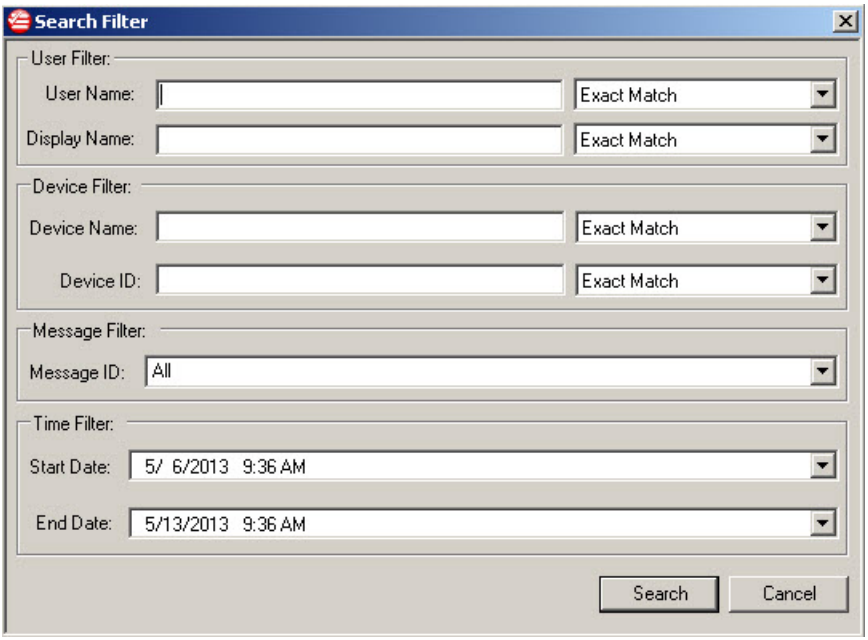
Viewing the Purge Inactive Users Log Event

Procedure

1. Log on to PolicyServer MMC.
2. Click **Enterprise Log Events**.

   All current log events appear in the right pane.
3. At the bottom of the page, click **Filter**.

The **Search Filter** window appears.



4. From the **Message ID** drop-down list, select **200105, Inactive Users Removed from Enterprise**.
5. Click **Search**.

   All log event matching the specified criteria appear.
6. Double-click a log event.

   The **Log Record** window appears displaying all log data for the selected event.

Viewing the Purge Inactive Users Report

Procedure

1. Log on to PolicyServer MMC.

2. Expand the Enterprise, then go to **Enterprise Maintenance**.
3. Click **Enterprise Scheduled Reports**.
4. Do one of the following in the right pane:
   - To view the report in tabular format, double-click **Purged Inactive Users**.
   - To view the report in HTML format, right-click a report and then select **Display Report**.

Purge Inactive Devices

An inactive device is any Endpoint Encryption device that has not been logged on for a specified time period.

The Enterprise Maintenance node in PolicyServer MMC allows you to purge inactive Endpoint Encryption users and devices, then view the purged user or device log events in a report. Additionally, you can set specific criteria to purge the log database at a specific time or on a schedule.

WARNING!

Users cannot log on to purged Endpoint Encryption devices.

Purging Inactive Devices

Procedure

1. Log on to PolicyServer MMC.
2. Expand the Enterprise, then go to **Enterprise Maintenance**.
3. Click **Purge Inactive Devices**.
4. Specify the number of days to purge all user accounts that have not logged on any Endpoint Encryption device for period of time.
5. Click **Purge**.

6. Click **OK** to confirm the purge.

Anything meeting the purge criteria is deleted from the database.

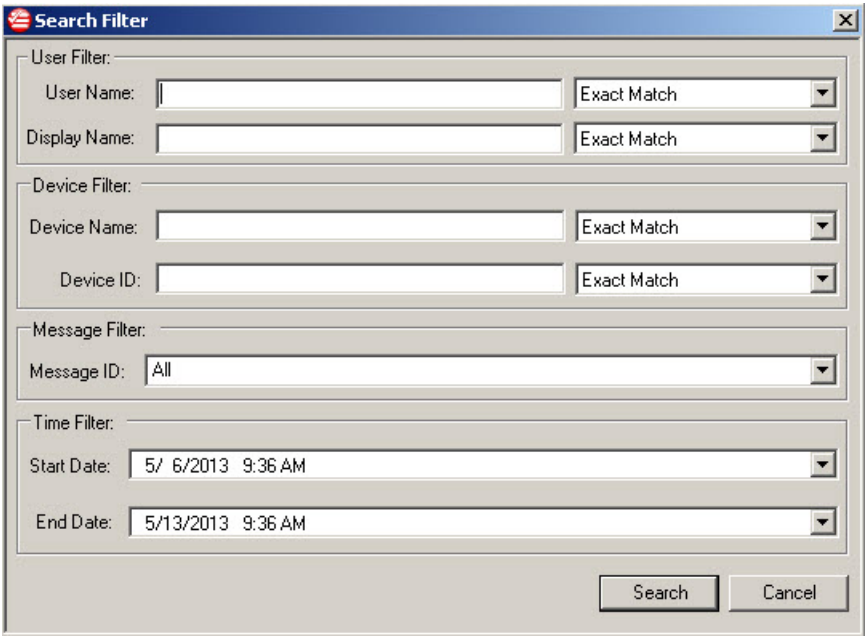
Viewing the Purge Inactive Devices Log Event

Procedure

1. Log on to PolicyServer MMC.
2. Click **Enterprise Log Events**.

   All current log events appear in the right pane.
3. At the bottom of the page, click **Filter**.

   The **Search Filter** window appears.



4. From the **Message ID** drop-down list, select **200303, Inactive Devices Removed from Enterprise**.
5. Click **Search**.

   All log event matching the specified criteria appear.
6. Double-click a log event.

   The **Log Record** window appears displaying all log data for the selected event.

Viewing the Purged Inactive Devices Report

Procedure

1. Log on to PolicyServer MMC.
2. Expand the Enterprise, then go to **Enterprise Maintenance**.
3. Click **Enterprise Scheduled Reports**.
4. Do one of the following in the right pane:
   - To view the report in tabular format, double-click **Purged Inactive Devices**.
   - To view the report in HTML format, right-click a report and then select **Display Report**.

The report appears.

Log Purge

The Enterprise Maintenance node in PolicyServer MMC allows you to purge inactive Endpoint Encryption users and devices, then view the purged user or device log events in a report. Additionally, you can set specific criteria to purge the log database at a specific time or on a schedule.

Purging the Log Database

Procedure

1. Log on to PolicyServer MMC.
2. Expand the Enterprise, then go to **Enterprise Maintenance**.
3. Click **Purge Log Database**.
4. Select **Enable scheduled purge**.
5. Configure the following options:

Option	Description
Purge logs older than <x> days	Specify the number of days to keep logs. Anything older than the specified number of days is purged.
Interval type	Select to purge the log database daily, weekly, biweekly, or monthly.
Start date	Select when to start the scheduled purge.
Time	Specify the time of day for the scheduled purge.

6. Click **Apply**.
7. At the confirmation message, click **OK**.

Anything meeting the purge criteria is deleted from the database.

Viewing the Log Database Purge Event

Note

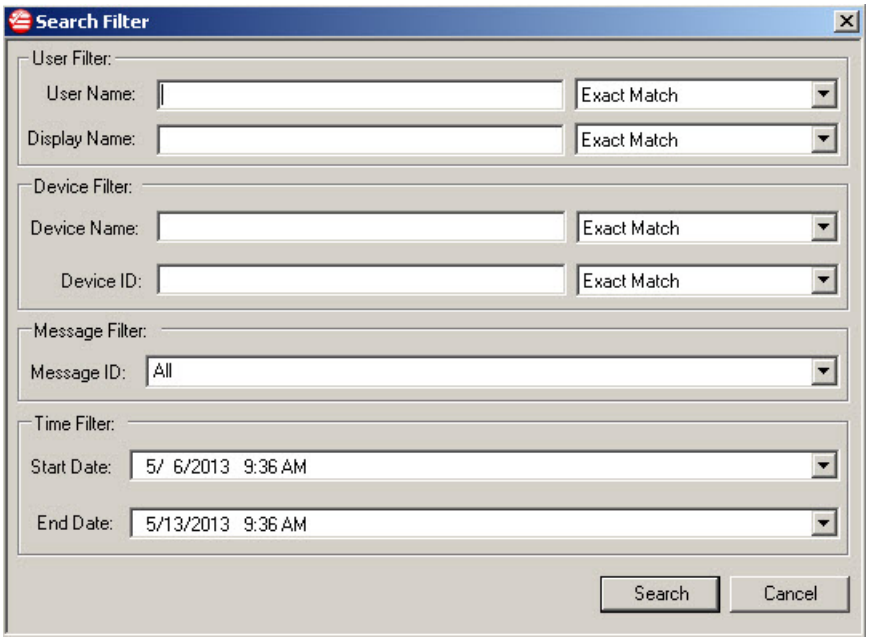
The log database purge only occurs once the schedule criteria has been met. If no data matches the search criteria, verify that the schedule is correctly set. For details, see *Purging the Log Database on page 16-8*.

Procedure

1. Log on to PolicyServer MMC.
2. Click **Enterprise Log Events**.

   All current log events appear in the right pane.
3. At the bottom of the page, click **Filter**.

   The **Search Filter** window appears.



4. From the **Message ID** drop-down list, select **103104, Log data purged from Enterprise**.
5. Click **Search**.

   All log event matching the specified criteria appear.
6. Double-click a log event.

The **Log Record** window appears displaying all log data for the selected event.

Restoring Deleted Users and Devices

Use the PolicyServer MMC Recycle Bin to restore a deleted Endpoint Encryption user or device. All deleted Endpoint Encryption users and devices are stored in the Recycle Bin at the Enterprise level. Groups do not have a recycle bin. Restoring a deleted Endpoint Encryption user or device does not add it back to previously assigned policy groups.

Restoring a Deleted User

For both Control Manager and PolicyServer MMC environments, use the PolicyServer MMC Recycle Bin node to restore a deleted Endpoint Encryption user.

Procedure

1. Log on to PolicyServer MMC.
2. Expand the **Recycle Bin**.
3. Open **Deleted Users**.

   The right pane loads all deleted users.
4. Right-click the user account, then select **Restore User**.

   The user is added back to the Enterprise, but does not belong to any policy groups.

Restoring a Deleted Device

For both Control Manager and PolicyServer MMC environments, use the PolicyServer MMC Recycle Bin node to restore a deleted Endpoint Encryption device.

Procedure

1. Log on to PolicyServer MMC.
2. Expand the Enterprise, then go to **Enterprise Maintenance**.
3. Expand the **Recycle Bin**.
4. Open **Deleted Devices**.

   The right pane loads all deleted Endpoint Encryption devices.
5. Right-click the Endpoint Encryption device and select **Restore Device**.

   The Endpoint Encryption device is added back to the Enterprise, but does not belong to any policy groups.

Enterprise Log Events

PolicyServer records log events using predefined criteria including access attempts, system errors, modifications to users or groups, policy changes, and compliance issues. Managing log events and reports allows Enterprise Administrator and Group Administrator accounts to search for specific log events and report about server and client security.

Managing Log Events

Only messages within the last seven (7) days automatically display. Use the filter to view older log events. It is useful to search the logs using the message ID. For example, searching for the message ID "400008" displays all "Device Encryption Complete" messages. For information about message IDs, see *PolicyServer Message IDs on page B-1*.

Procedure

1. Log on to PolicyServer MMC.
2. Select a log event level:

- For enterprise-level logs, expand **Enterprise Log Events**.
- For group-level logs, go to **Group Name** > **Log Events.**

The log window appears. All log events for the past seven (7) days automatically display.

3. Double-click any log to view details.
4. Click **Filter** to search the log file:
   a. Specify the search criteria.
   b. Select the date range.
   c. Click **Search**.
5. Click **Refresh** to update log data.
6. Click **Previous** or **Next** to navigate through log data.

Alerts

You can customize alert criteria using predefined security levels to help categorize alerts. Send log events to individual or multiple email recipients by setting alerts at the enterprise or group.

Note

For information about message IDs, see *PolicyServer Message IDs on page B-1*.

Setting PolicyServer Alerts

Procedure

1. Log on to PolicyServer MMC.
2. Select a log event level:

- For enterprise-level logs, expand **Enterprise Log Events**.
- For group-level logs, go to **Group Name** > **Log Events.**

The log window appears. All log events for the past seven (7) days automatically display.

3. Click **Alerts**.
4. In the right pane whitespace, right-click and select **Add**.

   The **Edit Alert** window appears.
5. Specify an **Alert Name**.
6. Select the severity of logs that trigger alerts.
7. Select the message IDs to trigger alerts.
8. Specify one email address per line to send the alert notification.
9. Select whether to send alerts based on the number of events in a set time.
10. Click **Done**.

Enabling PolicyServer to relay SMS and Email Delivery

This function only works for PolicyServer installed on Windows Server 2008 or Windows Server 2008 R2.

Procedure

1. Log on to the Windows server.
2. Open **Server Manager**.
3. Go to **Features** > **Add Features**.
4. Mark **SMTP Server**.

   The **Add role services and features required for SMTP Server** window appears.
5. Click **Add Required Role Services**.

6. Click **Next**.
7. Click **Next** again.
8. Click **Install**.

   The Web Server IIS and SMTP Server installs.
9. Click **Close**.
10. Go to **Start** > **Administrative Tools** > **Internet Information Services (IIS) 6.0 Manager**.

    IIS 6.0 Manager opens.
11. Expand **ServerName (local device)**.
12. Right-click **[SMTP Virtual Server #1]** and click **Properties**.

    Note

    Mark **Enable logging** for future troubleshooting.
13. Go to **Access** > **Connection...** and select **Only the list below**, and then click **Add...**.
14. In the **IP address** field, specify `127.0.0.1`, then click **OK**.

    Note

    Repeat to specify all IP addresses on local server
15. Click **OK**.
16. Go to **Delivery** > **Advanced...** and specify the **Masquerade domain** in the following format: `psproxy.<domain>.<com/org>`.
17. Click **OK** twice to close the **SMTP Virtual Server #1 Properties** window.
18. Go to **Enterprise Policies** > **PolicyServer** > **PDA** > **Email**.
19. Open **SMTP ServerName**, specify `127.0.0.1`, then click **Apply**.

Configuring Advanced Premise

For best results, create a Sender Policy Framework (SPF) DNS entry. To create an SPF record in other DNS Servers (BIND), consult the vendor documentation.

Procedure

1. On a Windows DNS Server, open **DNS Management Console**.
2. Right-click the forward lookup zone for the domain, and select **Other New Records**.
3. Scroll down and select **TEXT (TXT)**.
4. Leave **Record Name** blank, and specify:

   ```
   v=spf1 ip4:<external_PolicyServer_IP_address> -all
   ```

5. Click **OK**.

Enterprise Reports

PolicyServer records log events using predefined criteria including access attempts, system errors, modifications to users or groups, policy changes, and compliance issues. Managing log events and reports allows Enterprise Administrator and Group Administrator accounts to search for specific log events and report about server and client security.

Enterprise Administrator accounts can generate reports on an as-needed or scheduled basis. PolicyServer MMC has a variety of built-in reports to verify Endpoint Encryption device encryption status, Endpoint Encryption user or device activity, and PolicyServer integrity.

Note

Only the Enterprise Administrator can use reports.

Report Options

The following table describes the options available for different reports. Right-click a report to view available options.

Report Option	Description
Clear	Remove all information displayed in the results window; it does not delete the information.
Display Error	View a description of the error causing the report to be invalid.
Display Report	View the report.
Next Page	Move to the next page of the search items.
Previous Page	Return to the previous page of the search items.
Refresh	Update the status of a submitted report.
Remove Report	Delete the report.
Schedule Report	Set up a schedule for the report to be run on a specific day or time.
Submit Report	Generate the selected report.

Report Icons

The following table describes the icons that may appear next to a report.

Icon	Description
	Standard reports can be submitted on an as-needed basis to view statistics and other usage metrics.
	Alert reports notify Enterprise Administrator accounts about potential security issues.

Report Types

Reports make log information easier to understand. PolicyServer MMC separates reports into two distinct categories:

- **Standard reports**

  Standard reports capture specific log information in a report format. Submit standard reports on an as-needed basis.

- **Alert reports**

  Alert reports send an alert notification to the Enterprise Administrator and capture the security incident in a report.

Note

Only the Enterprise Administrator can use reports.

Standard Reports

Use the following table to understand which standard reports are available to generate as needed.

TABLE 16-1. List of Standard Reports

REPORT NAME	DESCRIPTION
Device Encryption Status	Reports the encryption status for all Endpoint Encryption devices in the Enterprise.
Device Operating System Count	Reports all device operating systems and the count for each.
Device Version Count	Reports all Endpoint Encryption device versions and the count for each.
Devices By Last Sync Date	Reports all Endpoint Encryption devices that synchronized with PolicyServer in the last x amount of days.

Report Name	Description
Devices Not Communicating	Reports the Endpoint Encryption devices that have not communicated in the last <X> days.
Devices with Last Logged in User	Reports all Endpoint Encryption devices and the last user to have authenticated to it.
Enterprise Available License	Reports the days left in the license, available Endpoint Encryption devices and users, and count of used devices and users.
Enterprise Inactive User	Reports all Endpoint Encryption users who have not logged on to Endpoint Encryption devices for a specified time period.
Enterprise User Activity	Reports total Endpoint Encryption devices, total Endpoint Encryption users, and PolicyServer MMC user count along with Endpoint Encryption device activity.
Full Disk Encryption Device Not 100% Encrypted	Reports all Endpoint Encryption devices in the last <X> days that started encrypting but did not finish.
User Activity By Day	Reports the Endpoint Encryption user activity within <X> amount of days for the given user.
Users Added	Reports all Endpoint Encryption users added within the last <X> days.
Users Never Logged into a Device	Reports all Endpoint Encryption users who have never authenticated to any Endpoint Encryption device.

Running Standard Reports

Standard reports capture specific log information in a report format. Submit standard reports on an as-needed basis.

Procedure

1. Right-click the desired report, then select **Submit Report**.
2. Specify report parameters if required, then click **Apply**.

The report appears.

3. To view the report, go to **Enterprise Reports** > **Enterprise Submitted Reports**.

Alert Reports

Use the following table to understand when PolicyServer generates an alert report.

Alert Name	Description
Consecutive Failed Logon Attempts on a Single Device	An alert is sent when multiple, consecutive authentication attempts to any Endpoint Encryption device have all failed.
Log Integrity Alert	An alert is sent when there is an indication that the PolicyServer logs have been tampered with.
Policy Tampering Alert	An alert is sent when PolicyServer detects that an entity has tampered with policies.
Primary and Secondary Action Enforced	An alert is sent when PolicyServer has had no connection, and the primary or secondary action has been enforced.

Running Alert Reports

To view the generated report, go to **Enterprise Reports** > **Enterprise Submitted Reports**.

Procedure

1. Right-click the desired alert report, then select **Configure Alerts**.

   The **Alerts Configuration** window appears.

2. Specify the **SMTP Server Address** and the **Sender** that will process the outgoing email message.

3. Click **Apply**.

4. Right-click the desired report and select **Submit Alert**.

Displaying Reports

Note

Only the Enterprise Administrator can use reports.

Procedure

1. Go to **Enterprise Reports** > **Enterprise Submitted Reports**.
2. Right-click desired report, then select **Display Report**.

   The report appears.
3. To export the report, click the **Save** icon and then select **Excel** or **Acrobat (PDF) file**.

Scheduling Reports

Schedule a report to automatically run at any specific date and time.

Procedure

1. Open **Enterprise Reports**.
2. Right-click the desired report, then select **Schedule Report**.

   The **Report Parameters** window displays.
3. Specify the report parameters, then click **Apply**.

   The **Report Scheduler** displays.
4. Specify the report interval, date and time, then click **Apply**.

The report is scheduled.

5. To view scheduled reports, go to **Enterprise Reports** > **Enterprise Scheduled Reports**.

Displaying Report Errors

Sometimes an error prevents a report from correctly running. To view PolicyServer message IDs, see *PolicyServer Message IDs on page B-1*.

Procedure

1. Go to **Enterprise Reports** > **Enterprise Submitted Reports**.
2. Right-click the report with an error, then select **Display Error**.

   The report error message displays.

Chapter 17

Maintenance and Technical Support

The following topics describe how to understand the Maintenance Agreement, find solutions online, use the Support Portal, contact Trend Micro, and find additional resources.

Topics include:

- *Maintenance Agreement on page 17-2*
- *Troubleshooting Resources on page 17-5*
- *Contacting Trend Micro on page 17-7*
- *Other Resources on page 17-8*

Maintenance Agreement

A Maintenance Agreement is a contract between your organization and Trend Micro, regarding your right to receive technical support and product updates in consideration for the payment of applicable fees. When you purchase a Trend Micro product, the License Agreement you receive with the product describes the terms of the Maintenance Agreement for that product.

A license to the Trend Micro software usually includes the right to product updates, pattern file updates, and basic technical support ("Maintenance") for one (1) year from the date of purchase only. After the first year, Maintenance must be renewed on an annual basis at Trend Micro's then-current Maintenance fees.

If the Maintenance Agreement expires, scanning can still occur, but the product cannot be updated, even manually. Also, you will not be entitled to receive technical support from Trend Micro.

Typically, ninety (90) days before the Maintenance Agreement expires, you will be alerted of the pending discontinuance. You can update your Maintenance Agreement by purchasing renewal maintenance from your reseller, Trend Micro sales, or on the Trend Micro Online Registration URL:

Online Registration System

Renewing the Maintenance Agreement

Trend Micro or an authorized reseller provides technical support, downloads, and program updates for one (1) year to all registered users, after which renewal maintenance must be purchased.

If the Maintenance Agreement expires, basic operations are maintained; however, new users and devices cannot be added to PolicyServer, either through the PolicyServer MMC, agent installations, or Control Manager. To prevent this, renew the Maintenance Agreement as soon as possible.

For customers upgrading, the existing license is accepted until the expiration.

Procedure

1. To renew the Maintenance Agreement, do one of the following:
   - To purchase renewal maintenance, contact the same vendor from whom the product was purchased. A Maintenance Agreement extending protection for another year will be sent by post to the primary company contact listed in your Registration Profile.
   - To view or modify the company's Registration Profile, log on at the Trend Micro online registration website: https://olr.trendmicro.com/registration/
2. To view the Registration Profile, specify the Logon ID and password created when the product was first registered with Trend Micro (as a new customer), and then click **Login**.
3. To update the environment with the new Activation Code, see *Activating the New Product License on page 17-3*.

Trial License

You can install and evaluate Endpoint Encryption for a limited 30-day trial period. During PolicyServer installation, the Enterprise database and Enterprise Administrator account are created. PolicyServer functions normally with all client applications, unlimited devices, and up to 100 users for the 30-day trial period. After 30 days, contact Trend Micro Technical Sales to receive a license file. Endpoint Encryption user accounts and devices function normally after the trial period expires.

Activating the New Product License

A free 30-day trial license is available to install and evaluate Endpoint Encryption. If activating from the trial license, make sure to upgrade to the full version before the license expires.

Procedure

1. Log on to the server where PolicyServer is currently installed.

2. Go to the folder containing the PolicyServer program files and open the `Tools` folder.
3. Run `TMEE_License_Renewal.exe`.

   The **License Renewal Tool** opens.
4. Under **Renew License**, click **Renew Online** to access the Trend Micro registration website.

   After completing the registration, Trend Micro sends an email message containing the Activation Code.
5. Specify the new Activation Code for the product.
6. Click **Activate**.
7. At the confirmation message, click **OK** to continue.
8. Click **Exit**.

The updated Endpoint Encryption product license is immediately available.

Viewing the Product License

Use PolicyServer MMC to view the current license status.

Procedure

1. Log on to PolicyServer MMC.
2. Right-click the Enterprise and select **Activation/License**.

   The **Registration Information** screen appears.
3. Review the following options.

OPTION	DESCRIPTION
Activation Code	For a full licence, the Activation Code appears. For other license types, the name of the license appears.

Option	Description
Start Date	The date that the license was activated.
Expiration Date	The date that the license must be renewed. After a license expires, existing Endpoint Encryption users can still log on to Endpoint Encryption devices, but no new Endpoint Encryption devices or users can be added to the Enterprise.
Number of Devices	The number of Endpoint Encryption devices allowed in the license.
Number of Installed Devices	The number of Endpoint Encryption devices currently configured in the Enterprise.
Number of Users	The total number of Endpoint Encryption users allowed in the license.
Number of Created Users	The number of Endpoint Encryption users currently added to the Enterprise.
Activation Period in Days	The number of days left until the license expires.

4. Click **Close**.

Product Maintenance

From time to time, Trend Micro might release a patch for a reported known issue or an upgrade that applies to the product. To find out whether there are any patches available, visit: http://downloadcenter.trendmicro.com

Patches are dated. If there are available patches, open the readme file to determine whether the patch is applicable. If so, follow the upgrade instructions in the readme.

Troubleshooting Resources

Before contacting technical support, consider visiting the following Trend Micro online resources.

Trend Community

To get help, share experiences, ask questions, and discuss security concerns with other users, enthusiasts, and security experts, go to:

http://community.trendmicro.com/

Using the Support Portal

The Trend Micro Support Portal is a 24x7 online resource that contains the most up-to-date information about both common and unusual problems.

Procedure

1. Go to http://esupport.trendmicro.com.
2. Select a product or service from the appropriate drop-down list and specify any other related information.

   The **Technical Support** product page appears.
3. Use the **Search Support** box to search for available solutions.
4. If no solution is found, click **Submit a Support Case** from the left navigation and add any relevant details, or submit a support case here:

   http://esupport.trendmicro.com/srf/SRFMain.aspx

   A Trend Micro support engineer investigates the case and responds in 24 hours or less.

Security Intelligence Community

Trend Micro cybersecurity experts are an elite security intelligence team specializing in threat detection and analysis, cloud and virtualization security, and data encryption.

Go to http://www.trendmicro.com/us/security-intelligence/index.html to learn about:

- Trend Micro blogs, Twitter, Facebook, YouTube, and other social media

- Threat reports, research papers, and spotlight articles
- Solutions, podcasts, and newsletters from global security insiders
- Free tools, apps, and widgets.

Threat Encyclopedia

Most malware today consists of "blended threats" - two or more technologies combined to bypass computer security protocols. Trend Micro combats this complex malware with products that create a custom defense strategy. The Threat Encyclopedia provides a comprehensive list of names and symptoms for various blended threats, including known malware, spam, malicious URLs, and known vulnerabilities.

Go to http://www.trendmicro.com/vinfo to learn more about:

- Malware and malicious mobile code currently active or "in the wild"
- Correlated threat information pages to form a complete web attack story
- Internet threat advisories about targeted attacks and security threats
- Web attack and online trend information
- Weekly malware reports.

Contacting Trend Micro

In the United States, Trend Micro representatives are available by phone, fax, or email:

Address	Trend Micro, Inc. 10101 North De Anza Blvd., Cupertino, CA 95014
Phone	Toll free: +1 (800) 228-5651 (sales) Voice: +1 (408) 257-1500 (main)
Fax	+1 (408) 257-2003
Website	http://www.trendmicro.com

Email address	support@trendmicro.com

- Worldwide support offices:

  http://www.trendmicro.com/us/about-us/contact/index.html

- Trend Micro product documentation:

  http://docs.trendmicro.com

Speeding Up the Support Call

To improve problem resolution, have the following information available:

- Steps to reproduce the problem
- Appliance or network information
- Computer brand, model, and any additional hardware connected to the endpoint
- Amount of memory and free hard disk space
- Operating system and service pack version
- Endpoint client version
- Serial number or activation code
- Detailed description of install environment
- Exact text of any error message received.

Other Resources

In addition to solutions and support, there are many other helpful resources available online to stay up to date, learn about innovations, and be aware of the latest security trends.

TrendEdge

Find information about unsupported, innovative techniques, tools, and best practices for Trend Micro products and services. The TrendEdge database contains numerous documents covering a wide range of topics for Trend Micro partners, employees, and other interested parties.

See the latest information added to TrendEdge at:

http://trendedge.trendmicro.com/

Download Center

From time to time, Trend Micro may release a patch for a reported known issue or an upgrade that applies to a specific product or service. To find out whether any patches are available, go to:

http://www.trendmicro.com/download/

If a patch has not been applied (patches are dated), open the Readme file to determine whether it is relevant to your environment. The Readme file also contains installation instructions.

TrendLabs

TrendLabs℠ is a global network of research, development, and action centers committed to 24x7 threat surveillance, attack prevention, and timely and seamless solutions delivery. Serving as the backbone of the Trend Micro service infrastructure, TrendLabs is staffed by a team of several hundred engineers and certified support personnel that provide a wide range of product and technical support services.

TrendLabs monitors the worldwide threat landscape to deliver effective security measures designed to detect, preempt, and eliminate attacks. The daily culmination of these efforts is shared with customers through frequent virus pattern file updates and scan engine refinements.

Learn more about TrendLabs at:

http://cloudsecurity.trendmicro.com/us/technology-innovation/experts/index.html#trendlabs

Appendices

Appendices

Appendix A

Introducing Trend Micro™ Control Manager™

Trend Micro Control Manager is a central management console that manages Trend Micro products and services at the gateway, mail server, file server, and corporate desktop levels. Administrators can use the policy management feature to configure and deploy product settings to managed products and endpoints. The Control Manager web-based management console provides a single monitoring point for antivirus and content security products and services throughout the network.

Control Manager enables system administrators to monitor and report on activities such as infections, security violations, or virus/malware entry points. System administrators can download and deploy update components throughout the network, helping ensure that protection is consistent and up to date. Example update components include virus pattern files, scan engines, and anti-spam rules. Control Manager allows both manual and pre-scheduled updates. Control Manager allows the configuration and administration of products as groups or as individuals for added flexibility.

This chapter contains the following topics:

- *Control Manager Standard and Advanced on page A-3*
- *Introducing Control Manager Features on page A-3*
- *Control Manager Architecture on page 3-3*
- *Registering Endpoint Encryption to Control Manager on page A-8*

- *Understanding User Access on page A-9*
- *Understanding the Product Directory on page A-15*
- *Downloading and Deploying New Components on page A-38*
- *Using Logs on page A-65*
- *Understanding Reports on page A-68*

Control Manager Standard and Advanced

Control Manager is available in two versions: Standard and Advanced. Control Manager Advanced includes features that Control Manager Standard does not. For example, Control Manager Advanced supports a cascading management structure. This means the Control Manager network can be managed by a parent Control Manager Advanced server with several child Control Manager Advanced servers reporting to the parent Control Manager Advanced server. The parent server acts as a hub for the entire network.

Note

Control Manager Advanced supports the following as child Control Manager servers:

- Control Manager 6.0 Advanced
- Control Manager 5.5 Advanced
- Control Manager 5.0 Advanced

Control Manager 5.0/5.5/6.0 Standard servers cannot be child servers.

For a complete list of all features Standard and Advanced Control Manager servers support see the *Trend Micro Control Manager* documentation.

Introducing Control Manager Features

Trend Micro designed Control Manager to manage antivirus and content security products and services deployed across an organization's local and wide area networks.

TABLE A-1. Control Manager Features

FEATURE	DESCRIPTION
Policy management	System administrators can use policies to configure and deploy product settings to managed products and endpoints from a single management console.

Feature	Description
Centralized configuration	Using the Product Directory and cascading management structure, these functions allow you to coordinate virus-response and content security efforts from a single management console. These features help ensure consistent enforcement of your organization's virus/malware and content security policies.
Proactive outbreak prevention	With Outbreak Prevention Services (OPS), take proactive steps to secure your network against an emerging virus/ malware outbreak.
Secure communication infrastructure	Control Manager uses a communications infrastructure built on the Secure Socket Layer (SSL) protocol. Depending on the security settings used, Control Manager can encrypt messages or encrypt them with authentication.
Secure configuration and component download	These features allow you to configure secure web console access and component download.
Task delegation	System administrators can give personalized accounts with customized privileges to Control Manager web console users. User accounts define what the user can see and do on a Control Manager network. Track account usage through user logs.
Command Tracking	This feature allows you to monitor all commands executed using the Control Manager web console. Command Tracking is useful for determining whether Control Manager has successfully performed long-duration commands, like virus pattern update and deployment.
On-demand product control	Control managed products in real time. Control Manager immediately sends configuration modifications made on the web console to the managed products. System administrators can run manual scans from the web console. This command system is indispensable during a virus/malware outbreak.

FEATURE	DESCRIPTION
Centralized update control	Update virus patterns, antispam rules, scan engines, and other antivirus or content security components to help ensure that all managed products are up to date.
Centralized reporting	Get an overview of the antivirus and content security product performance using comprehensive logs and reports. Control Manager collects logs from all its managed products; you no longer need to check the logs of each individual product.

Control Manager Architecture

Trend Micro Control Manager provides a means to control Trend Micro products and services from a central location. This application simplifies the administration of a corporate virus/malware and content security policy. The following table provides a list of components Control Manager uses.

TABLE A-2. Control Manager Components

COMPONENT	DESCRIPTION
Control Manager server	Acts as a repository for all data collected from the agents. It can be a Standard or Advanced Edition server. A Control Manager server includes the following features: • An SQL database that stores managed product configurations and logs Control Manager uses the Microsoft SQL Server database (`db_ControlManager.mdf`) to store data included in logs, Communicator schedule, managed product and child server information, user account, network environment, and notification settings. • A web server that hosts the Control Manager web console • A mail server that delivers event notifications through email messages Control Manager can send notifications to individuals or groups of recipients about events that occur on the Control Manager network. Configure Event Center to send notifications through email messages, Windows event log, MSN Messenger, SNMP, Syslog, pager, or any in-house/industry standard application used by your organization to send notification. • A report server, present only in the Advanced Edition, that generates antivirus and content security product reports A Control Manager report is an online collection of figures about security threat and content security events that occur on the Control Manager network.

Component	Description
Trend Micro Management Communication Protocol	MCP handles the Control Manager server interaction with managed products that support the next generation agent. MCP is the new backbone for the Control Manager system. MCP agents install with managed products and use one/two way communication to communicate with Control Manager. MCP agents poll Control Manager for instructions and updates.
Trend Micro Management Infrastructure	Handles the Control Manager server interaction with older managed products. The Communicator, or the Message Routing Framework, is the communication backbone of the older Control Manager system. It is a component of the Trend Micro Management Infrastructure (TMI). Communicators handle all communication between the Control Manager server and older managed products. They interact with Control Manager 2.x agents to communicate with older managed products.
Control Manager 2.x Agents	Receives commands from the Control Manager server and sends status information and logs to the Control Manager server The Control Manager agent is an application installed on a managed product server that allows Control Manager to manage the product. Agents interact with the managed product and Communicator. An agent serves as the bridge between managed product and communicator. Therefore, install agents on the same computer as managed products.
Web-based management console	Allows an administrator to manage Control Manager from virtually any computer with an Internet connection and Windows™ Internet Explorer™ The Control Manager management console is a web-based console published on the Internet through the Microsoft Internet Information Server (IIS) and hosted by the Control Manager server. It lets you administer the Control Manager network from any computer using a compatible web browser.

Component	Description
Widget Framework	Allows an administrator to create a customized dashboard to monitor the Control Manager network.

Registering Endpoint Encryption to Control Manager

Before registering the Endpoint Encryption server to a Control Manager server, you must ensure that both the server and the Control Manager server belong to the same network segment.

Procedure

1. Click **Administration** > **Control Manager Settings**.

   Note

   Control Manager uses the name specified in the Host name field to identify the Endpoint Encryption server. The Host name appears in the Product Directory of Control Manager.

   The **Control Manager Settings** screen displays.

2. Under **Connection settings**, type the name of the Endpoint Encryption server in the **Entity display name** field.

3. Under **Control Manager Server Settings** specify the following:

   a. Type the Control Manager server IP address or host name in the Server FQDN or IP address field.

   b. Type the port number that the MCP agent uses to communicate with Control Manager.

   c. If you have Control Manager security set to medium (HTTPS and HTTP communication is allowed between Control Manager and the MCP agent of managed products), select **Connect through HTTPS**.

d. If your network requires authentication, type the user name and password for your IIS server in the **Username** and **Password** fields.

e. If you use a NAT device, select **Enable two-way communication port forwarding** and type the NAT device's IP address and port number in **IP address** and **port number**.

Refer to the *Trend Micro Control Manager Administrator's Guide* for more information about managing products in Control Manager.

4. From the Control Manager management console, click **Products**.

   The **Product Directory** screen appears.

5. The Endpoint Encryption server appears in the Product Directory tree.

Understanding User Access

Control Manager access control consists of the following four sections.

TABLE A-3. Control Manager User Access Options

SECTION	DESCRIPTION
My Account	The **My Account** screen contains all the account information that Control Manager has for a specific user. The information on the **My Account** screen varies from user to user.

Section	Description
User Accounts	The **User Accounts** screen displays all Control Manager users. The screen also provides the options for users to create and maintain Control Manager user accounts. Use these functions to define clear areas of responsibility for users by restricting access rights to certain managed products and limiting what actions users can perform on the managed products. The functions are: • Execute • Configure • Edit Directory
User Roles	The **User Roles** screen displays all Control Manager user roles. The screen also provides the options for users to create and maintain Control Manager user roles. User roles define which areas of the Control Manager web console a user can access.
User Groups	The **User Groups** screen contains Control Manager groups and provides options for creating groups. Control Manager uses groups as an easy method to send notifications to a number of users without having to select the users individually. Control Manager groups do not allow administrators to create a group that shares the same access rights.

Note

Assign users with different access rights and privileges to permit the delegation of certain management tasks without compromising security.

Control Manager User Access with Endpoint Encryption User Access

Endpoint Encryption user access is similar to Control Manager user access. Administrators can control which parts of the Endpoint Encryption web console users can access (Power User, Operator, or Administrator).

All user accounts created in Control Manager have administrator access to any managed product to which the user has access. This creates a problem if an administrator wants to restrict a user's access to Power User on the Endpoint Encryption server while allowing access to Control Manager.

MCP Heartbeat

To monitor the status of managed products, MCP agents poll Control Manager based on a schedule. Polling occurs to indicate the status of the managed product and to check for commands to the managed product from Control Manager. The Control Manager web console then presents the product status. This means that the managed product's status is not a real-time, moment-by-moment reflection of the network's status. Control Manager checks the status of each managed product in a sequential manner in the background. Control Manager changes the status of managed products to offline when a fixed period of time elapses without a heartbeat from the managed product.

Active heartbeats are not the only means Control Manager determines the status of managed products. The following also provide Control Manager with the managed product's status:

- Control Manager receives logs from the managed product. Once Control Manager receives any type of log from the managed product successfully, this implies that the managed product is working fine.
- In two-way communication mode, Control Manager actively sends out a notification message to trigger the managed product to retrieve the pending command. If server connects to the managed product successfully, it also indicates that the product is working fine and this event counts as a heartbeat.
- In one-way communication mode, the MCP agent periodically sends out query commands to Control Manager. This periodical query behavior works like a heartbeat and is treated as such by Control Manager.

The MCP heartbeats implement in the following ways:

- **UDP**: If the product can reach the server using UDP, this is the lightest weight, fastest solution available. However, this does not work in NAT or firewall environments. In addition, the transmitting client cannot verify that the server does indeed receive the request.
- **HTTP/HTTPS**: To work under a NAT or firewall environment, a heavyweight HTTP connection can be used to transport the heartbeat

Control Manager supports both UDP and HTTP/HTTPS mechanisms to report heartbeats. Control Manager server finds out which mode the managed product applies during the registration process. A separate protocol handshake occurs between both parties to determine the mode.

Aside from simply sending the heartbeat to indicate the product status, additional data can upload to Control Manager along with the heartbeat. The data usually contains managed product activity information to display on the console.

Using the Schedule Bar

Use the schedule bar on the **Agent Communication Schedule** screen to display and set Communicator schedules. The bar has 24 slots, each representing the hours in a day.

The slots with clock icons denote working status or the hours that the Agent/ Communicator sends information to the Control Manager server. White slots indicate idle time. Define working or idle hours by toggling specific slots.

You can specify at most three consecutive periods of inactivity. The sample schedule bar below shows only two inactive hours:

FIGURE A-1. Schedule bar

The active periods specified by the bar are from 0:00 to 7:00, 8:00 to 4:00 PM, and from 6:00 P.M. to midnight.

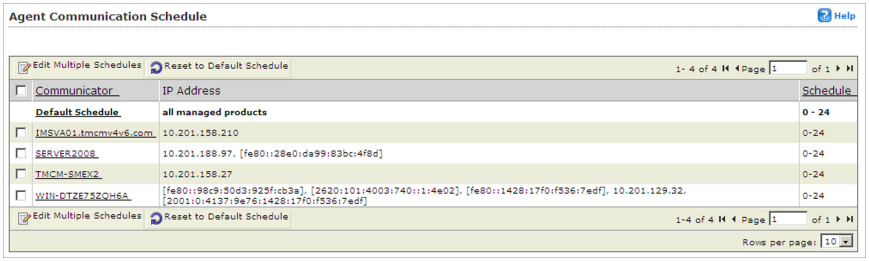
Setting an Agent Communication Schedule for a Managed Product

Procedure

1. Open the Control Manager console.

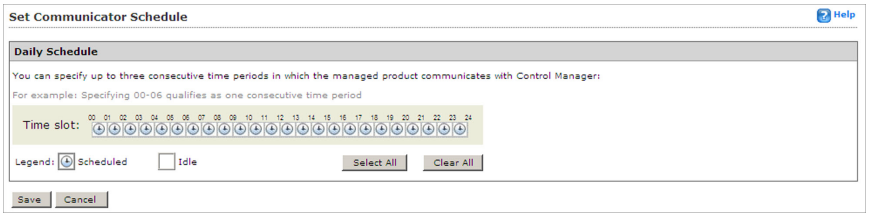
2. Navigate to **Administration** > **Settings** > **Agent Communication Schedule**.

   The **Agent Communication Schedule** screen appears.



3. Select the managed product schedule to modify.

   The **Set Communicator Schedule** screen appears.



4. Define the schedule. Specify a new time or use the default setting:

   - To specify a new setting, change the appropriate time slots in the schedule bar and then click **Save**

   - To use the default setting, return to the **Agent Communication Schedule** screen. Select the schedule to apply and click **Reset to Default Schedule**

Determining the Right Heartbeat Setting

When choosing a heartbeat setting, balance between the need to display the latest managed product status information and the need to manage system resources. The default setting is satisfactory for most situations, however consider the following points when you customize the heartbeat setting:

TABLE A-4. Heartbeat Recommendations

HEARTBEAT FREQUENCY	RECOMMENDATION
Long-interval Heartbeats (above 60 minutes)	The longer the interval between heartbeats, the greater the number of events that may occur before Control Manager reflects the communicator status in the Control Manager web console. For example, if a connection problem with a Communicator is resolved between heartbeats, it then becomes possible to communicate with a Communicator even if the status appears as (inactive) or (abnormal).
Short-interval Heartbeats (below 60 minutes)	Short intervals between heartbeats present a more up-to-date picture of your network status at the Control Manager server. However, this is a bandwidth-intensive option.

Configuring the Agent Communicator Heartbeat

Use the **Communication Time-out** screen to define the frequency and maximum delay times (in minutes) for the Control Manager server and agent communication.

Note

The agent/communicator heartbeat setting only applies to Communicators for managed products directly controlled by the Control Manager server. Child Control Manager server agent/communicators use pre-defined values:

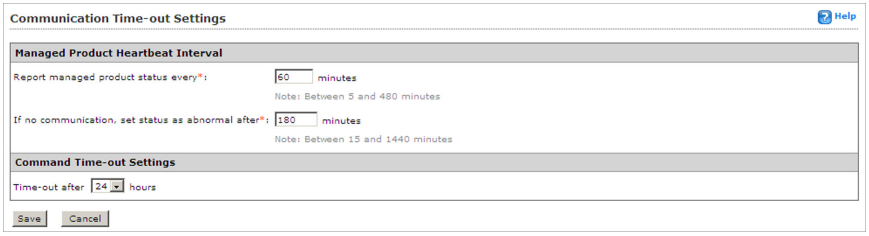
Frequency: 3 minutes

Maximum delay: 5 minutes

Procedure

1. Open the Control Manager console.
2. Navigate to **Administration** > **Settings** > **Communication Time-out Settings**.

   The **Communication Time-out** screen appears.



3. On the working area, leave the default values or specify new settings for the following:
   - **Report managed product status every**: Defines how often the managed product responds to Control Manager server messages. Valid values are between 5 to 480 minutes
   - **If no communication, set status as abnormal after**: Specifies how long Control Manager waits for a response from the managed product before changing its web console status to (inactive). Valid values are between 15 and 1440 minutes.

   Note

   The **If no communication, set status as abnormal after** value must be at least triple the **Report managed product status every** value.

4. Click **Save**.

Understanding the Product Directory

A managed product is a representation of an antivirus, content security, or web protection product in the Product Directory. Managed products display as icons (for

example, (SMEX) or (PW)) in the Control Manager web console Product Directory section. These icons represent Trend Micro antivirus, content security, and web protection products. Control Manager supports dynamic icons, which change with the status of the managed product. See your managed product's documentation for more information on the icons and associated statuses for your managed product.

Indirectly administer the managed products either individually or by groups through the Product Directory. The following table lists the menu items and buttons on the Product Directory screen.

TABLE A-5. Product Directory Options

MENU ITEM	DESCRIPTION
Advanced Search	Click this menu item to specify search criteria to perform a search for one or more managed products.
Configure	After selecting a managed product/ directory, move the cursor over this menu item and select a task, to log on to a web-based console using SSO or to configure a managed product.
Tasks	After selecting a managed product/ directory, move the cursor over this menu item and select a task, to perform a specific function (such as deploying the latest components) to a specific managed product or child server or groups of managed products or child servers. Initiate a task from a directory and Control Manager sends requests to all managed products belonging to that directory.
Directory Management	Click this button to open the **Directory Management** screen. From the screen, move entities/directories (by dragging and dropping them) or create new directories.
Buttons	

Menu Item	Description
Search	Click this button, after typing a managed product's name, to perform a search for the specified managed product.
Status	Click this button, after selecting a managed product/directory, to obtain status summaries about the managed product or managed products found in the directory.
Folder	Click this button, after selecting a directory, to obtain status summaries about the managed products and the managed product endpoints found in the directory.

Note

Managed products belonging to child Control Manager servers cannot have tasks issued to them by the parent Control Manager server.

Product Directory Structure Recommendations

Trend Micro recommends the following when planning your Product Directory structure for managed products and child servers:

Table A-6. Considerations when Grouping Managed Products or Child Servers

Structure	Description
Company network and security policies	If different access and sharing rights apply to the company network, group managed products and child servers according to company network and security policies.
Organization and function	Group managed products and child servers according to the company's organizational and functional division. For example, have two Control Manager servers that manage the production and testing groups.

Structure	Description
Geographical location	Use geographical location as a grouping criterion if the location of the managed products and child servers affects the communication between the Control Manager server and its managed products or child servers.
Administrative responsibility	Group managed products and child servers according to system or security personnel assigned to them. This allows group configuration.

The Product Directory provides a user-specified grouping of managed products which allows you to perform the following for administering managed products:

- Configuring managed products
- Request products to perform a Scan Now (if this command is supported)
- View product information, as well as details about its operating environment (for example, product version, pattern file and scan engine versions, operating system information, and so on)
- View product-level logs
- Deploy virus pattern, scan engine, anti-spam rule, and program updates

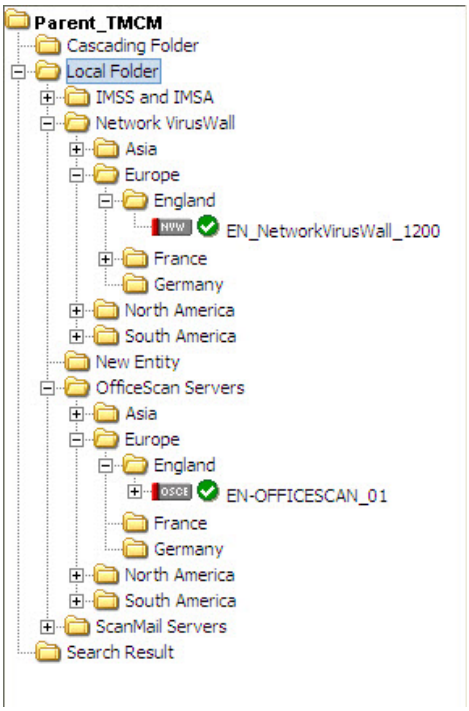
Plan this structure carefully, because the structure also affects the following:

Table A-7. Considerations for the Structure

Consider	Effect
User access	When creating user accounts, Control Manager prompts for the segment of the Product Directory that the user can access. For example, granting access to the root segment grants access to the entire directory. Granting access to a specific managed product only grants access to that specific product.

CONSIDER	EFFECT
Deployment planning	Control Manager deploys update components (for example, virus pattern files, scan engines, anti-spam rules, program updates) to products based on Deployment Plans. These plans deploy to Product Directory folders, rather than individual products. A well-structured directory therefore simplifies the designation of recipients.
Outbreak Prevention Policy (OPP) and Damage Control Template (DCT) deployments	OPP and DCT deployments depend on Deployment Plans for efficient distribution of Outbreak Prevention Policy and cleanup tasks.

A sample Product Directory appears below:



Managed products identify the registered antivirus or content security product, as well as provide the connection status.

Note

All newly registered managed products usually appear in the New Entity folder regardless of the agent type.

TABLE A-8. Managed Product Icons

ICON	DESCRIPTION
EMAN	InterScan eManager
OSCE	OfficeScan Corporate Edition
SPNT	ServerProtect Information Server
	ServerProtect Domain
NT	ServerProtect for Windows (Normal Server)

Icon	Description
	ServerProtect for NetWare (Normal Server)
	InterScan Messaging Security Suite
	InterScan Web Security Suite
	InterScan VirusWall for Windows
	InterScan VirusWall for UNIX
	ScanMail for Microsoft Exchange
	ScanMail for Lotus Notes
	Network VirusWall
	NetScreen Global PRO Firewall
	Managed Product connection status icon

Arrange the Product Directory using the Directory Manager. Use descriptive folder names to group your managed products according to their protection type or the Control Manager network administration model.

Accessing the Product Directory

Use the Product Directory to administer managed products registered to the Control Manager server.

Note

Viewing and accessing the folders in the Product Directory depends on the Account Type and user account access rights.

Procedure

- Click **Products** from the main menu.

The **Product Directory** screen appears.

Manually Deploying Components Using the Product Directory

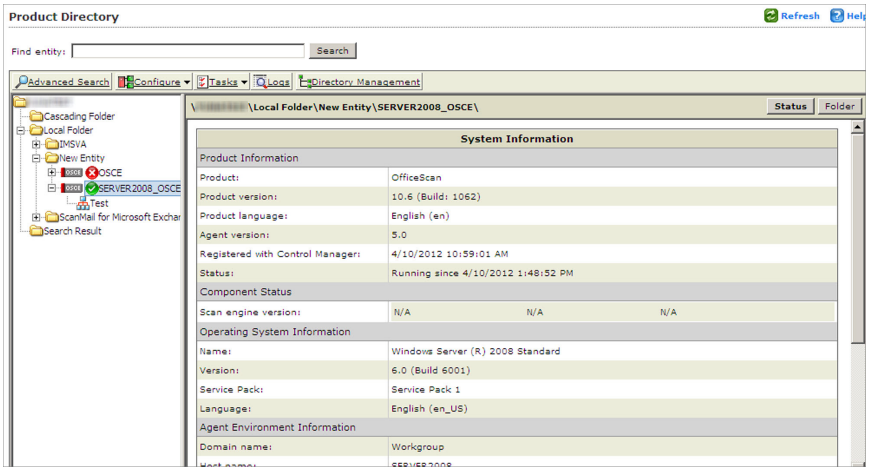
Manual deployments allow you to update the virus patterns, spam rules, and scan engines of your managed products on demand. Use this method of updating components during virus outbreaks.

Download new components before deploying updates to a specific managed product or groups of managed products.

Procedure

1. Click **Products** from the main menu.

   The **Product Directory** screen appears.



2. Select a managed product or directory from the Product Directory.

   The managed product or directory highlights.

3. Move the cursor over **Tasks** from the Product Directory menu.

4. Select **Deploy <component>** from the drop-down menu.
5. Click **Deploy Now** to start the manual deployment of new components.
6. Monitor the progress through the **Command Tracking** screen.
7. Click the Command Details link on the **Command Tracking** screen to view details for the Deploy Now task.

Viewing Status Summaries for Managed Products

The Product Status screen displays the Antivirus, Content Security, and Web Security summaries for all managed products present in the Product Directory tree.

There are two ways to view the managed products status summary:

- Through the dashboard using the Threat Detection Results widget (found on the Summary tab)
- Through the Product Directory

Accessing Through the Dashboard

Procedure

- Upon opening the Control Manager web console, the **Summary** tab on the Dashboard displays the summary of the entire Control Manager network. This summary is identical to the summary provided by the Product Status tab in the Product Directory Root folder.

Accessing Through the Product Directory

Procedure

1. Click **Products** from the main menu.

   The **Product Directory** screen appears.

2. From the Product Directory tree, select the desired folder or managed product.
   - If you click a managed product, the Product Status tab displays the managed product's summary.
   - If you click the Root folder, New entity, or other user-defined folder, the Product Status tab displays Antivirus, Content Security, and Web Security summaries.

Note

By default, the Status Summary displays a week's worth of information ending with the day of your query. You can change the scope to **Today**, **Last Week**, **Last Two Weeks**, or **Last Month** in the Display summary for list.

Configuring Managed Products

Depending on the product and agent version you can configure the managed product from the managed product's web console or through a Control Manager-generated console.

Procedure

1. Click **Products** on the main menu.

   The **Product Directory** screen appears.

2. Select the desired managed product from the Product Directory tree.

   The product status appears in the right-hand area of the screen.

3. Move the cursor over **Configure** in the Product Directory menu.
4. Select one of the following:
   - **Configuration Replication**: The **Configuration Settings** screen appears.

   a. Select the folder to which the selected managed product's settings replicate from the Product Directory tree.

   b. Click **Replicate**.

The selected managed product's settings replicate to the target managed products.

- **<Managed Product Name> Single Sign On**: The managed product's web console or Control Manager-generated console appears.

a. Configure the managed product from the web console.

Note

For additional information about configuring managed products, refer to the managed product's documentation.

Issuing Tasks to Managed Products

Use the Tasks menu item to invoke available actions to a specific managed product. Depending on the managed product, all or some of the following tasks are available:

- Deploy engines
- Deploy pattern files/cleanup templates
- Deploy program files
- Enable or disable Real-time Scan
- Start Scan Now

Deploy the latest spam rule, pattern, or scan engine to managed products with outdated components. To successfully do so, the Control Manager server must have the latest components from the Trend Micro ActiveUpdate server. Perform a manual download to ensure that current components are already present in the Control Manager server.

Procedure

1. Click **Products** from the main menu.

   The **Product Directory** screen appears.

2. Select the managed product or directory to issue a task.

3. Move the cursor over **Tasks**.
4. Click a task from the list. Monitor the progress through Command Tracking. Click the **Command Details** link at the response screen to view command information.

Querying and Viewing Managed Product Logs

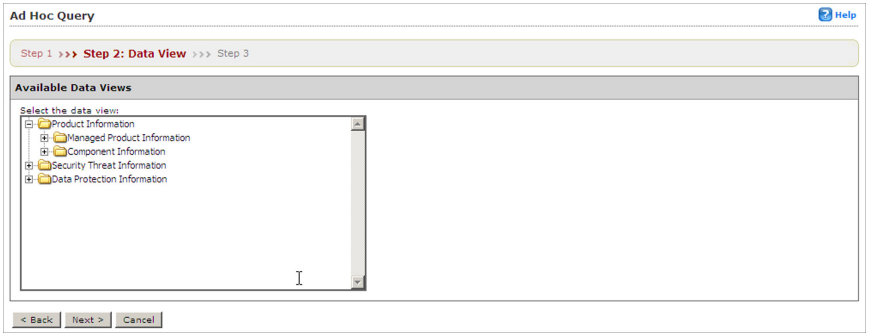
Use the Logs tab to query and view logs for a group or a specific managed product.

Procedure

1. Click **Products** from the main menu.

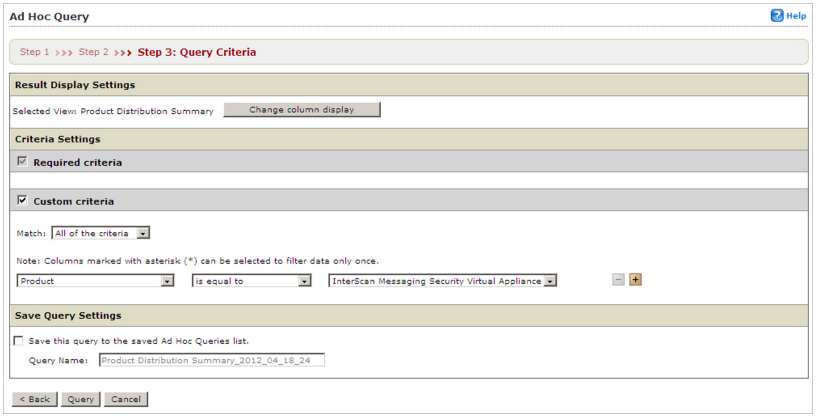
   The **Product Directory** screen appears.
2. Select the desired managed product or folder from the Product Directory.
3. Move the cursor over **Logs** in the Product Directory menu.
4. Click **Logs** from the drop-down menu.

   The **Ad Hoc Query > Step 2: Select Data View** screen appears.



5. Specify the data view for the log:
   a. Select the data to query from the Available Data Views area.
   b. Click **Next**.

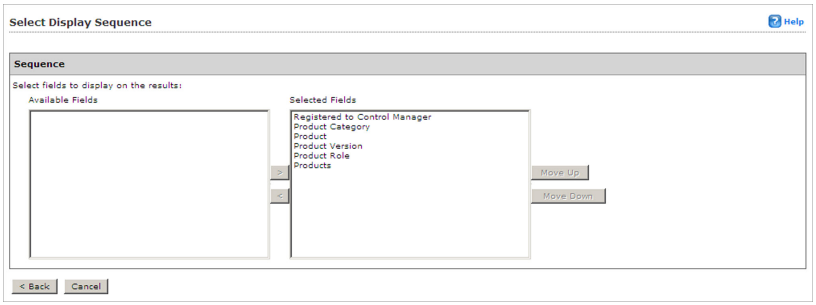
The **Ad Hoc Query > Step 3: Query Criteria** screen appears.



6. Specify the data to appear in the log and the order in which the data appears. Items appearing at the top of the Selected Fields list appear as the left most column of the table. Removing a field from Selected Fields list removes the corresponding column from the Ad Hoc Query returned table.

   a. Click **Change column display**.

      The **Select Display Sequence** screen appears.



   b. Select a query column from the Available Fields list. Select multiple items using the **Shift** or **Ctrl** keys.

   c. Click **>** to add items to the Selected Fields list.

d. Specify the order in which the data displays by selecting the item and clicking **Move up** or **Move down**.

e. Click **Back** when the sequence fits your requirements.

7. Specify the filtering criteria for the data:

> **Note**
> When querying for summary data, users must specify the items under Required criteria.

- Required criteria:
  - Specify a Summary Time for the data or whether you want COOKIES to appear in your reports.
- Custom criteria:
  a. Specify the criteria filtering rules for the data categories:
     - **All of the criteria**: This selection acts as a logical AND function. Data appearing in the report must meet all the filtering criteria.
     - **Any of the criteria**: This selection acts as a logical OR function. Data appearing in the report must meet any of the filtering criteria.

  b. Specify the filtering criteria for the data. Control Manager supports specifying up to 20 criteria for filtering data.

> **Tip**
> If you do not specify any filtering criteria, the Ad Hoc Query returns all results for the applicable columns. Trend Micro recommends specifying filtering criteria to simplify data analysis after the information for the query returns.

8. Save the query:

   a. Click **Save this query to the saved Ad Hoc Queries list**.

   b. Type a name for the saved query in the **Query Name** field.

9. Click **Query**.

   The **Results** screen appears.

10. Save the report as a CSV file:

    a. Click **Export to CSV**.

    b. Click **Download**.

    c. Specify the location to save the file.

    d. Click **Save**.

11. Save the report as an XML file:

    a. Click **Export to XML**.

    b. Click **Download**.

    c. Specify the location to save the file.

    d. Click **Save**.

> **Tip**
>
> To query more results on a single screen, select a different value in Rows per page. A single screen can display 10, 15, 30, or 50 query results per page.

12. Save the settings for the query:

    a. Click **Save query settings**.

    b. Type a name for the saved query in the **Query Name** field.

    c. Click **OK**.

    The saved query appears on the **Saved Ad Hoc Queries** screen.

About Recovering Managed Products Removed From the Product Directory

The following scenarios can cause Control Manager to delete managed products from the Product Directory:

- Reinstalling the Control Manager server and selecting **Delete existing records and create a new database**

  This option creates a new database using the name of the existing one.

- Replacing the corrupted Control Manager database with another database of the same name

- Accidentally deleting the managed product from Directory Management

If the records for a Control Manager server's managed products are lost, TMI agents on the products still "know" where they are registered. The Control Manager agent automatically re-registers itself after 8 hours or when the service restarts.

MCP agents do not re-register automatically. Administrators must manually re-register managed products using MCP agents.

Recovering Managed Products Removed From the Product Directory

---

Procedure

- Restart the Trend Micro Control Manager service on the managed product server. For more information, see *Stopping and Restarting Control Manager Services on page A-31*.

- Wait for the Agent to re-register itself: By default, the older Control Manager agents verify their connection to the server every eight (8) hours. If the agent detects that its record has been deleted, it will re-register itself automatically.

- Manually re-register to Control Manager: MCP agents do not re-register automatically and need to be manually re-registered to the Control Manager server.

Stopping and Restarting Control Manager Services

Use the **Windows Services** screen to restart any of the following Control Manager services:

- Trend Micro Management Infrastructure
- Trend Micro Common CGI
- Trend Micro Control Manager

Note

These are the services that run in the background on the Windows operating system, not the Trend Micro services that require Activation Codes (for example, Outbreak Prevention Services).

Procedure

1. Click **Start** > **Programs** > **Administrative Tools** > **Services** to open the **Services** screen.
2. Right-click **<Control Manager service>**, and then click **Stop**.
3. Right-click **<Control Manager service>**, and then click **Start**.

Searching for Managed Products, Product Directory Folders, or Computers

Use the **Search** button to quickly locate a specific managed product in the Product Directory.

Searching for a Folder or Managed Product

Procedure

1. Access the Product Directory.

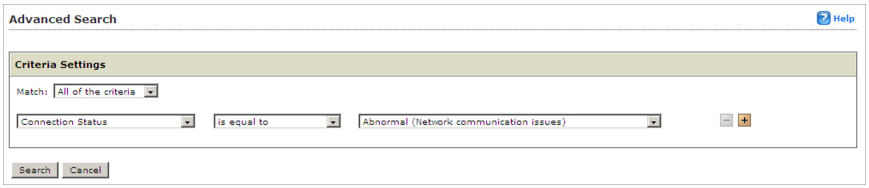
2. Type the display name of the managed product in the **Find entity** field.
3. Click **Search**.

Performing an Advanced Search

Procedure

1. Access the Product Directory.
2. Click **Advanced Search**.

   The **Advanced Search** screen appears.



3. Specify your filtering criteria for the product. Control Manager supports up to 20 filtering criteria for searches.
4. Click **Search** to start searching.

   Search results appear in the **Search Result** folder of the Product Directory.

Refreshing the Product Directory

Procedure

- On the **Product Directory** screen, click the **Refresh** icon on the upper right corner of the screen.

Understanding the Directory Management Screen

After registering to Control Manager, the managed product appears in the Product Directory under the default folder.

Use the Directory Management screen to customize the Product Directory organization to suit your administration needs. For example, you can group products by location or product type (messaging security, web security, file storage protection).

The directory allows you to create, modify, or delete folders, and move managed products between folders. You cannot, however, delete nor rename the New entity folder.

Carefully organize the managed products belonging to each folder. Consider the following factors when planning and implementing your folder and managed product structure:

- Product Directory
- User Accounts
- Deployment Plans
- Ad Hoc Query
- Control Manager reports

Group managed products according to geographical, administrative, or product-specific reasons. In combination with different access rights used to access managed products or folders in the directory, the following table presents the recommended grouping types as well as their advantages and disadvantages.

TABLE A-9. Product Grouping Comparison

GROUPING TYPE	ADVANTAGES	DISADVANTAGES
Geographical or Administrative	Clear structure	No group configuration for identical products
Product type	Group configuration and status is available	Access rights may not match

Grouping Type	Advantages	Disadvantages
Combination of both	Group configuration and access right management	Complex structure, may not be easy to manage

Using the Directory Management Screen Options

Use these options to manipulate and organize managed products in your Control Manager network.

The **Directory Management** screen provides several options:

- Add directories to the Product Directory
- Rename directories in the Product Directory
- Move managed products or directories in the Product Directory
- Remove managed products or directories from the Product Directory

Note

The keep permissions check box allows a folder to keep its source permission when moved.

Using the Directory Management Screen

Procedure

- Select a managed product or directory and click **Rename** to rename a managed product or directory
- Click **+** or the folder to display the managed products belonging to a folder
- Drag managed products or directories to move the managed products or directories in the Product Directory
- Click **Add Folder** to add a directory to the Product Directory

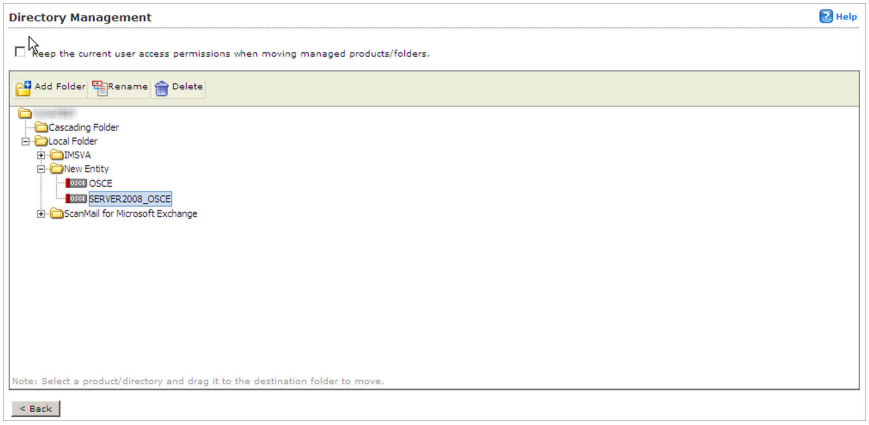
Accessing the Directory Management Screen

Use the **Directory Management** screen to group managed products together.

Procedure

1. Click **Products** from the main menu.

   The **Product Directory** screen appears.



2. Click **Directory Management** from the Product Directory menu.

   The **Directory Management** screen appears.

Creating Folders

Group managed products into different folders to suit your organization's Control Manager network administration model.

Procedure

1. Click **Products** from the main menu.

   The **Product Directory** screen appears.

2. Click **Directory Management** from the Product Directory menu.

   The **Directory Management** screen appears.

3. Select **Local Folder**.

4. Click **Add Folder**.

   The **Add Directory** screen appears.

5. Type a name for the new directory in the **Directory name** field.

6. Click **Save**.

Note

Except for the **New Entity** folder, Control Manager lists all other folders in ascending order, starting from special characters (!, #, $, %, (,), *, +, -, comma, period, +, ?, @, [,], ^, _, {, |, }, and ~), numbers (0 to 9), or alphabetic characters (a/A to z/Z).

Renaming Folders or Managed Products

Rename directories and managed products on the **Directory Management** screen.

Note

Renaming a managed product only changes the name stored in the Control Manager database; there are no effects to the managed product.

Procedure

1. Click **Products** from the main menu.

   The **Product Directory** screen appears.

2. Click **Directory Management** from the Product Directory menu.

   The **Directory Management** screen appears.

3. Select the managed product or directory to rename.

4. Click **Rename**.

   The **Rename Directory** screen appears.

5. Type a name for the managed product or directory in the **Directory name** field.

6. Click **Save**.

7. Click **OK**.

   The managed product or directory displays in the Product Directory with the new name.

Moving Folders or Managed Products

When moving folders pay special attention to the **Keep the current user access permissions when moving managed products/folders** check box. If you select this check box and move a managed product or folder, the managed product or folder keeps the permissions from its source folder. If you clear the keep permissions check box, and then move a managed product or folder, the managed product or folder assumes the access permissions from its new parent folder.

Procedure

1. Click **Products** from the main menu.

   The **Product Directory** screen appears.

2. Click **Directory Management** from the Product Directory menu.

   The **Directory Management** screen appears.

3. On the working area, select the folder or managed product to move.

4. Drag the folder or managed product to the target new location.

5. Click **Save**.

Deleting User-Defined Folders

Take caution when deleting user-defined folders on the **Directory Management** screen. You may accidentally delete a managed product which causes it to unregister from the Control Manager server.

Note

You cannot delete the **New Entity** folder.

Procedure

1. Click **Products** from the main menu.

   The **Product Directory** screen appears.

2. Click **Directory Management** from the Product Directory menu.

   The **Directory Management** screen appears.

3. Select the managed product or directory to delete.

4. Click **Delete**.

   A confirmation dialog box appears.

5. Click **OK**.

6. Click **Save**.

Downloading and Deploying New Components

Trend Micro recommends updating the antivirus and content security components to remain protected against the latest virus and malware threats.

By default, Control Manager enables download only on components belonging to managed products registered to the Control Manager server. Control Manager enables virus pattern download even if no managed products are registered to the Control Manager server.

The following are the components to update (listed according to the frequency of recommended update).

TABLE A-10. Available Components

COMPONENT	DESCRIPTION
Pattern files/Cleanup templates	Pattern files/Cleanup templates contain hundreds of malware signatures (for example, viruses or Trojans) and determine the managed product's ability to detect and clean malicious file infections
Antispam rules	Antispam rules are the Trend Micro-provided files used for antispam and content filtering
Engines	Engines refer to virus/malware scan engines, Damage Cleanup engine, VirusWall engines, the Spyware/Grayware engine and so on. These components perform the actual scanning and cleaning functions.

Component	Description
OfficeScan Plug-in Programs	OfficeScan Plug-in Programs (for example, Trend Micro Security for Mac). **Note** The OfficeScan web console displays all available Plug-in Programs. You can specify to download any of them from Control Manager. However, Control Manager may not have the downloaded the Plug-in Program. Which means that OfficeScan cannot download the specified Plug-in Program from Control Manager. Before specifying a Plug-in Program for download, from Control Manager to OfficeScan, verify that Control Manager has already downloaded the Plug-in Program.
Product programs and widget pool	Product-specific components (for example, Service Pack releases) and the Control Manager widget pool

Note

Only registered users are eligible for components update.

To minimize Control Manager network traffic, disable the download of components that have no corresponding managed product.

The **Component List** screen presents a full list of all components that Control Manager has available for managed products. The list also matches components with managed

products that use the component. Click **Updates** > **Component List** to open the **Component List** screen.

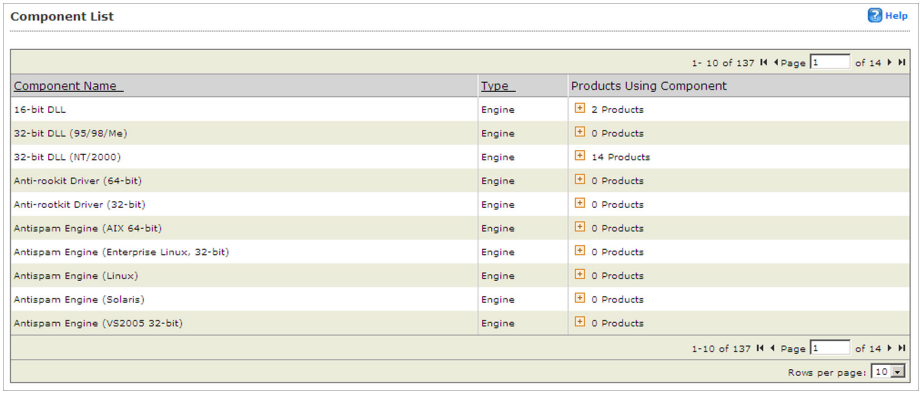


FIGURE A-2. The Component List screen

The Control Manager server only retains the latest component version. You can trace a component's version history by viewing `root>:\Program Files\Trend Micro \Control Manager\AU_log\TmuDump.txt` entries. `TmuDump.txt` generates when ActiveUpdate debugging is enabled.

Tip

To minimize Control Manager network traffic, disable the download of components that have no corresponding managed products or services. When you register managed products or activate services at a later time, be sure to configure the manual or scheduled download of applicable components.

Manually Downloading Components

Manually download component updates when you initially install Control Manager, when your network is under attack, or when you want to test new components before deploying the components to your network.

Trend Micro recommends the following method to configure manual downloads. Manually downloading components requires multiple steps:

Tip

Ignore steps 1 and 2 if you have already configured your deployment plan and configured your proxy settings.

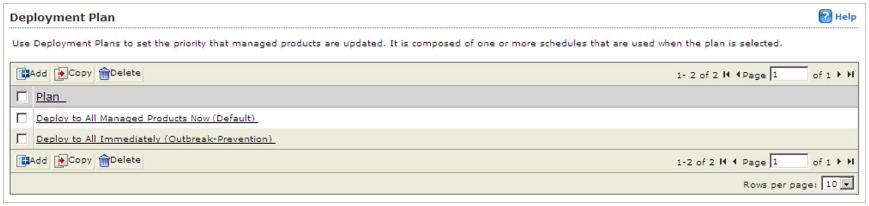
- Step 1: Configure a deployment plan for your components
- Step 2: Configure your proxy settings, if you use a proxy server
- Step 3: Select the components to update
- Step 4: Configure the download settings
- Step 5: Configure the automatic deployment settings
- Step 6: Complete the manual download

Step 1: Configure a Deployment Plan for Your Components

Procedure

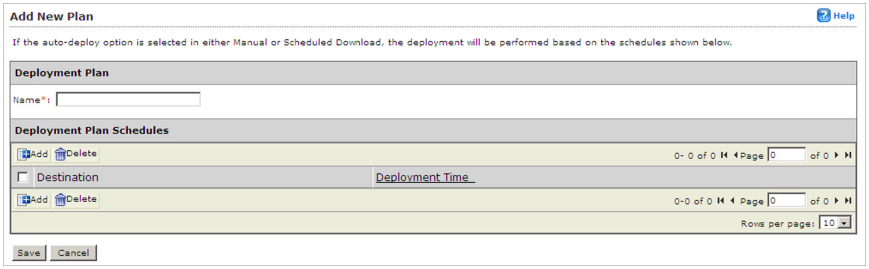
1. Navigate to **Updates** > **Deployment Plan**.

   The **Deployment Plan** screen appears.



2. Click **Add**.

   The **Add New Plan** screen appears.



3. Type a deployment plan name in the **Name** field.

4. Click **Add** to provide deployment plan details.

   The **Add New Schedule** screen appears.

5. On the **Add New Schedule** screen, choose a deployment time schedule by selecting one the following options:

   - **Start at**: Performs the deployment at a specific time.

     Use the menus to designate the time in hours and minutes.

   - **Delay**: after Control Manager downloads the update components, Control Manager delays the deployment according to the interval that you specify.

     Use the menus to indicate the duration, in terms of hours and minutes.

6. Select the Product Directory folder to which the schedule will apply. Control Manager assigns the schedule to all the products under the selected folder.

7. Click **Save**.

The **Add New Plan** screen appears.

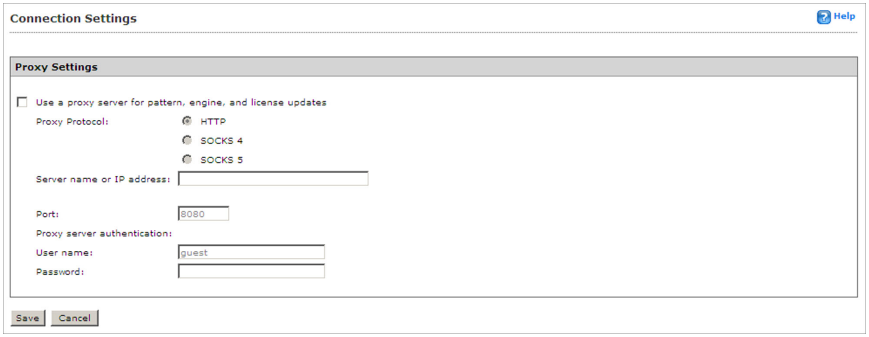
8. Click **Save** to apply the new deployment plan.

Step 2: Configure Your Proxy Settings (If You Use a Proxy Server)

Procedure

1. Navigate to **Administration** > **Settings** > **Proxy Settings**.

   The **Connection Settings** screen appears.



2. Select **Use a proxy server for pattern, engine, and license updates**.
3. Select the protocol:
   - HTTP
   - SOCKS 4
   - SOCKS 5
4. Type the host name or IP address of the server in the **Server name or IP address** field.
5. Type a port number in the **Port** field.
6. Type a log on name and password if your server requires authentication.

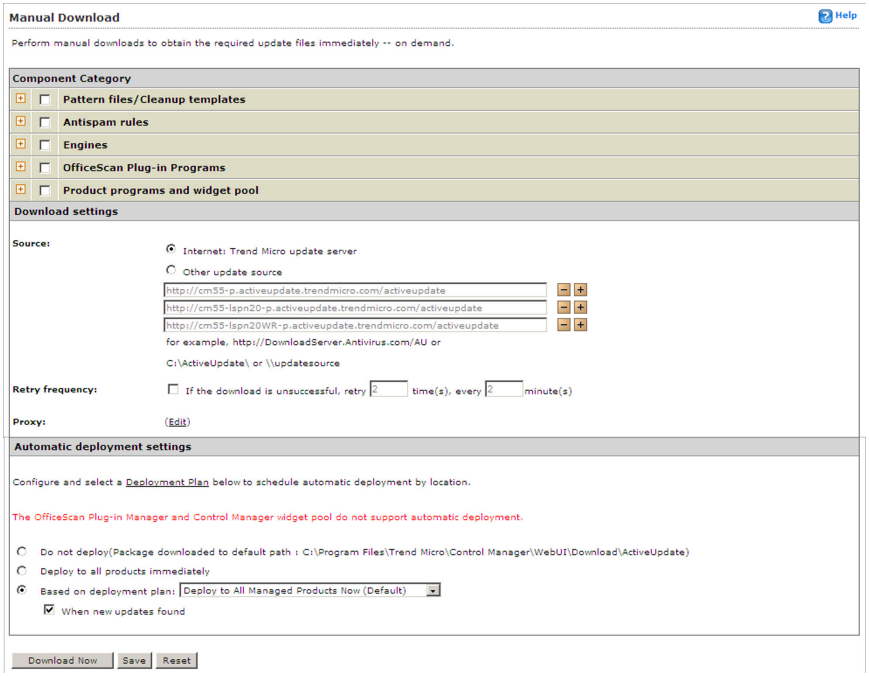
7. Click **Save**.

Step 3: Select the Components to Update

Procedure

1. Navigate to **Updates** > **Manual Download**.

   The **Manual Download** screen appears.



2. From the Component Category area select the components to download.

   a. Click the + icon to expand the component list for each component group.

   b. Select the components to download. To select all components for a group, select:

- Pattern files/Cleanup templates
- Antispam rules
- Engines
- OfficeScan Plug-in Programs
- Product programs and widget pool

Step 4: Configure the Download Settings

Procedure

1. Select the update source:
   - **Internet: Trend Micro update server**: Download components from the official Trend Micro ActiveUpdate server.
   - **Other update source**: Type the URL of the update source in the accompanying field.

     After selecting **Other update source**, you can specify multiple update sources. Click the + icon to add an update source. You can configure up to five update sources.
2. Select **Retry frequency** and specify the number of retries and duration between retries for downloading components.

   Tip

   Click **Save** before clicking **Edit** or **Deployment Plan** on this screen. If you do not click **Save** your settings will be lost.
3. If you use an HTTP proxy server on the network (that is, if the Control Manager server does not have direct Internet access), click **Edit** to configure the proxy settings on the **Connection Settings** screen.

Step 5: Configure the Automatic Deployment Settings

Procedure

1. Select when to deploy downloaded components from the Automatic deployment settings area. The options are:
   - **Do not deploy**: Components download to Control Manager, but do not deploy to managed products. Use this option under the following conditions:
     - Deploying to the managed products individually
     - Testing the updated components before deployment
   - **Deploy to all products immediately**: Components download to Control Manager, and then deploy to managed products
   - **Based on deployment plan**: Components download to Control Manager, but deploy to managed products based on the schedule you select
   - **When new updates found**: Components download to Control Manager when new components are available from the update source, but deploy to managed products based on the schedule you select

Tip

Click **Save** before clicking **Edit** or **Deployment Plan** on this screen. If you do not click **Save** your settings will be lost.

Step 6: Complete the Manual Download

Procedure

1. Click **Download Now** and then click **OK** to confirm.

   The download response screen appears. The progress bar displays the download status.

2. Click **Command Details** to view details from the **Command Details** screen.

3. Click **OK** to return to the **Manual Download** screen.

Understanding Scheduled Download Exceptions

Download exceptions allow administrators to prevent Control Manager from downloading Trend Micro update components for entire day(s) or for a certain time every day.

This feature is particularly useful for administrators who prefer not to allow Control Manager to download components on a non-work day or during non-work hours.

Note

Daily scheduled exceptions apply to the selected days, while hourly scheduled exceptions apply to every day of the week.

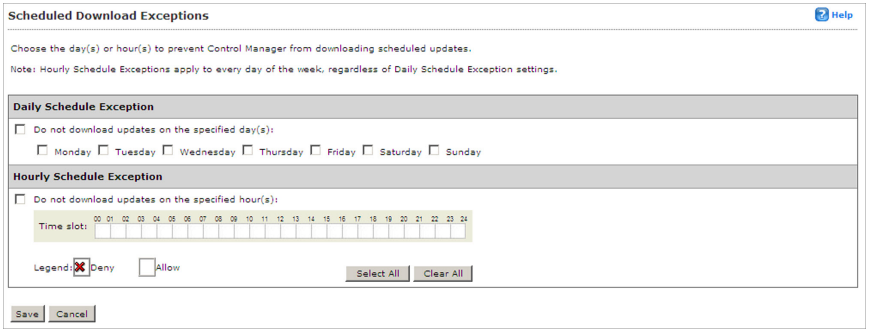
Example: The administrator decides that they do not want Control Manager to download components on weekends or after working hours throughout the week. The administrator enables **Daily Schedule Exception** and selects **Saturday** and **Sunday**. The administrator then enables **Hourly Schedule Exception** and specifies the hours of **00:00 to 9:00** and **18:00 to 24:00**.

Configuring Scheduled Download Exceptions

Procedure

1. Navigate to **Updates** > **Scheduled Download Exceptions**.

   The **Scheduled Download Exceptions** screen appears.



2. Do one or more of the following:

   - To schedule a daily exception, under Daily Schedule Exception, select the day(s) to prevent downloads, and then select **Do not download updates on the specified day(s)**. Every week, Control Manager blocks all downloads during the selected day(s).

   - To schedule an hourly exception, under Hourly Schedule Exception, select the hour(s) to prevent downloads, and then select **Do not download updates on the specified hour(s)**. Every day, Control Manager blocks all downloads during the selected hours.

3. Click **Save**.

Configuring Scheduled Downloads

Configure scheduled downloading of components to keep your components up to date and your network secure. Control Manager supports granular component downloading. You can specify the component group and individual component download schedules. All schedules are autonomous of each other. Scheduling a download for a component group downloads all components in the group.

Use the **Scheduled Download** screen to obtain the following information for components currently in your Control Manager system:

- **Frequency**: Shows how often the component updates
- **Enabled**: Indicates if the schedule for the component is enabled or disabled

- **Update Source**: Displays the URL or path of the update source

Configuring scheduled component downloads requires multiple steps:

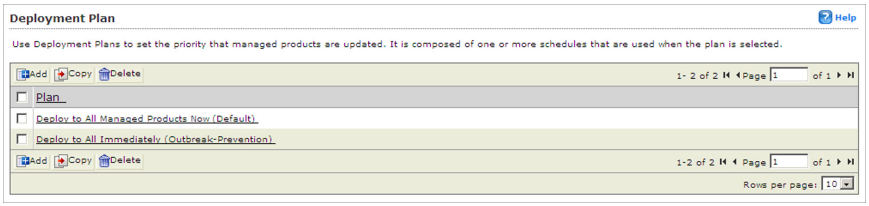
- Step 1: Configure a Deployment Plan for your components
- Step 2: Configure your proxy settings, if you use a proxy server
- Step 3: Select the components to update
- Step 4: Configure the download schedule
- Step 5: Configure the download settings
- Step 6: Configure the automatic deployment settings
- Step 7: Enable the schedule and save settings

Step 1: Configure a Deployment Plan for Your Components

Procedure

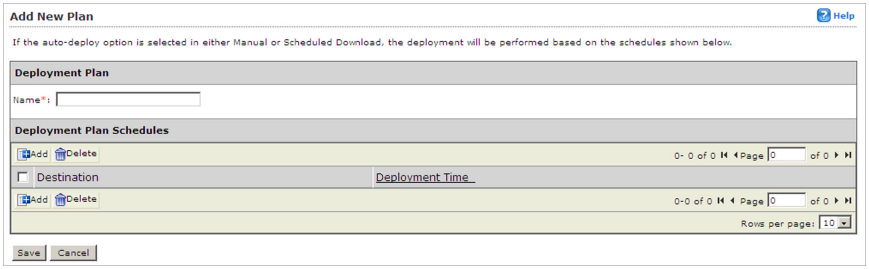
1. Navigate to **Updates** > **Deployment Plan**.

   The **Deployment Plan** screen appears.



2. Click **Add**.

   The **Add New Plan** screen appears.



3. Type a deployment plan name in the **Name** field.

4. Click **Add** to provide deployment plan details.

   The **Add New Schedule** screen appears.

5. Choose a deployment time schedule by selecting one the following options:

   - **Start at**: Performs the deployment at a specific time.

     Use the menus to designate the time in hours and minutes.

   - **Delay**: after Control Manager downloads the update components, Control Manager delays the deployment according to the interval that you specify.

     Use the menus to indicate the duration, in terms of hours and minutes.

6. Select the Product Directory folder to which the schedule will apply. Control Manager assigns the schedule to all the products under the selected folder.

7. Click **Save**.

   The **Add New Plan** screen appears.

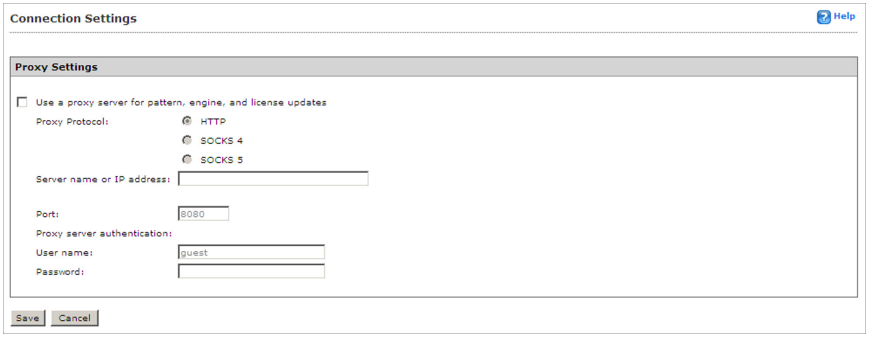
8. Click **Save** to apply the new deployment plan.

Step 2: Configure Your Proxy Settings (If You Use a Proxy Server)

Procedure

1. Navigate to **Administration** > **Settings** > **Proxy Settings**.

   The **Connection Settings** screen appears.



2. Select **Use a proxy server for pattern, engine, and license updates**.
3. Select the protocol:
   - **HTTP**
   - **SOCKS 4**
   - **SOCKS 5**
4. Type the host name or IP address of the server in the **Server name or IP** address field.
5. Type a port number for the proxy server in the **Port** field.
6. Type a logon name and password if your server requires authentication.

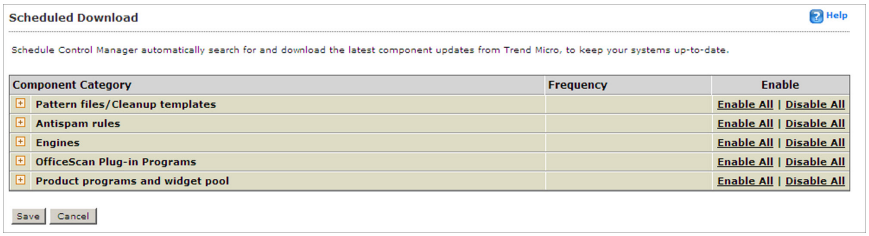
7. Click **Save**.

Step 3: Select the Components to Update

Procedure

1. Navigate to **Updates** > **Scheduled Download**.

   The **Scheduled Download** screen appears.



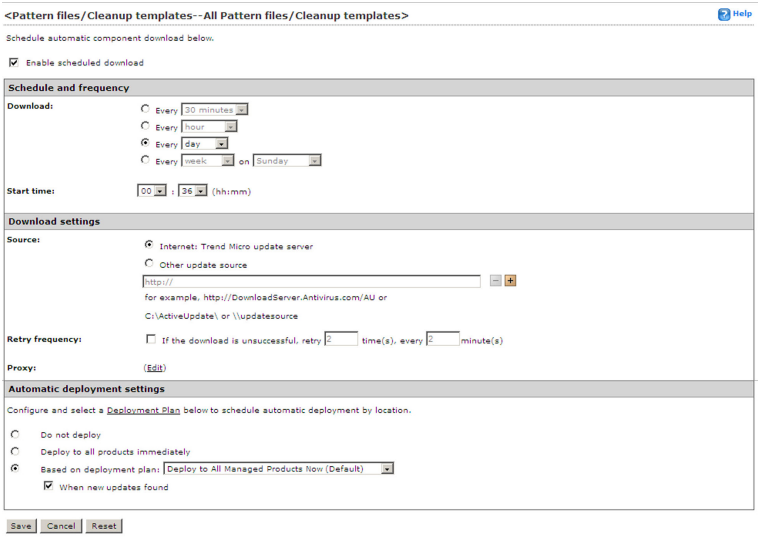
2. From the Component Category area select the components to download.

   a. Click the + icon to expand the component list for each component group.

   b. Select the components to download. To select all components for a group, select:

      - **All Pattern files/Cleanup templates**
      - **All Antispam rules**
      - **All Engines**
      - **OfficeScan Plug-in Programs**
      - **Product programs and widget pool**

      The <Component Name> screen appears. Where <Component Name> represents the name of the selected component.



Step 4: Configure the Download Schedule

Procedure

1. Select the **Enable scheduled download** check box to enable scheduled download for the component.
2. Define the download schedule. Select a frequency, and use the appropriate drop down menu to specify the desired schedule. You may schedule a download by minutes, hours, days, or weeks.
3. Use the **Start time** menus to specify the date and time the schedule starts to take effect.

Step 5: Configure the Download Settings

Procedure

1. Select the update source:

   - **Internet**: **Trend Micro update server**: Download components from the official Trend Micro ActiveUpdate server.

   - **Other update source**: Type the URL of the update source in the accompanying field.

     After selecting **Other update source**, you can specify multiple update sources. Click the **+** icon to add an update source. You can configure up to five update sources.

2. Select **Retry frequency** and specify the number of retries and duration between retries for downloading components.

   Note

   Click **Save** before clicking **Edit** or **Deployment Plan** on this screen. If you do not click **Save** your settings will be lost.

3. If you use an HTTP proxy server on the network (that is, if the Control Manager server does not have direct Internet access), click **Edit** to configure the proxy settings on the **Connection Settings** screen.

Step 6: Configure the Automatic Deployment Settings

Procedure

1. Select when to deploy downloaded components from the Automatic deployment settings area. The options are:

   - **Do not deploy**: Components download to Control Manager, but do not deploy to managed products. Use this option under the following conditions:

     - Deploying to the managed products individually

  - Testing the updated components before deployment
- **Deploy immediately**: Components download to Control Manager, then deploy to managed products
- **Based on deployment plan**: Components download to Control Manager, but deploy to managed products based on the schedule you select
- **When new updates found**: Components download to Control Manager, and deploy to managed products when new components are available from the update source

Note

Click **Save** before clicking **Edit** or **Deployment Plan** on this screen. If you do not click **Save** your settings will be lost.

2. Select a deployment plan after components download to Control Manager, from the **Deployment Plan** screen.
3. Click **Save**.

Step 7: Enable the Schedule and Save Settings

Procedure

1. Click the status button in the **Enable** column.
2. Click **Save**.

Configuring Scheduled Download Schedule and Frequency

Specify how often Control Manager obtains component updates at the Schedule and Frequency group.

Procedure

1. Navigate to **Updates** > **Scheduled Download**.

The **Scheduled Download** screen appears.

2. From the Component Category area select the components to download.

   a. Click the **+** icon to expand the component list for each component group.

   b. Select the components to download. To select all components for a group, select:

      - **All Pattern files/Cleanup templates**
      - **All Antispam rules**
      - **All Engines**
      - **OfficeScan Plug-in Programs**
      - **Product programs and widget pool**

      The Component Name> screen appears. Where Component Name> is the name of the component you selected.

3. Under Schedule and frequency:

   a. Define the download schedule. Select a frequency, and use the appropriate drop down menu to specify the desired schedule. You may schedule a download every minutes, hours, days, or weeks.

   b. Use the **Start time** drop-down menus to specify the date and time the schedule starts to take effect.

4. Click **Save**.

Configuring Scheduled Download Settings

The Download Settings group defines the components Control Manager automatically downloads and the download method.

Procedure

1. Navigate to **Updates** > **Scheduled Download**.

The **Scheduled Download** screen appears.

2. From the Component Category area select the components to download.

   a. Click the **+** icon to expand the component list for each component group.

   b. Select the components to download. To select all components for a group, select:

      - **All Pattern files/Cleanup templates**
      - **All Antispam rules**
      - **All Engines**
      - **OfficeScan Plug-in Programs**
      - **Product programs and widget pool**

      The Component Name> screen appears. Where Component Name> represents the name of the selected component.

3. Under Download settings, select one of the following update sources:

   - **Internet: Trend Micro update server**: (default setting) Control Manager downloads the latest components from the Trend Micro ActiveUpdate server
   - **Other update source**: specify the URL of the latest component source, for example, your company's Intranet server

     After selecting **Other update source**, you can specify multiple update sources. Click the + icon to add an additional update source. You can configure up to five update sources.

4. Select **Retry frequency** to instruct Control Manager to retry downloading latest components. Specify the number of attempts and the frequency of each set of attempts in the appropriate fields.

Note

Click **Save** before clicking **Edit** or **Deployment Plan** on this screen. If you do not click **Save** your settings will be lost.

---

5. If you are using a proxy server on the network (that is, the Control Manager server does not have direct Internet access), click **Edit** to configure the proxy settings from the **Connection Settings** screen.

6. Click **Save**.

Configuring Scheduled Download Automatic Deployment Settings

Use the Automatic deployment settings group to set how Control Manager deploys updates.

Procedure

1. Navigate to **Updates** > **Scheduled Download**.

   The **Scheduled Download** screen appears.

2. From the Component Category area select the components to download.

   a. Click the + icon to expand the component list for each component group.

   b. Select the components to download. To select all components for a group, select:

      - **All Pattern files/Cleanup templates**
      - **All Antispam rules**
      - **All Engines**
      - **OfficeScan Plug-in Programs**
      - **Product programs and widget pool**

        The Component Name> screen appears. Where Component Name> represents the name of the selected component.

3. Select when to deploy downloaded components from the Automatic deployment settings area. The options are:

- **Do not deploy**: Components download to Control Manager, but do not deploy to managed products. Use this option under the following conditions:
  - Deploying to the managed products individually
  - Testing the updated components before deployment
- **Deploy immediately**: Components download to Control Manager, then deploy to managed products
- **Based on deployment plan**: Components download to Control Manager, but deploy to managed products based on the schedule you select
- **When new updates found**: Components download to Control Manager when new components are available from the update source, but deploy to managed products based on the schedule you select

Note

Click **Save** before clicking **Edit** or **Deployment Plan** on this screen. If you do not click **Save** your settings will be lost.

4. Select a deployment plan after components download to Control Manager, from the **Deployment Plan** screen.
5. Click **Save**.

Note

The settings in Automatic deployment settings only apply to components used by managed products.

Understanding Deployment Plans

A deployment plan allows you to set the order in which Control Manager updates your groups of managed products. With Control Manager, you can implement multiple deployment plans to different managed products at different schedules. For example, during an outbreak involving an email-borne virus, you can prioritize the update of your email message scanning software components such as the latest virus pattern file for Trend Micro ScanMail for Microsoft Exchange.

The Control Manager installation creates two deployment plans:

- Deploy to All Managed Products Now (Default): default plan used during component updates
- Deploy to All Immediately (Outbreak-Prevention): default plan for the Outbreak Prevention Services Prevention Stage

By default, these plans deploy updates to all products in the Product Directory immediately.

Select or create plans from the Manual and Scheduled download screens. Customize these plans, or create new ones, as required by your network. For example, create deployment plans according to the nature of the outbreak:

- Email-borne virus
- File-sharing virus

Deploying updates to the Product Directory is separate from the download process.

Control Manager downloads the components and follows the deployment plan according to manual or scheduled download settings.

When creating or implementing a deployment plan, consider the following points:

- Assign deployment schedules to folders, not to specific products.

  Planning the contents of the Product Directory folders, therefore, becomes very important.

- You can only include one folder for each deployment plan schedule.

  However, you can specify more than one schedule per deployment plan.

- Control Manager bases the deployment plan delays on the completion time of the download, and these delays are independent of each other.

  For example, if you have three folders to update at 5 minute intervals, you can assign the first folder a delay of 5 minutes, and then set delays of 10 and 15 minutes for the two remaining folders.

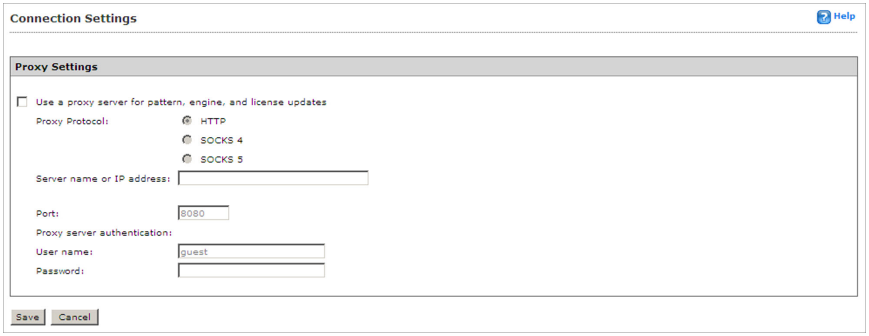
Configuring Proxy Settings

Configure the proxy server connection for component downloads and for license updates.

Procedure

1. Navigate to **Administration** > **Settings** > **Proxy Settings**.

   The **Connection Settings** screen appears.



2. Select **Use a proxy server for pattern, engine, and license updates**.
3. Select the protocol:
   - **HTTP**
   - **SOCKS 4**
   - **SOCKS 5**
4. Type the host name or IP address of the server in the **Server name or IP address** field.
5. Type a port number in the **Port** field.
6. Type a log on name and password if your server requires authentication.
7. Click **Save**.

Configuring Update/Deployment Settings

Using HTTPS to download components from the Trend Micro ActiveUpdate server (the default download source) or other update source provides a more secure method for retrieving components.

Downloading components from a shared folder in a network requires setting the local Windows and Remote UNC authentications.

The local Windows authentication refers to the Active Directory user account in the Control Manager server. The account should have:

- Administrator privilege
- *Log on as a batch job* policy set

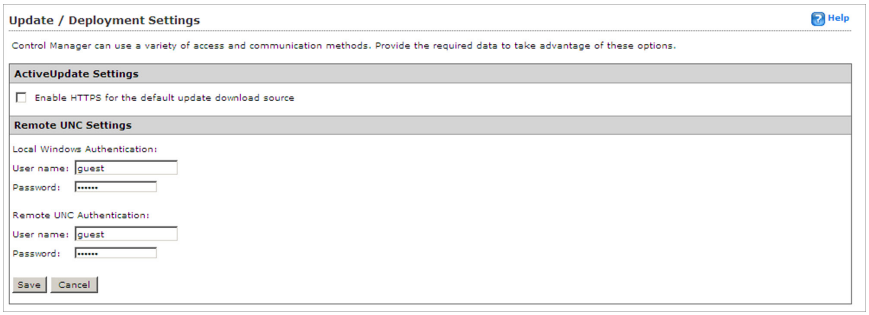
The **remote UNC authentication** feature uses a user account from the component source server that has permission to share a folder to which Control Manager will download updates.

Enabling HTTPS Download

Procedure

1. Navigate to **Updates** > **Update/Deployment Settings**.

   The **Update/Deployment Settings** screen appears.



2. Select **Enable HTTPS for the default update download source**.

3. Click **Save**.
4. Navigate to the **Manual Download** or **Scheduled Download** screen.
5. On the working area under **Download settings**, select **Internet: Trend Micro update server** or specify your organization's component source server in the **Other update source** field.
6. Click **Save**.

Enabling UNC Download

Procedure

1. Navigate to **Updates** > **Update/Deployment Settings**.

   The **Update/Deployment Settings** screen appears.
2. Type the **Local Windows Authentication** and **Remote UNC Authentication** user names and passwords.
3. Click **Save**.
4. Navigate to the **Manual Download** or **Scheduled Download** screen.
5. On the working area under **Download settings**, select **Other update source** and then specify the shared network folder.
6. Click **Save**.

Setting "Log on as batch job" Policy

The local Windows authentication refers to the Active Directory user account in the Control Manager server. The account should have:

- Administrator privilege
- "Log on as a batch job" policy set

Procedure

1. Click **Start** > **Settings** > **Control Panel**.
2. Click **Administrative Tools**.
3. Open **Local Security Policy**. The Local Security Settings screen appears.
4. Click **Local Policies** > **User Rights Assignment**.
5. Double-click **Log on as a batch job**.

   The **Log on as a batch job Properties** dialog box appears.
6. Add the user if they do not appear on the list.

Using Logs

Although Control Manager receives data from various log types, Control Manager allows users to query the log data directly from the Control Manager database. Users can then specify filtering criteria to gather only the data they need.

Control Manager also introduces log aggregation. Log aggregation can improve query performance and reduce the network bandwidth managed products require when sending logs to Control Manager. However, this comes at a cost of lost data through aggregation. Control Manager cannot query data that does not exist in the Control Manager database.

Understanding Managed Product Logs

Managed product logs contain information about the performance of your managed products. You can obtain information for specific products or groups of products administered by the parent or child server. With Control Manager's data query on logs and data filtering capabilities, administrators can focus on the information they need.

Note

More logs mean abundant information about the Control Manager network. However, these logs occupy disk space. You must balance the need for information with your available system resources.

Managed products generate different kinds of logs depending on their function.

TABLE A-11. Managed Product Logs

LOG CATEGORY	DESCRIPTION
Product Information	Product information logs provide information on subjects ranging from user access and events on managed products to component deployment and update status. • Managed Product Information • Component Information
Security Threat Information	Security threat logs provide information on known and potential security threats detected on your network. • Virus/Malware Information • Spyware/Grayware Information • Content Violation Information • Spam Violation Information • Policy/Rule Violation Information • Web Violation/Reputation Information • Suspicious Threat Information • Overall Threat Information
Data Protection Information	Data Protection logs provide information on DLP incidents, template matches, and incident sources. • Data Loss Prevention Information

Querying Log Data

Ad Hoc Queries provide administrators with a quick method to pull information directly from the Control Manager database. The database contains all information collected from all products registered to the Control Manager server (log aggregation can affect the data available to query). Ad Hoc Queries provide a very powerful tool for administrators.

While querying data, administrators can filter the query criteria so only the data they need returns. Administrators can then export the data to CSV or XML format for further analysis or save the query for future use. Control Manager also supports sharing saved queries with other users so others can benefit from useful queries.

Completing an Ad Hoc query consists of the following process:

- Step 1: Select the managed product or current Control Manager server for the query
- Step 2: Select the data view to query
- Step 3: Specify filtering criteria and the specific information that displays
- Step 4: Save and complete the query
- Step 5: Export the data to a CSV or XML file

Note

Control Manager supports sharing saved Ad Hoc Queries with other users. Saved and shared queries appear on the **Saved Ad Hoc Queries** screen.

Understanding Data Views

A data view is a table consisting of clusters of related data cells. Data views provide the foundation on which users perform Ad Hoc Queries to the Control Manager database.

Control Manager allows direct queries to the Control Manager database. Data views are available to Control Manager 5 report templates and to Ad Hoc Query requests.

Data views are tables filled with information. Each heading in a data view acts as a column in a table. For example, the Virus/Malware Action/Result Summary data view has the following headings:

- Action Result
- Action Taken
- Unique Endpoints
- Unique Sources
- Detections

As a table, a data view takes the following form with potential subheadings under each heading:

TABLE A-12. Sample Data View

ACTION RESULT	ACTION TAKEN	UNIQUE ENDPOINTS	UNIQUE SOURCES	DETECTIONS

This information is important to remember when specifying how data displays in a report template.

Control Manager separates data views into two major categories: Product Information and Security Threat Information. See the appendix for more information about data views. The major categories separate further into several subcategories, with the subcategories separated into summary information and detailed information.

Understanding Reports

Control Manager reports consist of two parts: report templates and report profiles. Where a report template determines the look and feel of the report, the report profile specifies the origin of the report data, the schedule/time period, and the recipients of the report.

Control Manager 5.0 introduced radical changes over previous Control Manager versions by introducing customized reports for Control Manager administrators. Control

Manager 6.0 continues to support report templates from previous Control Manager versions, however Control Manager 6.0 allows administrators to design their own custom report templates.

Understanding Control Manager Report Templates

A report template outlines the look and feel of Control Manager reports. Control Manager categorizes report templates according to the following types:

- Control Manager 5 templates: User-defined customized report templates that use direct database queries (database views) and report template elements (charts and tables). Users have greater flexibility specifying the data that appears in their reports compared to report templates from previous Control Manager versions. For more information on Control Manager 5 templates, see *Understanding Control Manager 5 Templates on page A-69*.

- Control Manager 3 templates: Includes pre-defined templates. For more information on Control Manager 3 templates, see *Understanding Control Manager 3 Templates on page A-76*.

Understanding Control Manager 5 Templates

Control Manager 5 report templates use database views as the information foundation for reports. For more information on data views, see *Understanding Data Views on page A-67*. The look and feel of generated reports falls to the report elements. Report elements consist of the following.

TABLE A-13. Control Manager 5 Report Template Elements

TEMPLATE ELEMENT	DESCRIPTION
Page break	Inserts a page break for a report. Each report page supports up to three report template elements.
Static text	Provides a user-defined description or explanation for the report. Static text content can contain up to 4096 characters.
Bar chart	Inserts a bar chart into a report template.

Template Element	Description
Line chart	Inserts a line graph into a report template.
Pie chart	Inserts a pie chart into a report template.
Dynamic table	Inserts a dynamic table/pivot table into a report template.
Grid table	Inserts a table into a report template. The information in a grid table will be the same as the information that displays in an Ad Hoc Query.

Each Control Manager 5 template can contain up to 100 report template elements. Each page in the report template can contain up to three report template elements. Use page breaks to create report template pages.

To better understand Control Manager 5 report templates, Trend Micro provides the following pre-defined report templates.

Note

Access the **Report Templates** screen to view the Trend Micro pre-defined templates.

TABLE A-14. Control Manager 5 Pre-defined Templates

TEMPLATE	DESCRIPTION
TM-Content Violation Detection Summary	Provides the following information: • Content Violation Detection Grouped by Day (Line chart) • Policy in Violation Count Grouped by Day (Line chart) • Sender/Users in Violation Count Grouped by Day (Line chart) • Recipient Count Grouped by Day (Line chart) • Top 25 Policies in Violation (Bar chart) • Content Violation Policy Summary (Grid table) • Top 25 Senders/Users in Violation (Bar chart) • Content Violation Senders/Users in Violation Summary (Grid table) • Action Result Summary (Pie chart)

Template	Description
TM-Managed Product Connection/Component Status	Provides the following information: • Server/Appliance Connection Status (Pie chart) • Client Connection Status (Pie chart) • Server/Appliance Pattern File/Rule Update Status (Pie chart) • Client Pattern File/Rule Update Status (Pie chart) • Server/Appliance Scan Engine Update Status (Pie chart) • Client Scan Engine Update Status (Pie chart) • Pattern File/Rule Summary for Servers/Appliances (Grid table) • Pattern File/Rule Summary for Clients (Grid table) • Scan Engine Summary for Servers/Appliances (Grid table) • Scan Engine Summary for Clients (Grid table)
TM-Overall Threat Summary	Provides the following information: • Complete Network Security Risk Analysis Summary (Grid table) • Network Protection Boundary Summary (Grid table) • Security Risk Entry Point Analysis Information (Grid table) • Security Risk Destination Analysis Information (Grid table) • Security Risk Source Analysis Information (Grid table)

TEMPLATE	DESCRIPTION
TM-Spam Detection Summary	Provides the following information: • Spam Detection Grouped by Day (Line chart) • Recipient Domain Count Grouped by Day (Line chart) • Recipient Count Grouped by Day (Line chart) • Top 25 Recipient Domains (Bar chart) • Overall Spam Violation Summary (Grid table) • Top 25 Spam Recipients (Bar chart) • Spam Recipient Summary (Grid table)
TM-Spyware/Grayware Detection Summary	Provides the following information: • Spyware/Grayware Detection Grouped by Day (Line chart) • Unique Spyware/Grayware Count Grouped by Day (Line chart) • Spyware/Grayware Source Count Grouped by Day (Line chart) • Spyware/Grayware Destination Count Grouped by Day (Line chart) • Top 25 Spyware/Grayware (Bar chart) • Overall Spyware/Grayware Summary (Grid table) • Top 25 Spyware/Grayware Sources (Bar chart) • Spyware/Grayware Source Summary (Grid table) • Top 25 Spyware/Grayware Destinations (Bar chart) • Spyware/Grayware Destination Summary (Grid table) • Action Result Summary (Pie Chart) • Spyware/Grayware Action/Result Summary (Grid table)

Template	Description
TM-Suspicious Threat Detection Summary	Provides the following information: • Suspicious Threat Detection Grouped by Day (Line chart) • Rule in Violation Count Grouped by Day (Line chart) • Sender Count Grouped by Day (Line chart) • Recipient Count Grouped by Day (Line chart) • Source IP Address Count Grouped by Day (Line chart) • Destination IP Address Count Grouped by Day (Line chart) • Top 25 Senders (Bar chart) • Top 25 Recipients (Bar chart) • Suspicious Threat Sender Summary (Grid table) • Suspicious Threat Riskiest Recipient Summary (Grid table) • Top 25 Source IP Addresses (Bar chart) • Top 25 Destination IP Addresses (Bar chart) • Suspicious Threat Source Summary (Grid table) • Suspicious Threat Riskiest Destination Summary (Grid table) • Top 25 Protocol Names (Bar chart) • Suspicious Threat Protocol Detection Summary (Grid table) • Overall Suspicious Threat Summary (Grid table)

TEMPLATE	DESCRIPTION
TM-Virus/Malware Detection Summary	Provides the following information: • Virus/Malware Detection Grouped by Day (Line chart) • Unique Virus/Malware Count Grouped by Day (Line chart) • Infection Destination Count Grouped by Day (Line chart) • Top 25 Virus/Malware (Bar chart) • Overall Virus/Malware Summary (Grid table) • Top 25 Infection Sources (Bar chart) • Virus/Malware Infection Source Summary (Grid table) • Top 25 Infection Destinations (Bar chart) • Virus/Malware Infection Destination Summary (Grid table) • Action Result Summary (Pie chart) • Virus/Malware Action/Result Summary (Grid table)
TM-Web Violation Detection Summary	Provides the following information: • Web Violation Detection Grouped by Day (Line chart) • Policy in Violation Count Grouped by Day (Line chart) • Client in Violation Count Grouped by Day (Line chart) • URL in Violation Count Grouped by Day (Line chart) • Top 25 Policies in Violation (Bar chart) • Overall Web Violation Summary (Grid table) • Top 25 Clients in Violation (Bar chart) • Web Violation Client IP Address Summary (Grid table) • Top 25 URLs in Violation (Bar chart) • Web Violation URL Summary (Grid table) • Filter/Blocking Type Summary (Pie chart)

Understanding Control Manager 3 Templates

Control Manager added 87 pre-generated report templates divided into six categories: Executive Summary, Gateway, Mail Server, Server, Desktop, Network Products, and Data Loss Prevention.

Note

In Control Manager 3.5, spyware/grayware were no longer considered viruses. This change affects the virus count in all original virus-related reports.

It may take a few seconds to generate a report, depending on its contents. As soon as Control Manager finishes generating a report, the screen refreshes and the **View** link adjacent to the report becomes available.

Use the Report Category list on the Control Manager screen to peruse the six categories of reports listed below:

TABLE A-15. Executive Summary Reports and Report Types

EXECUTIVE SUMMARY REPORTS	REPORT TYPES
Spyware/Grayware Detection Reports	• Spyware/Grayware detected • Most commonly detected Spyware/ Grayware (10, 25, 50, 100) • Detected Spyware/Grayware list for all entities
Virus Detection Reports	• Viruses detected • Most commonly detected viruses (10, 25, 50, 100) • Virus infection list for all entities

Executive Summary Reports	Report Types
Comparative Reports	• Spyware/Grayware, grouped by (Day, Week, Month) • Viruses, grouped by (Day, Week, Month) • Damage cleanups, grouped by (Day, Week, Month) • Spam, grouped by (Day, Week, Month)
Vulnerability Reports	• Machine risk level assessment • Vulnerability assessment • Most commonly cleaned infections (10, 25, 50, 100) • Worst damage potential vulnerabilities (10, 25, 50, 100) • Vulnerabilities ranked by risk level

Table A-16. Gateway Product Reports and Report Types

Gateway Product Reports	Report Types
Spyware/Grayware Detection Reports	• Spyware/Grayware detected • Most commonly detected Spyware/ Grayware (10, 25, 50, 100)
Virus Detection Reports	• Viruses detected • Most commonly detected viruses (10, 25, 50, 100)
Comparative Reports	• Spyware/Grayware, grouped by (Day, Week, Month) • Spam, grouped by (Day, Week, Month) • Viruses, grouped by (Day, Week, Month)

Gateway Product Reports	Report Types
Deployment Rate Reports	• Detailed summary • Basic summary • Detailed failure rate summary • OPS deployment rate for IMSS

Table A-17. Mail Server Product Reports and Report Types

Mail Server Product Reports	Report Types
Spyware/Grayware Detection Reports	• Spyware/Grayware detected • Most commonly detected Spyware/ Grayware (10, 25, 50, 100)
Virus Detection Reports	• Viruses detected • Top senders of infected email (10, 25, 50, 100) • Most commonly detected viruses (10, 25, 50, 100)
Comparative Reports	• Spyware/Grayware, grouped by (Day, Week, Month) • Viruses, grouped by (Day, Week, Month)
Deployment Rate Reports	• Detailed summary • Basic summary • Detailed failure rate summary

Table A-18. Server Based Product Reports and Report Types

Server Based Product Reports	Report Types
Spyware/Grayware Detection Reports	• Spyware/Grayware detected • Most commonly detected Spyware/ Grayware (10, 25, 50, 100)

Server Based Product Reports	Report Types
Virus Detection Reports	• Viruses detected • Most commonly detected viruses (10, 25, 50, 100)
Comparative Reports	• Spyware/Grayware, grouped by (Day, Week, Month) • Viruses, grouped by (Day, Week, Month)
Deployment Rate Reports	• Detailed summary • Basic summary • Detailed failure rate summary

Table A-19. Desktop Product Reports and Report Types

Desktop Product Reports	Report Types
Spyware/Grayware Detection Reports	• Spyware/Grayware detected • Most commonly detected Spyware/ Grayware (10,25,50,100)
Virus Detection Reports	• Viruses detected • Most commonly detected viruses (10,25,50,100)
OfficeScan Client Information Reports	• Detailed summary • Basic summary
OfficeScan Product Registration Report	Registration status
Comparative Reports	• Spyware/Grayware, grouped by (Day, Week, Month) • Viruses, grouped by (Day, Week, Month)

Desktop Product Reports	Report Types
OfficeScan Server Deployment Reports	• Detailed summary • Basic summary • Detailed failure rates summary
OfficeScan Damage Cleanup Services Reports	• Detailed summary • Most commonly cleaned infections (10, 25, 50, 100)

Table A-20. Network Product Reports and Report Types

Network Product Reports	Report Types
Network VirusWall Reports	• Policy violation report, grouped by (Day, Week, Month) • Most commonly detected violative clients (10, 25, 50, 100) • Service violation report, grouped by (Day, Week, Month)
Trend Micro Total Discovery Appliance Reports	• Incident summary report, grouped by (Day, Week, Month) • High risk clients (10, 25, 50, 100) • Summary of known and unknown risks report

TABLE A-21. Data Loss Prevention Reports and Report Types

DATA LOSS PREVENTION REPORTS	REPORT TYPES
Top DLP Incident Sources	• Incidents by sender (10, 20, 30, 40, 50) • Incidents by host name (10, 20, 30, 40, 50) • Incidents by recipient (10, 20, 30, 40, 50) • Incidents by source IP address (10, 20, 30, 40, 50) • Incidents by URL (10, 20, 30, 40, 50) • Incidents by User (10, 20, 30, 40, 50) • Top template matches (10, 20, 30, 40, 50) • Incident distribution by channel • Incident trend, grouped by (Day, Week, Month) • Incidents by channel, grouped by (Day, Week, Month)

Data Loss Prevention Reports	Report Types
Significant Incident Increase	• Significant incident increase (%) by channel (10, 20, 30, 40, 50) • Significant incident increase by channel (10, 20, 30, 40, 50) • Significant incident increase (%) by sender (10, 20, 30, 40, 50) • Significant incident increase by sender (10, 20, 30, 40, 50) • Significant incident increase (%) by host name (10, 20, 30, 40, 50) • Significant incident increase by host name (10, 20, 30, 40, 50) • Significant incident increase (%) by user (10, 20, 30, 40, 50) • Significant incident increase by user (10, 20, 30, 40, 50) • Significant incident increase (%) by source IP address (10, 20, 30, 40, 50) • Significant incident increase by source IP address (10, 20, 30, 40, 50) • Significant incident increase (%) by template (10, 20, 30, 40, 50) • Significant incident increase by template (10, 20, 30, 40, 50)

Adding One-time Reports

Control Manager supports generating one-time reports from Control Manager 3 and Control Manager 5 report templates. Users need to create Control Manager 5 report templates, while Trend Micro created Control Manager 3 report templates. The process for creating a one-time report is similar for all report types and involves the following:

1. Access the **Add One-time Report** screen and select the report type.

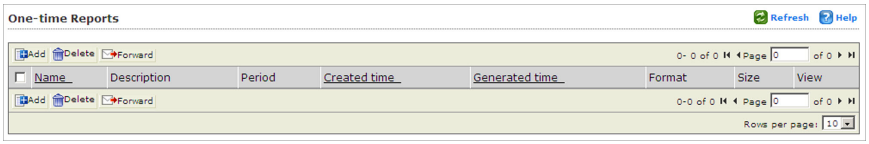
2. Specify the product/products from which the report data generates.
3. Specify the date when the product/products produced the data.
4. Specify the recipient of the report.

Step 1: Access the Add One-time Report Screen and Select the Report Type

Procedure

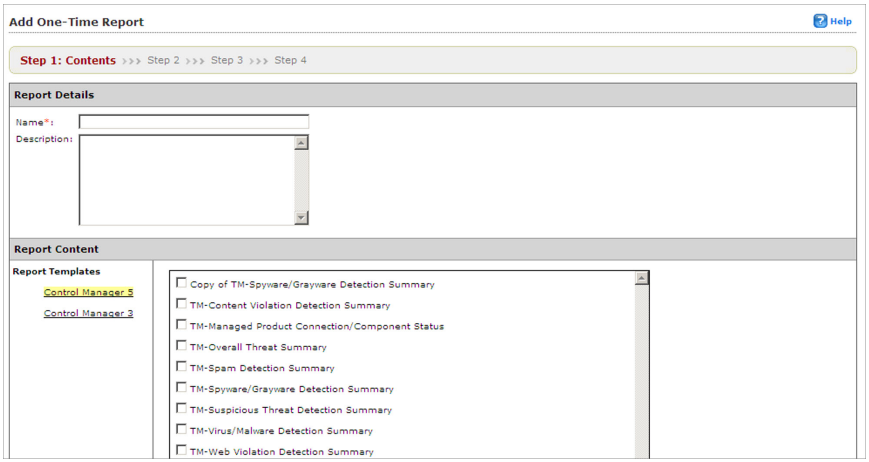
1. Navigate to **Reports** > **One-time Reports**.

   The **One-time Reports** screen appears.



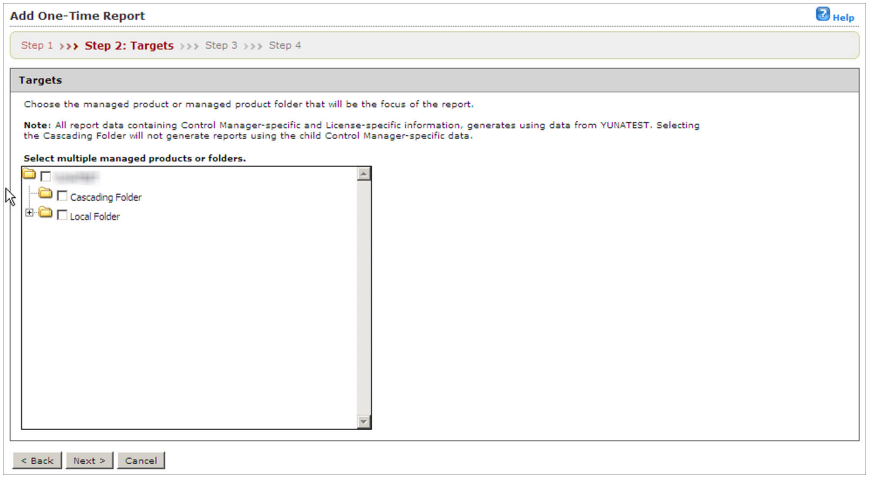
2. Click **Add**.

   The **Add One-time Report > Step 1: Contents** screen appears.



3. Type a name for the report in the **Name** field, under Report Details.
4. Type a description for the report in the **Description** field, under Report Details.
5. Select the Control Manager template to generate the report:
   - **Control Manager 5 report template**:
     a. Select the Control Manager 5 template to generate the report. If the existing reports do not fulfill your requirements, create one from the **Report Templates** screen.
   - **Control Manager 3 report template**:
     a. Click **Control Manager 3** under Report Content. The Control Manager 3 templates appear in the work area to the right, under Report Content.
     b. Select the report category on which to base the report.
     c. Select the Control Manager 3 template data on which to base the template.
6. Select the report generation format:
   - **Control Manager 5 report formats**:
     - Adobe PDF Format (*.pdf)
     - HTML Format (*.html)
     - XML Format (*.xml)
     - CSV Format (*.csv)
   - **Control Manager 3 report formats**:
     - Rich Text Format (*.rtf)
     - Adobe PDF Format (*.pdf)
     - ActiveX
     - Crystal Report Format (*.rpt)
7. Click **Next**.

The **Add One-Time Report > Step 2: Targets** screen appears.

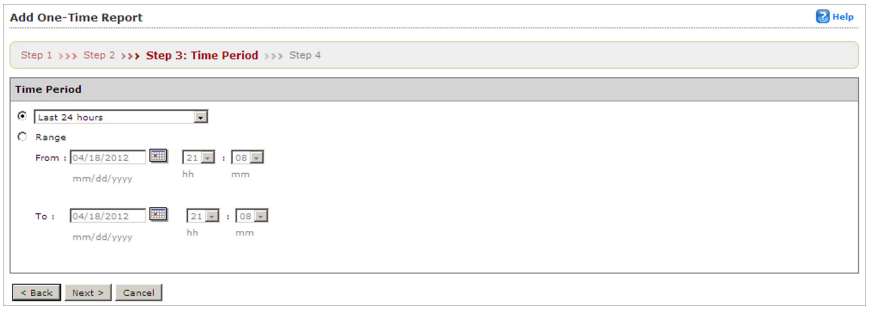


Step 2: Specify the Product/Products From Which the Report Data Generates:

Procedure

1. Select the managed product or directory from which Control Manager gathers the report information.
2. If the report contains data from a Network VirusWall Enforcer device, specify the clients from which the reports generate:
   - **All clients**: Reports generate from all Network VirusWall Enforcer devices
   - **IP range**: Reports generate from a specific IP address range
   - **Segment**: Reports generate from a specific network segment
3. Click **Next**.

   The **Add One-Time Report > Step 3: Time Period** screen appears.



Step 3: Specify the Date That the Product/Products Produced the Data:

Procedure

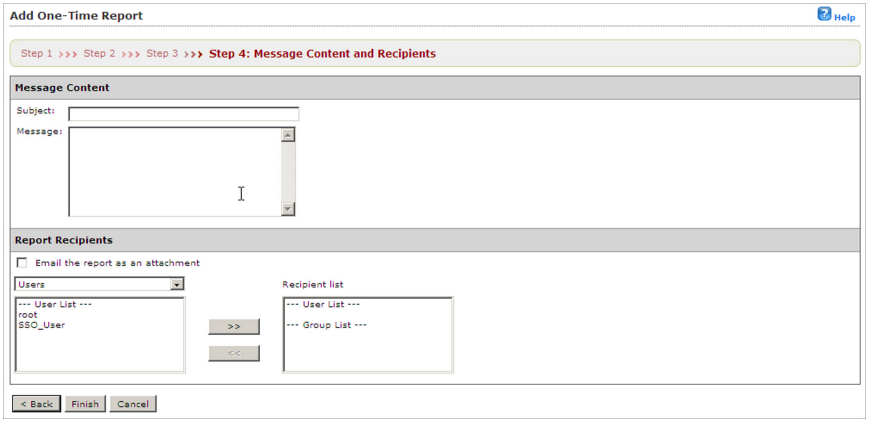
1. Specify the data generation date:
   - From the drop down list select one of the following:
     - All dates
     - Last 24 hours
     - Today
     - Last 7 days
     - Last 14 days
     - Last 30 days
   - Specify a date range:
     - Type a date in the **From** field.
     - Specify a time in the accompanying **hh** and **mm** fields.
     - Type a date in the **To** field.
     - Specify a time in the accompanying **hh** and **mm** fields.

Note

Click the calendar icon next to the **From** and **To** fields to use a dynamic calendar to specify the date range.

2. Click **Next**.

   The **Add Onetime Report > Step 4: Message Content and Recipients screen** appears.



Step 4: Specify the Recipient of the Report:

Procedure

1. Type a title for the email message that contains the report in the **Subject** field.
2. Type a description about the report in the **Message** field.
3. Select **Email the report as an attachment** to enable sending the report to a specified recipient.
4. Specify to select users or groups from the **Report Recipients** list.
5. Select the users/groups to receive the report and click the **>>** button.

6. Click **Finish** after selecting all users/groups to receive the report.

Adding Scheduled Reports

Control Manager supports generating scheduled reports from Control Manager 3 and Control Manager 5 report templates. Users need to create Control Manager 5 report templates, while Trend Micro created Control Manager 3 report templates. The process for creating a scheduled report is similar for all report types:

1. Access the **Add Scheduled Report** screen and select the report type.
2. Specify the product/products from which the report data generates.
3. Specify the date when the product/products produced the data.
4. Specify the recipient of the report.

Step 1: Access the Add Scheduled Report Screen and Select the Report Type

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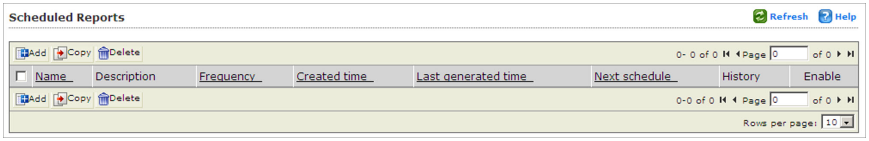
Procedure

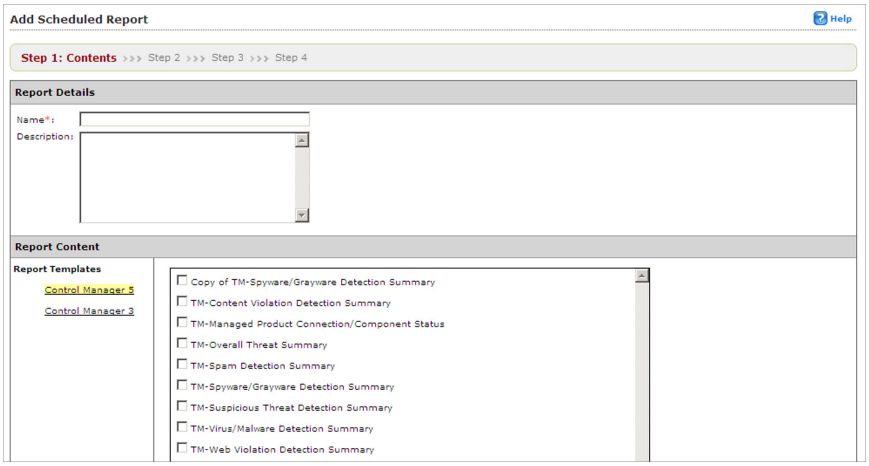
1. Navigate to **Reports** > **Scheduled Reports**.

   The **Scheduled Reports** screen appears.



2. Click **Add**.

   The **Add Scheduled Report > Step 1: Contents** screen appears.



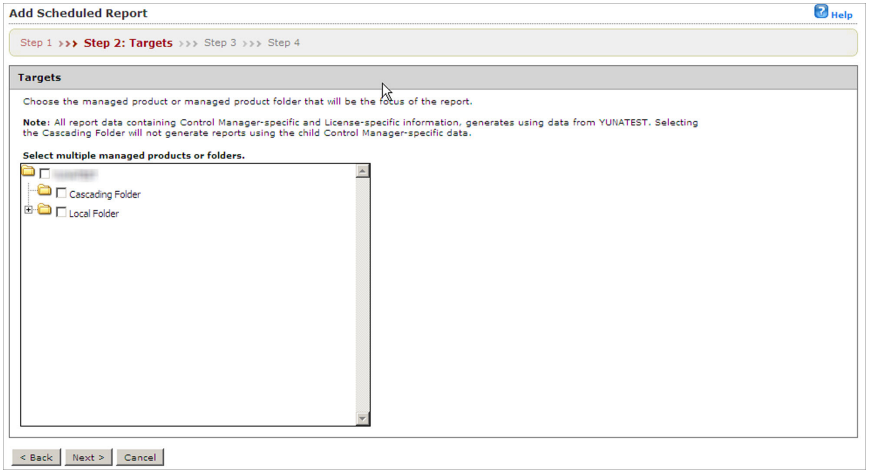
3. Type a name for the report in the **Name** field.
4. Type a meaningful description for the report in the **Description** field.
5. Select the Control Manager template to generate the report:
   - Control Manager 5 report template:
     a. Select the Control Manager 5 template to generate the report. If the existing reports do not fulfill your requirements, create one from the Report Templates screen.
   - Control Manager 3 report template:
     a. Click **Control Manager 3** under Report Content. The Control Manager 3 templates appear in the work area to the right, under Report Content.
     b. Select the report category on which to base the report.
     c. Select the Control Manager 3 template data on which to base the template.
6. Select the report generation format:
   - Control Manager 5 report formats:
     - Adobe PDF Format (*.pdf)

- HTML Format (*.html)
- XML Format (*.xml)
- CSV Format (*.csv)

- Control Manager 3 report formats:
  - Rich Text Format (*.rtf)
  - Adobe PDF Format (*.pdf)
  - ActiveX
  - Crystal Report Format (*.rpt)

7. Click **Next**.

   The **Add Scheduled Report > Step 2: Targets** screen appears.



Step 2: Specify the Product/Products from Which the Report Data Generates

Procedure

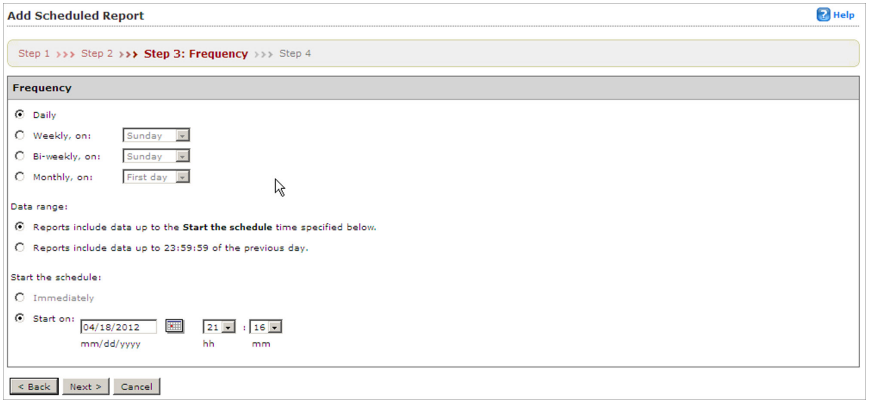
1. Select the managed product or directory from which Control Manager gathers the report information.

2. If the report contains data from a Network VirusWall Enforcer device, specify the clients from which the reports generate:

   - **All clients**: Reports generate from all Network VirusWall Enforcer devices
   - **IP range**: Reports generate from a specific IP address range
   - **Segment**: Reports generate from a specific network segment

3. Click **Next**.

   The **Add One-Time Report > Step 3: Frequency** screen appears.



Step 3: Specify the Date that the Product/Products Produced the Data

Procedure

1. Specify how often reports generate:
   - **Daily**: Reports generate daily.
   - **Weekly**: Reports generate weekly on the specified day.
   - **Bi-weekly**: Reports generate every two weeks on the specified day.
   - **Monthly**: Reports generate monthly on the first day of the month, the 15th of the month, or the last day of the month.
2. Specify the data range:
   - **Reports include data up to the Start the schedule time specified below**: This means that a report could have up to 23 hours more data contained in the report. While this has a small affect on weekly or monthly reports, this can make a "daily" report with almost two days worth of data depending on the Start schedule time.
   - **Reports include data up to 23:59:59 of the previous day**: This means that data collection for the report stops just before midnight. Reports will be an exact time period (example: Daily reports will be 24 hours) but will not contain the absolute latest data.
3. Specify when the report schedule starts:
   - **Immediately**: The report schedule starts immediately after enabling the report.
   - **Start on**: The report schedule starts on the date and time specified in the accompanying fields.

   a. Type a date in the **mm/dd/yyyy** field.

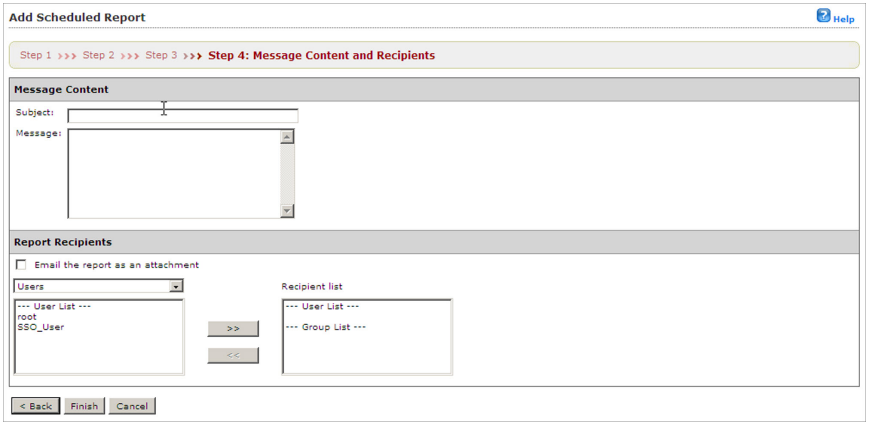
   b. Specify a time in the accompanying **hh** and **mm** fields.

Note

Click the calendar icon next to the **mm/dd/yyyy** field to use a dynamic calendar to specify the date range.

4. Click **Next**.

   The **Add Scheduled Report > Step 4: Message Content and Recipients** screen appears.



Step 4: Specify the Recipient of the Report

Procedure

1. Type a title for the email message that contains the report in the **Subject** field.
2. Type a description about the report in the **Message** field.
3. Select **Email the report as an attachment** to enable sending the report to a specified recipient.
4. Specify to select users or groups from the **Report Recipients** list.
5. Select the users/groups to receive the report and click the **>>** button.

6. Click **Finish** after selecting all users/groups to receive the report.

Appendix B

PolicyServer Message IDs

The following table explains PolicyServer error messages. Use it to find a Message ID, to understand the associated message meaning, the category of the message, and which agents/products the message affects.

Table B-1. PolicyServer Message IDs

Category	Message ID	Description	Products
Administrator Alerts	100002	Identifying Device	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Administrator Alerts	100003	Security Violation	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Administrator Alerts	100007	Critical Severity	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer

Category	Message ID	Description	Products
Administrator Alerts	100019	Policy Change Unsuccessful	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Administrator Alerts	100045	Unsupported configuration	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Administrator Alerts	100046	Enterprise Pool created	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Administrator Alerts	100047	Enterprise Pool deleted	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Administrator Alerts	100048	Enterprise Pool modified	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Administrator Alerts	100049	Admin User locked due to too many failed logins.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Administrator Alerts	100052	Policy Value Integrity Check Failed	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer

Category	Message ID	Description	Products
Administrator Alerts	100053	Policy request aborted due to failed policy integrity check.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Administrator Alerts	100054	File request aborted due to failed policy integrity check.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Administrator Alerts	100055	Admin Authentication Succeeded	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Administrator Alerts	100056	Admin Authentication Failed	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Administrator Alerts	100062	Admin Password Reset	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Administrator Alerts	100463	Unable to remove user. Try again.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Administrator Alerts	100464	Unable to unable user. Try again.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer

Category	Message ID	Description	Products
Administrator Alerts	100470	Unable to change Self Help password. A response to one of the personal challenge questions was incorrect.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Administrator Alerts	102000	Enterprise Added	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Administrator Alerts	102001	Enterprise Deleted	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Administrator Alerts	102002	Enterprise Modified	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Administrator Alerts	102003	The number of users has exceeded the maximum allowed by this license. Reduce the number of existing users to restore this user account.	PolicyServer
Administrator Alerts	200000	Administrator updated policy	PolicyServer
Administrator Alerts	200001	Administrator added policy	PolicyServer
Administrator Alerts	200002	Administrator deleted policy	PolicyServer

Category	Message ID	Description	Products
Administrator Alerts	200003	Administrator enabled application	PolicyServer
Administrator Alerts	200004	Administrator disabled application	PolicyServer
Administrator Alerts	200100	Administrator added user	PolicyServer
Administrator Alerts	200101	Administrator deleted user	PolicyServer
Administrator Alerts	200102	Administrator updated user	PolicyServer
Administrator Alerts	200103	Administrator added user to group	PolicyServer
Administrator Alerts	200104	Administrator removed user from group	PolicyServer
Administrator Alerts	200200	User added	PolicyServer
Administrator Alerts	200201	User deleted	PolicyServer
Administrator Alerts	200202	User added to group	PolicyServer
Administrator Alerts	200203	User removed from group	PolicyServer
Administrator Alerts	200204	User updated	PolicyServer
Administrator Alerts	200300	Administrator deleted device	PolicyServer
Administrator Alerts	200301	Administrator added device to group	PolicyServer
Administrator Alerts	200302	Administrator removed device from group	PolicyServer

Category	Message ID	Description	Products
Administrator Alerts	200500	Administrator added group	PolicyServer
Administrator Alerts	200501	Administrator deleted group	PolicyServer
Administrator Alerts	200502	Administrator updated group	PolicyServer
Administrator Alerts	200503	Administrator copy/ pasted group	PolicyServer
Administrator Alerts	200600	PolicyServer update applied.	PolicyServer
Administrator Alerts	200602	User added to device	PolicyServer
Administrator Alerts	200603	User removed from device	PolicyServer
Administrator Alerts	200700	Event executed successfully	PolicyServer
Administrator Alerts	200701	Failed event execution	PolicyServer
Administrator Alerts	200800	Event installed successfully	PolicyServer
Administrator Alerts	200801	Failed to install event	PolicyServer
Administrator Alerts	700012	Administrator Logged In Using One Time Password	File Encryption SP6 or Earlier
Administrator Alerts	700013	Administrator Logged In Using Fixed Password	File Encryption SP6 or Earlier

Category	Message ID	Description	Products
Administrator Alerts	700014	Administrator Logged In using Smart Card	File Encryption SP6 or Earlier
Administrator Alerts	700017	Administrator Logged In Using Remote Authentication	File Encryption SP6 or Earlier
Administrator Alerts	700030	Administrator Failed log In Using One Time Password	File Encryption SP6 or Earlier
Administrator Alerts	700031	Administrator Failed log In Using Fixed Password	File Encryption SP6 or Earlier
Administrator Alerts	700032	Administrator Failed log In using Smart Card	File Encryption SP6 or Earlier
Administrator Alerts	700035	Administrator Failed log In Using Remote Authentication	File Encryption SP6 or Earlier
Administrator Alerts	900100	Administrator logged in using one-time password.	KeyArmor
Administrator Alerts	900101	Administrator logged in using fixed password.	KeyArmor
Administrator Alerts	900102	Administrator logged in using Smart Card.	KeyArmor
Administrator Alerts	900103	Administrator logged in using domain authentication.	KeyArmor

Category	Message ID	Description	Products
Administrator Alerts	900104	Administrator logged in using remote authentication.	KeyArmor
Administrator Alerts	900105	Administrator logged in using ColorCode authentication.	KeyArmor
Administrator Alerts	900106	Administrator logged in using PIN.	KeyArmor
Administrator Alerts	900107	Administrator logged in using OCSP.	KeyArmor
Administrator Alerts	900250	Administrator Failed To Login Using One Time Password	KeyArmor
Administrator Alerts	900251	Administrator Failed To Login Using Fixed Password	KeyArmor
Administrator Alerts	900252	Administrator Failed To Login Using Smart Card	KeyArmor
Administrator Alerts	900253	Administrator failed to login using domain authentication.	KeyArmor
Administrator Alerts	900254	Administrator Failed To Login Using Remote Authentication	KeyArmor
Administrator Alerts	900255	Administrator failed to login using ColorCode authentication.	KeyArmor

Category	Message ID	Description	Products
Administrator Alerts	900256	Administrator failed to login using PIN.	KeyArmor
Administrator Alerts	900257	Administrator Failed To Login Using OCSP	KeyArmor
Administrator Alerts	900300	Administrator Failed log In Using Remote Authentication	KeyArmor
Administrator Alerts	901000	Administrator Renamed A File	KeyArmor
Administrator Alerts	901001	Administrator Changed A File	KeyArmor
Administrator Alerts	901002	Administrator Deleted A File	KeyArmor
Administrator Alerts	901003	Administrator Created A File	KeyArmor
Audit Log Alerts	100015	Log Message	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Audit Log Alerts	103000	Audit Log Connection Opened	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Audit Log Alerts	103001	Audit Log Connection Closed	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer

Category	Message ID	Description	Products
Audit Log Alerts	103100	Audit Log Record Missing	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Audit Log Alerts	103101	Audit Log Record Integrity Missing	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Audit Log Alerts	103102	Audit Log Record Integrity Compromised	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Audit Log Alerts	103103	Audit Log Record Integrity Validation Started	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Audit Log Alerts	104003	Authentication method set to SmartCard.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Audit Log Alerts	904008	Unable To Send Log Alert	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Authenticator Alerts	700006	Authenticator Logged In Using One Time Password	File Encryption SP6 or Earlier

Category	Message ID	Description	Products
Authenticator Alerts	700007	Authenticator Logged In Using Fixed Password	File Encryption SP6 or Earlier
Authenticator Alerts	700008	Authenticator Logged In using Smart Card	File Encryption SP6 or Earlier
Authenticator Alerts	700009	Authenticator Logged In using Windows Credentials	File Encryption SP6 or Earlier
Authenticator Alerts	700011	Authenticator Logged In Using Remote Authentication	File Encryption SP6 or Earlier
Authenticator Alerts	700024	Authenticator Failed log In Using One Time Password	File Encryption SP6 or Earlier
Authenticator Alerts	700025	Authenticator Failed log In Using Fixed Password	File Encryption SP6 or Earlier
Authenticator Alerts	700026	Authenticator Failed log In using Smart Card	File Encryption SP6 or Earlier
Authenticator Alerts	700027	Authenticator Failed log In using Windows Credentials	File Encryption SP6 or Earlier
Authenticator Alerts	700029	Authenticator Failed log In Using Remote Authentication	File Encryption SP6 or Earlier
Authenticator Alerts	900050	Authenticator logged in using one-time password.	KeyArmor

Category	Message ID	Description	Products
Authenticator Alerts	900051	Authenticator logged in using fixed password.	KeyArmor
Authenticator Alerts	900052	Authenticator logged in using Smart Card.	KeyArmor
Authenticator Alerts	900053	Authenticator logged in using domain authentication.	KeyArmor
Authenticator Alerts	900054	Authenticator logged in using remote authentication.	KeyArmor
Authenticator Alerts	900055	Authenticator logged in using ColorCode authentication.	KeyArmor
Authenticator Alerts	900056	Authenticator logged in using PIN.	KeyArmor
Authenticator Alerts	900057	Authenticator logged in using OCSP.	KeyArmor
Authenticator Alerts	900161	User Failed To Login Using Self Help	KeyArmor
Authenticator Alerts	900200	Authenticator Failed To Login Using One Time Password	KeyArmor
Authenticator Alerts	900201	Authenticator Failed To Login Using Fixed Password	KeyArmor

Category	Message ID	Description	Products
Authenticator Alerts	900202	Authenticator Failed To Login Using Smart Card	KeyArmor
Authenticator Alerts	900203	Authenticator failed to login using domain authentication.	KeyArmor
Authenticator Alerts	900204	Authenticator Failed To Login Using Remote Authentication	KeyArmor
Authenticator Alerts	900205	Authenticator failed to login using ColorCode authentication.	KeyArmor
Authenticator Alerts	900206	Authenticator failed to login using PIN.	KeyArmor
Authenticator Alerts	900207	Authenticator Failed To Login Using OCSP	KeyArmor
Authenticator Alerts	902000	Authenticator Renamed A File	KeyArmor
Authenticator Alerts	902001	Authenticator Changed A File	KeyArmor
Authenticator Alerts	902002	Authenticator Deleted A File	KeyArmor
Authenticator Alerts	902003	Authenticator Created A File	KeyArmor
Certificate Alerts	104008	Certificate expired.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer

Category	Message ID	Description	Products
Device Alerts	100001	PDA to Desktop Sync Authentication was unsuccessful. There was no device ID for this PDA found.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Device Alerts	100012	Device is not in its own Password Authentication File. PAF corrupted?	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Device Alerts	100044	Lock Device Action Received	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Device Alerts	100071	Device Kill Confirmed	KeyArmor
Device Alerts	100072	Device Lock Confirmed	KeyArmor
Device Alerts	100100	Install Started	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor
Device Alerts	100101	Install Completed	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor
Device Alerts	100462	Unable to connect to PolicyServer.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer

Category	Message ID	Description	Products
Device Alerts	101001	The network connection is not working. Unable to get policy files from PolicyServer.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Device Alerts	101002	Corrupted PAF (DAFolder.xml) file	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Device Alerts	105000	Unable to synchronize policies with client. Verify that there is a network connection and try again.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Device Alerts	200400	Device added	PolicyServer
Device Alerts	200401	Device deleted	PolicyServer
Device Alerts	200402	Device added to group	PolicyServer
Device Alerts	200403	Device removed from group	PolicyServer
Device Alerts	200404	Device modified	PolicyServer
Device Alerts	200405	Device status updated	PolicyServer
Device Alerts	200406	Device status reset	PolicyServer
Device Alerts	200407	Device Kill Issued	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer

Category	Message ID	Description	Products
Device Alerts	200408	Device Lock Issued	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Device Alerts	200409	Device Synchronized	PolicyServer
Device Alerts	904012	User Not Allowed To Register New Device	PolicyServer
Device Alerts	1000052	Uninstall of product	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor
Device Alerts	1000053	Product Uninstall Denied By Policy	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor
Error Alerts	100005	General Error	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Error Alerts	100006	Application Error	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
File Encryption Activity Alerts	700000	User Logged In Using One Time Password	File Encryption SP6 or Earlier
File Encryption Activity Alerts	700001	User Logged In Using Fixed Password	File Encryption SP6 or Earlier

Category	Message ID	Description	Products
File Encryption Activity Alerts	700002	User Logged In using Smart Card	File Encryption SP6 or Earlier
File Encryption Activity Alerts	700003	User Logged In using Windows Credentials	File Encryption SP6 or Earlier
File Encryption Activity Alerts	700005	User Logged In Using Remote Authentication	File Encryption SP6 or Earlier
File Encryption Activity Alerts	700015	Administrator Logged In using Windows Credentials	File Encryption SP6 or Earlier
File Encryption Activity Alerts	700018	User Failed log In Using One Time Password	File Encryption SP6 or Earlier
File Encryption Activity Alerts	700019	User Failed log In Using Fixed Password	File Encryption SP6 or Earlier
File Encryption Activity Alerts	700020	User Failed log In using Smart Card	File Encryption SP6 or Earlier
File Encryption Activity Alerts	700021	User Failed log In using Windows Credentials	File Encryption SP6 or Earlier
File Encryption Activity Alerts	700023	User Could not log In Using Remote Authentication	File Encryption SP6 or Earlier
File Encryption Activity Alerts	700033	Administrator Failed log In using Windows Credentials	File Encryption SP6 or Earlier
File Encryption Activity Alerts	700036	Failed Login Attempts Exceeded	File Encryption SP6 or Earlier

Category	Message ID	Description	Products
File Encryption Activity Alerts	701000	Encrypted File Using User Key	File Encryption SP6 or Earlier
File Encryption Activity Alerts	701001	Encrypted File Using Group Key	File Encryption SP6 or Earlier
File Encryption Activity Alerts	701002	Encrypted File Using Static Password	File Encryption SP6 or Earlier
File Encryption Activity Alerts	701003	Self-extracting encrypted file created using a static password.	File Encryption SP6 or Earlier
File Encryption Activity Alerts	701004	Encrypted File Using Cert	File Encryption SP6 or Earlier
File Encryption Activity Alerts	701005	Self-extracting encrypted file created using certificate.	File Encryption SP6 or Earlier
File Encryption Activity Alerts	701006	Encrypted File Using CD/DVD Burning	File Encryption SP6 or Earlier
File Encryption Activity Alerts	701007	Encrypted Directory Using Group Key	File Encryption SP6 or Earlier
File Encryption Activity Alerts	701008	Encrypted Directory Using Static Password	File Encryption SP6 or Earlier
File Encryption Activity Alerts	701009	Self-extracting encrypted directory created using a static password.	File Encryption SP6 or Earlier
File Encryption Activity Alerts	701010	Encrypted Directory Using Cert	File Encryption SP6 or Earlier

Category	Message ID	Description	Products
File Encryption Activity Alerts	701011	Self-extracting encrypted directory created using certificate.	File Encryption SP6 or Earlier
File Encryption Activity Alerts	701012	Encrypted Directory Using CD/DVD Burning	File Encryption SP6 or Earlier
File Encryption Activity Alerts	701015	Removable Media was fully encrypted	File Encryption SP6 or Earlier
File Encryption Activity Alerts	701016	Removable Media Blocked	File Encryption SP6 or Earlier
File Encryption Activity Alerts	701017	Removable Media Created and Covered Folders	File Encryption SP6 or Earlier
File Encryption Activity Alerts	701018	File encrypted and moved to removable media.	File Encryption SP6 or Earlier
File Encryption Activity Alerts	701019	File deleted from removable media.	File Encryption SP6 or Earlier
File Encryption Activity Alerts	703000	File Armor Encrypted Folder Was Created	File Encryption SP6 or Earlier
File Encryption Activity Alerts	703001	Folder Was Created and Covered	File Encryption SP6 or Earlier
File Encryption Activity Alerts	703002	File Armor Encrypted Folder Was Deleted	File Encryption SP6 or Earlier
File Encryption Activity Alerts	703004	Removable Media Folder was Created and Covered	File Encryption SP6 or Earlier

Category	Message ID	Description	Products
File Encryption Activity Alerts	703005	Removable Media Device Was Fully Encrypted	File Encryption SP6 or Earlier
File Encryption Activity Alerts	703006	File In Folder Was Created	File Encryption SP6 or Earlier
File Encryption Activity Alerts	703007	File in Folder Was Deleted	File Encryption SP6 or Earlier
File Encryption Activity Alerts	703008	File in Folder Was Changed	File Encryption SP6 or Earlier
File Encryption Activity Alerts	703009	File in Folder Was Accessed	File Encryption SP6 or Earlier
File Encryption Activity Alerts	703010	File in Folder Was Last Written	File Encryption SP6 or Earlier
File Encryption Activity Alerts	703011	File Size Changed in Folder	File Encryption SP6 or Earlier
File Encryption Activity Alerts	703015	Folder Encryption Started	File Encryption SP6 or Earlier
File Encryption Activity Alerts	703016	Folder Decryption Started	File Encryption SP6 or Earlier
File Encryption Activity Alerts	703017	Folder Encryption Complete	File Encryption SP6 or Earlier
File Encryption Activity Alerts	703018	Folder Decryption Complete	File Encryption SP6 or Earlier
File Encryption Activity Alerts	703019	Folder Decryption In progress	File Encryption SP6 or Earlier
File Encryption Activity Alerts	703020	Folder Encryption In progress	File Encryption SP6 or Earlier
File Encryption Activity Alerts	704000	File Encryption Service Started	File Encryption SP6 or Earlier

Category	Message ID	Description	Products
File Encryption Activity Alerts	704001	File Encryption Service Shutdown	File Encryption SP6 or Earlier
Full Disk Encryption Activity Alerts	300700	Device log maximum size limit reached, event log truncated.	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	400001	User has successfully logged in.	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	400002	User login failed.	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	400003	Device decryption started.	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	400004	Device Encryption Started.	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	400005	Mounted encrypted partition.	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	400006	Restored native OS MBR.	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	400007	Restored Application MBR.	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	400008	Device encryption complete	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	400009	Device Decryption Completed	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	400010	Device Encryption In Progress	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	400011	System MBR Corrupt	Full Disk Encryption or MobileSentinel

Category	Message ID	Description	Products
Full Disk Encryption Activity Alerts	400012	System Pre-boot Kernel Deleted	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401000	Recovery Console accessed	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401009	Recovery Console error	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401010	Decryption in place started	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401011	Decryption in place stopped	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401012	Decryption in place complete	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401013	Decryption of removable device started	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401014	Decryption to removable device stopped	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401015	Decryption to removable device complete	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401018	Decryption in place error	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401019	Decryption to removable device error	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401020	Encrypted files accessed	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401021	Encrypted files modified	Full Disk Encryption or MobileSentinel

Category	Message ID	Description	Products
Full Disk Encryption Activity Alerts	401022	Encrypted files copied to removable device	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401029	Encrypted files access error	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401030	Network administration accessed	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401031	PolicyServer address changed	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401032	PolicyServer port number changed	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401033	Switched to IPv6	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401034	Switched to IPv4	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401035	Switched to dynamic IP configuration	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401036	Switched to static IP configuration	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401037	DHCP port number changed	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401038	IP address changed	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401039	NetMask changed	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401040	Broadcast address changed	Full Disk Encryption or MobileSentinel

Category	Message ID	Description	Products
Full Disk Encryption Activity Alerts	401041	Gateway changed	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401042	Domain name changed	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401043	Domain name servers changed	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401049	Network administration error	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401050	User administration accessed	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401051	User added	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401052	User removed	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401053	User modified	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401069	User administration error	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401070	Locally stored logs accessed	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401079	Locally stored logs access error	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401080	Original MBR restored	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401089	Original MBR restoration error	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401090	Default theme restored	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	401099	Default theme restoration error	Full Disk Encryption or MobileSentinel

Category	Message ID	Description	Products
Full Disk Encryption Activity Alerts	402000	Application Startup	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	402001	Application Shutdown	Full Disk Encryption or MobileSentinel
Full Disk Encryption Activity Alerts	600001	Update was successful in the Pre-boot.	Full Disk Encryption
Full Disk Encryption Activity Alerts	600002	Pre-boot Update failed	Full Disk Encryption
Installation Alerts	100004	Install Error	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Installation Alerts	100020	Successful Installation	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Installation Alerts	700037	Installation of File Encryption was successful	File Encryption SP6 or Earlier
Installation Alerts	700038	Installation of File Encryption was unsuccessful: Enterprise name is not valid.	File Encryption SP6 or Earlier
Installation Alerts	700039	Installation of File Encryption was unsuccessful: Username or password is incorrect.	File Encryption SP6 or Earlier

Category	Message ID	Description	Products
KeyArmorActivity Alerts	100034	Invalid Registry Setting Detected	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
KeyArmorActivity Alerts	500000	VirusDefense	KeyArmor
KeyArmorActivity Alerts	500001	Object Cleaned	KeyArmor
KeyArmorActivity Alerts	500002	Object Disinfected	KeyArmor
KeyArmorActivity Alerts	500003	Object Quarantined	KeyArmor
KeyArmorActivity Alerts	500004	Object Deleted	KeyArmor
KeyArmorActivity Alerts	500005	Virus Detected	KeyArmor
KeyArmorActivity Alerts	500006	Full Scan Started	KeyArmor
KeyArmorActivity Alerts	500007	Full Scan Completed	KeyArmor
KeyArmorActivity Alerts	500008	Object Suspicious	KeyArmor
KeyArmorActivity Alerts	500009	Object Scan Completed	KeyArmor
KeyArmorActivity Alerts	500010	Removable Media Scan Requested	KeyArmor
KeyArmorActivity Alerts	500011	Removable Media Scan Completed	KeyArmor
KeyArmorActivity Alerts	500012	Folder Scan Requested	KeyArmor
KeyArmorActivity Alerts	500013	Folder Scan Completed	KeyArmor
KeyArmorActivity Alerts	500014	Access Denied To Object	KeyArmor
KeyArmorActivity Alerts	500015	Object Corrupt	KeyArmor

Category	Message ID	Description	Products
KeyArmorActivity Alerts	500016	Object Clean	KeyArmor
KeyArmorActivity Alerts	500017	Full Scan Cancelled	KeyArmor
KeyArmorActivity Alerts	500018	Object Scan Cancelled	KeyArmor
KeyArmorActivity Alerts	500019	Removable Media Scan Cancelled	KeyArmor
KeyArmorActivity Alerts	500020	Folder Scan Cancelled	KeyArmor
KeyArmorActivity Alerts	500021	Update Started	KeyArmor
KeyArmorActivity Alerts	500022	The update was unsuccessful. Try again.	KeyArmor
KeyArmorActivity Alerts	500023	Update Cancelled	KeyArmor
KeyArmorActivity Alerts	500024	Update Successful.	KeyArmor
KeyArmorActivity Alerts	500025	VirusDefense Up To Date	KeyArmor
KeyArmorActivity Alerts	500026	PalmVirusDefense	KeyArmor
KeyArmorActivity Alerts	500027	Object Scan Requested	KeyArmor
KeyArmorActivity Alerts	500028	PPCVirusDefense	KeyArmor
KeyArmorActivity Alerts	900000	User logged in using one-time password.	KeyArmor
KeyArmorActivity Alerts	900001	User logged in using fixed password.	KeyArmor
KeyArmorActivity Alerts	900002	User logged in using Smart Card.	KeyArmor

Category	Message ID	Description	Products
KeyArmorActivity Alerts	900003	User logged in using domain authentication.	KeyArmor
KeyArmorActivity Alerts	900004	User logged in using remote authentication.	KeyArmor
KeyArmorActivity Alerts	900005	User logged in using ColorCode authentication.	KeyArmor
KeyArmorActivity Alerts	900006	User logged in using PIN.	KeyArmor
KeyArmorActivity Alerts	900007	User logged in using OCSP	KeyArmor
KeyArmorActivity Alerts	900008	User logged in using Self Help.	KeyArmor
KeyArmorActivity Alerts	900009	User logged in using RSA	KeyArmor
KeyArmorActivity Alerts	900150	User Failed To Login Using One Time Password	KeyArmor
KeyArmorActivity Alerts	900151	User Failed To Login Using Fixed Password	KeyArmor
KeyArmorActivity Alerts	900152	User Failed To Login Using Smart Card	KeyArmor
KeyArmorActivity Alerts	900153	User failed to login using domain authentication.	KeyArmor
KeyArmorActivity Alerts	900154	User Failed To Login Using Remote Authentication	KeyArmor

Category	Message ID	Description	Products
KeyArmorActivity Alerts	900155	User failed to login using ColorCode authentication.	KeyArmor
KeyArmorActivity Alerts	900156	User failed to login using PIN.	KeyArmor
KeyArmorActivity Alerts	900157	User Failed To Login Using OCSP	KeyArmor
KeyArmorActivity Alerts	900158	User locked out after too many failed login attempts.	KeyArmor
KeyArmorActivity Alerts	900301	Failed Login Attempts Exceeded	KeyArmor
KeyArmorActivity Alerts	900350	Key Wiped	KeyArmor
KeyArmorActivity Alerts	903000	User Renamed A File	KeyArmor
KeyArmorActivity Alerts	903001	User Changed A File	KeyArmor
KeyArmorActivity Alerts	903002	User Deleted A File	KeyArmor
KeyArmorActivity Alerts	903003	User Created A File	KeyArmor
KeyArmorActivity Alerts	903100	Primary action enforced due to no PolicyServer connection.	KeyArmor
KeyArmorActivity Alerts	903101	Secondary action enforced due to no PolicyServer connection.	KeyArmor
KeyArmorActivity Alerts	903102	Policy updates applied	KeyArmor

Category	Message ID	Description	Products
KeyArmorActivity Alerts	904000	Repaired infected file	KeyArmor
KeyArmorActivity Alerts	904001	Unable to repair infected file.	KeyArmor
KeyArmorActivity Alerts	904002	Skipping infected file, repair unsupported	KeyArmor
KeyArmorActivity Alerts	904003	Deleted infected file	KeyArmor
KeyArmorActivity Alerts	904004	Unable to delete infected file.	KeyArmor
KeyArmorActivity Alerts	904005	Killing device due to infected file	KeyArmor
KeyArmorActivity Alerts	904006	Error killing device due to infected file	KeyArmor
KeyArmorActivity Alerts	904007	Invoking infected file fall-back action	KeyArmor
KeyArmorActivity Alerts	904010	AntiVirus files updated	KeyArmor
KeyArmorActivity Alerts	904011	Unable to update antivirus files.	KeyArmor
Login / Logout Alerts	100013	Failed Login Attempt	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Login / Logout Alerts	100014	Successful Login	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer

Category	Message ID	Description	Products
Login / Logout Alerts	100016	Unable to log in. Use Remote Authentication to provide the PolicyServer Administrator with a challenge code.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Login / Logout Alerts	100021	Unsuccessful ColorCode Login	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Login / Logout Alerts	100022	Unsuccessful Fixed Password Login	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Login / Logout Alerts	100023	Unsuccessful PIN Login	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Login / Logout Alerts	100024	Unsuccessful X99 Login	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Login / Logout Alerts	100028	Successful ColorCode Login	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer

Category	Message ID	Description	Products
Login / Logout Alerts	100031	Successful X9.9 Login	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Login / Logout Alerts	100032	Successful Remote Login	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Login / Logout Alerts	100035	Successful WebToken Login	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Login / Logout Alerts	100036	Unsuccessful WebToken Login	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Login / Logout Alerts	100050	Fixed Password login blocked due to lockout.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Login / Logout Alerts	100051	User Login Successfully Unlocked	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Login / Logout Alerts	100057	LDAP User Authentication Succeeded	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer

Category	Message ID	Description	Products
Login / Logout Alerts	100058	LDAP User Authentication Failed	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Login / Logout Alerts	100059	LDAP User Password Change Succeeded	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Login / Logout Alerts	100060	LDAP User Password Change Failed	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Login / Logout Alerts	100061	Access request aborted due to failed policy integrity check.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Login / Logout Alerts	100070	Successful Logout	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Login / Logout Alerts	100433	The ColorCode passwords do not match.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Login / Logout Alerts	100434	Unable to change ColorCode. The new ColorCode must be different than the current one.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer

Category	Message ID	Description	Products
Login / Logout Alerts	100435	Unable to change ColorCode. The new ColorCode must meet the minimum length requirements defined by PolicyServer.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Login / Logout Alerts	100436	Unable to change ColorCode. The new ColorCode must be different than any previous ColorCode used.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Login / Logout Alerts	100437	ColorCode Change Failure - Internal Error	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Login / Logout Alerts	100459	X9.9 Password Change Failure - Can Not Connect toPolicyServer Host	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Login / Logout Alerts	100460	X9.9 Password Change Failure - Empty Serial Number	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Login / Logout Alerts	100461	X9.9 Password Change Failure - Internal Error	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer

Category	Message ID	Description	Products
Login / Logout Alerts	101004	Unable to reset locked device.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Login / Logout Alerts	104000	Smart Card login successful.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Login / Logout Alerts	104001	Smart Card login unsuccessful. Check that the card is seated properly and that the Smart Card PIN is valid.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Mobile Device Alert	100037	Palm Policy Database is missing	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Mobile Device Alert	100038	Palm Encryption Error	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Mobile Device Alert	100039	PPC Device Encryption Changed	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Mobile Device Alert	100040	PPC Encryption Error	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer

Category	Message ID	Description	Products
MobileFirewall Activity Alerts	300000	MobileFirewall	MobileFirewall
MobileFirewall Activity Alerts	300001	DenialOfServiceAttack	MobileFirewall
OCSP Alerts	104005	OCSP certificate status good.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
OCSP Alerts	104006	OCSP certificate status revoked.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
OCSP Alerts	104007	OCSP certificate status unknown.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
OTA Alerts	100041	OTA Object Missing or Corrupt.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
OTA Alerts	100042	OTA Sync Successful	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
OTA Alerts	100043	OTA Device Killed	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer

Category	Message ID	Description	Products
Password Alerts	100017	Change Password Error	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Password Alerts	100018	Password Attempts Exceeded	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Password Alerts	100025	Password Reset to ColorCode	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Password Alerts	100026	Password Reset to Fixed	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Password Alerts	100027	Password Reset to PIN	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Password Alerts	100029	Successful Fixed Password Login	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Password Alerts	100030	Successful PIN Password Login	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer

Category	Message ID	Description	Products
Password Alerts	100033	Unable to Reset Password	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Password Alerts	100432	Unable to change password. The new password must be different than the current password.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Password Alerts	100439	Unable to change password. The passwords do not match.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Password Alerts	100441	Unable to change password. The password field cannot be empty.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Password Alerts	100442	Unable to change password. The password does not meet the minimum length requirements defined by PolicyServer.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Password Alerts	100443	Unable to change password. Numbers are not permitted.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer

Category	Message ID	Description	Products
Password Alerts	100444	Unable to change password. Letters are not permitted.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Password Alerts	100445	Unable to change password. Special characters are not permitted.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Password Alerts	100446	Unable to change password. The password cannot contain the user name.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Password Alerts	100447	Unable to change password. The password does not contain enough special characters.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Password Alerts	100448	Unable to change password. The password does not contain enough numbers.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Password Alerts	100449	Unable to change password. The password does not contain enough characters.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Password Alerts	100450	Unable to change password. The password contains too many consecutive characters.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer

Category	Message ID	Description	Products
Password Alerts	100451	Unable to change password. The new password must be different than any previous password used.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Password Alerts	100452	Password Change Failure - Internal Error	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Password Alerts	101003	Successfully changed Fixed Password.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Password Alerts	700100	Password reset to Fixed Password.	File Encryption SP6 or Earlier
Password Alerts	700101	Password reset to Smart Card	File Encryption SP6 or Earlier
Password Alerts	700102	Password reset to Domain Authentication.	File Encryption SP6 or Earlier
Password Alerts	900159	Unable to change password.	KeyArmor
Password Alerts	900160	Password changed successfully.	KeyArmor
Password Alerts	900302	Password reset to fixed password.	KeyArmor
Password Alerts	900303	Password reset To Smart Card	KeyArmor

Category	Message ID	Description	Products
Password Alerts	900304	Password reset to domain authentication.	KeyArmor
PIN Change Alerts	100438	Unable to change PIN. The PINs do not match.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
PIN Change Alerts	100440	Unable to change PIN. One of the fields are empty.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
PIN Change Alerts	100453	Unable to change PIN. The PINs do not match.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
PIN Change Alerts	100454	able to change PIN. The new PIN cannot be the same as the old PIN.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
PIN Change Alerts	100455	Unable to change PIN. The new PIN does not meet the minimum length requirements defined by PolicyServer.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
PIN Change Alerts	100456	Unable to change PIN. The PIN cannot contain the user name.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer

Category	Message ID	Description	Products
PIN Change Alerts	100457	Unable to change PIN. The new PIN must be different than any previous PIN used.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
PIN Change Alerts	100458	PIN Change Failure - Internal Error	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Smart Card Alerts	104002	Registered SmartCard.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Smart Card Alerts	104004	Unable to register Smart Card. Check that the card is seated properly and that the Smart Card PIN is valid.	Full Disk Encryption, File Encryption, DriveArmor, KeyArmor, or PolicyServer
Windows Mobile Alerts	800000	OTA Install started	Full Disk Encryption for Windows Mobile
Windows Mobile Alerts	800001	OTA Install completed	Full Disk Encryption for Windows Mobile
Windows Mobile Alerts	800100	OTA SMS message sent	Full Disk Encryption for Windows Mobile
Windows Mobile Alerts	800200	OTA Directory Listing Received	Full Disk Encryption for Windows Mobile
Windows Mobile Alerts	800300	OTA Device Attributes Received	Full Disk Encryption for Windows Mobile
Windows Mobile Alerts	800400	OTA Device Backup	Full Disk Encryption for Windows Mobile

Category	Message ID	Description	Products
Windows Mobile Alerts	800500	OTA Device Restore	Full Disk Encryption for Windows Mobile

Appendix C

Endpoint Encryption Services

The following table describes all Endpoint Encryption services. Use it to understand which services control which Endpoint Encryption agent or feature and to troubleshoot a problem.

TABLE C-1. Endpoint Encryption Services

PLATFORM	SERVICE OR DAEMON NAME	DISPLAY NAME	DESCRIPTION	FILE NAME
PolicyServer	PolicyServer Windows Service	PolicyServer Windows Service	Manages communication between Endpoint Encryption services and databases.	`PolicyServerWindowService.exe`
	TMEEService	Endpoint Encryption Service	Manages Endpoint Encryption agent 5.0 (and above) communication in an encrypted channel (RESTful).	`TMEEService.exe`
	IIS/ MAWebService 2	Legacy Web Service	Manages Endpoint Encryption agent 3.1.3 (and older) communication in an encrypted channel (SOAP).	N/A
	TMEEForward	TMEEForward	Forwards traffic from Endpoint Encryption 5.0 Patch 2 agents to PolicyServer.	TMEEForward.exe
	TMEEProxyWindowsService	PolicyServer LDAProxy Windows Service	Provides secure communications from Trend Micro PolicyServer to remote LDAP servers	`LDAProxyWindowsServices.exe`

Platform	Service or Daemon Name	Display Name	Description	File Name
Full Disk Encryption	DrAService	Trend Micro Full Disk Encryption	Provides Trend Micro endpoint security and full disk encryption.	`DrAService.exe`
Encryption Management for Microsoft BitLocker	FDE_MB	Trend Micro Full Disk Encryption, Encryption Management for Microsoft BitLocker	Provides data security for endpoints using Microsoft BitLocker.	`FDEforBitLocker.exe`
Encryption Management for Apple FileVault	Daemon: TMFDEMM Agent: Trend Micro Full Disk Encryption	Trend Micro Full Disk Encryption, Encryption Management for Apple FileVault	Provides endpoint security for endpoints using Apple FileVault.	
File Encryption	FileEncryption Service	Trend Micro File Encryption	Provides Trend Micro endpoint security and data protection for files, folders, and removable media devices.	`FEService.exe`

Appendix D

Policy Mapping Between Management Consoles

Administrators may manage Endpoint Encryption using only PolicyServer MMC or manage Endpoint Encryption using Control Manager for policy, user and device management and PolicyServer MMC for advanced log management and reporting.

The following tables explain how policies are mapped between PolicyServer MMC and Control Manager. For environments using Control Manager to manage PolicyServer, use PolicyServer MMC to control any policy not listed in the table.

TABLE D-1. Full Disk Encryption Policy Mapping

CONTROL MANAGER LABEL	POLICYSERVER MMC PATH
Encryption	
Encrypt endpoint	**Full Disk Encryption** > **Encryption** > **Encrypt Device**
Client Settings	
Bypass Full Disk Encryption preboot	**Full Disk Encryption** > **Login** > **Preboot Bypass**
Users are allowed to access system recovery tools on the device	**Full Disk Encryption** > **Agent** > **Allow User Recovery**

Control Manager Label	PolicyServer MMC Path
Notifications	
If the endpoint is found, display the following message	**Full Disk Encryption** > **Login** > **If Found**
Display Technical Support contact information	**Full Disk Encryption** > **Login** > **Support Info**
Show legal notice	**Full Disk Encryption** > **Login** > **Legal Notice**
• **Show legal notice** > **Installation** • **Show legal notice** > **Startup**	**Full Disk Encryption** > **Login** > **Legal Notice** > **Legal Notice** > **Legal Notice Display Time**
Show legal notice	**Full Disk Encryption** > **Login** > **Legal Notice** > **Legal Notice** > **Legal Notice Text**

Table D-2. File Encryption Policy Mapping

Control Manager Label	PolicyServer MMC Path
Folders to Encrypt	
Folders to Encrypt text box	**File Encryption** > **Encryption** > **Specify Folders to Encrypt**
Encryption Key Used	
Encryption Key Used	**File Encryption** > **Encryption** > **Encryption Key Used**
Storage Devices	
Disable optical drives	**File Encryption** > **Encryption** > **Disable Optical Drive**
Disable USB drives	**File Encryption** > **Encryption** > **Removable Media** > **Disable USB Drive**

Control Manager Label	PolicyServer MMC Path
Encrypt all files and folders on USB drives	**File Encryption** > **Encryption** > **Removable Media** > **Fully Encrypt Device**
Specify the file path to encrypt on USB devices	**File Encryption** > **Encryption** > **Removable Media** > **Folders to Encrypt On Removable Media**
Notifications	
Show legal notice	**File Encryption** > **Login** > **Legal Notice**
• **Show legal notice** > **Installation** • **Show legal notice** > **Startup**	**File Encryption** > **Login** > **Legal Notice** > **Legal Notice Display Time**
Show legal notice text box	**File Encryption** > **Login** > **Legal Notice** > **Legal Notice Text**

Table D-3. Common Policy Mapping

Control Manager Label	PolicyServer MMC Path
Allow User to Uninstall	
Allow non-administrator accounts to uninstall agent software	• **Full Disk Encryption** > **Agent** > **Allow User to Uninstall** • **File Encryption** > **Agent** > **Allow User to Uninstall**
Lockout and Lock Device Actions	
Lock account after *<number>* **days**	**Full Disk Encryption** > **Login** > **Account Lockout Period**
Account lockout action	**Full Disk Encryption** > **Login** > **Account Lockout Action**
Failed logon attempts allowed	**Full Disk Encryption** > **Login** > **Failed Login Attempts Allowed**

Control Manager Label	PolicyServer MMC Path
Full Disk Encryption: **Device locked action**	**Full Disk Encryption** > **Login** > **Device Locked Action**
Full Disk Encryption: **Number of minutes to lock device**	**Full Disk Encryption** > **Login** > **Lock Device Time Delay**
File Encryption: **Device locked action**	**File Encryption** > **Login** > **Device Locked Action**
File Encryption: **Number of minutes to lock device**	**File Encryption** > **Login** > **Lock Device Time Delay**
Password	
User must change password after *<number>* **days**	**Common** > **Authentication** > **Local Login** > **User Password** > **Change Password Every**
User cannot reuse the previous *<number>* **passwords**	**Common** > **Authentication** > **Local Login** > **User Password** > **Password History Retention**
Number of consecutive characters allowed in a password	**Common** > **Authentication** > **Local Login** > **User Password** > **Consecutive Characters Allowed**
Minimum length allowed for passwords	**Common** > **Authentication** > **Local Login** > **User Password** > **Minimum Length**
Password Character Requirements	
Letters	**Common** > **Authentication** > **Local Login** > **User Password** > **Require How Many Characters**
Lowercase characters	**Common** > **Authentication** > **Local Login** > **User Password** > **Require How Many Lower Case Characters**

Control Manager Label	PolicyServer MMC Path
Uppercase characters	**Common** > **Authentication** > **Local Login** > **User Password** > **Require How Many Upper Case Characters**
Numbers	**Common** > **Authentication** > **Local Login** > **User Password** > **Require How Many Numbers**
Symbols	**Common** > **Authentication** > **Local Login** > **User Password** > **Require How Many Special Characters**

Appendix E

OfficeScan Integration

The following content explains how to use the Endpoint Encryption Deployment Tool OfficeScan plug-in to deploy Endpoint Encryption across an enterprise with endpoints managed by OfficeScan.

For information about PolicyServer prerequisites, OfficeScan system requirements, or managing the Endpoint Encryption Deployment Tool plug-in, see the *Endpoint Encryption Installation and Migration Guide*.

Topics include:

- *About Trend Micro OfficeScan Integration on page E-2*
- *About Plug-in Manager on page E-3*
- *Using Plug-in Programs on page E-5*
- *The OfficeScan Agent Tree on page E-5*
- *Endpoint Encryption Agent Deployment on page E-10*

About Trend Micro OfficeScan Integration

OfficeScan protects enterprise networks from malware, network viruses, web-based threats, spyware, and mixed threat attacks. An integrated solution, OfficeScan consists of an agent that resides at the endpoint and a server program that manages all agents.

The agent guards the endpoint and reports its security status to the server. The server, through the web-based management console, makes it easy to set coordinated security policies and deploy updates to every agent.

Note

For information about OfficeScan, see the supporting documentation at:

http://docs.trendmicro.com/en-us/enterprise/officescan.aspx

Use the OfficeScan Endpoint Encryption Deployment Tool plug-in to deploy Endpoint Encryption agents to OfficeScan managed endpoints. You can select endpoints based on specific criteria and see the status of the deployment. After the Endpoint Encryption Deployment Tool plug-in deploys the Endpoint Encryption agent software, the Endpoint Encryption agent synchronizes to PolicyServer using the settings specified in the plug-in. OfficeScan does not manage Endpoint Encryption policies. The OfficeScan agent and the Endpoint Encryption agent are independent on the same endpoint.

The following illustration explains how to deploy Endpoint Encryption for the first time on OfficeScan managed endpoints. In OfficeScan deployments, administrators can use either Control Manager or PolicyServer MMC to manage PolicyServer.

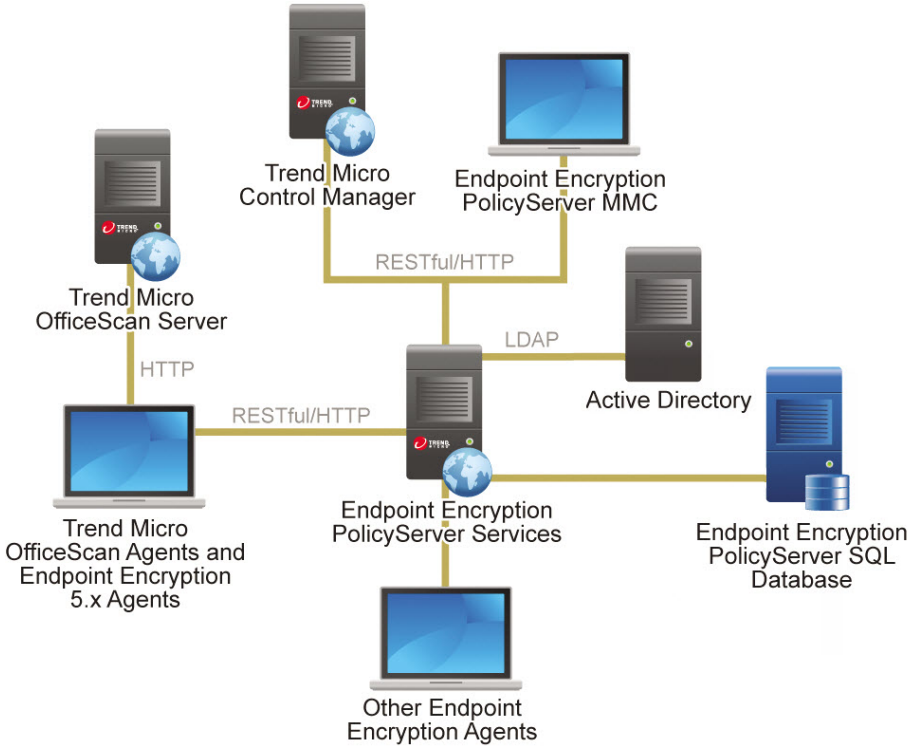


FIGURE E-1. OfficeScan integration deployment

About Plug-in Manager

OfficeScan includes a framework called Plug-in Manager that integrates new solutions into the existing OfficeScan environment. To help ease the management of these solutions, Plug-in Manager provides at-a-glance data for the solutions in the form of widgets.

Note

None of the plug-in solutions currently support IPv6. The server can download these solutions but is not able to deploy the solutions to pure IPv6 Endpoint Encryption agents or pure IPv6 hosts.

Plug-in Manager delivers two types of solutions:

- **Native Product Features**

  Some native OfficeScan features are licensed separately and activated through Plug-in Manager. In this release, two features fall under this category, namely, **Trend Micro Virtual Desktop Support** and **OfficeScan Data Protection**.

- **Plug-in programs**

  Plug-in programs are not part of the OfficeScan program. The plug-in programs have separate licenses and management consoles. Access the management consoles from within the OfficeScan web console. Examples of plug-in programs are **Intrusion Defense Firewall**, **Trend Micro Security (for Mac)**, and **Trend Micro Mobile Security**.

This document provides a general overview of plug-in program installation and management and discusses plug-in program data available in widgets. Refer to specific plug-in program documentation for details on configuring and managing the program.

Installing OfficeScan

For information about installing and configuring OfficeScan, see the documentation available at:

http://docs.trendmicro.com/en-us/enterprise/officescan.aspx

For information about installing and configuring the OfficeScan Endpoint Encryption Deployment Tool before deploying Endpoint Encryption agents, see the *Endpoint Encryption Installation and Migration Guide* for installation and configuration options.

Using Plug-in Programs

This section describes how to install and manage the OfficeScan Endpoint Encryption Deployment Tool plug-in program.

Plug-in Program Management

Configure settings and perform program-related tasks from the plug-in program's management console, which is accessible from the OfficeScan web console. Tasks include activating the program and possibly deploying the plug-in program agent to endpoints. Consult the documentation for the specific plug-in program for details on configuring and managing the program.

Managing Endpoint Encryption Deployment Tool

Procedure

1. Open the OfficeScan web console and click **Plug-in Manager** in the main menu.
2. On the **Plug-in Manager** screen, go to the plug-in program section and click **Manage Program**.

The OfficeScan Agent Tree

The OfficeScan agent tree displays all the agents grouped into domains that the server currently manages. Agents are grouped into domains so you can simultaneously configure, manage, and apply the same configuration to all domain members.

Agent Tree Specific Tasks

The agent tree displays when you access certain screens on the web console. Above the agent tree are menu items specific to the screen you have accessed. These menu items allow you to perform specific tasks, such as configuring agent settings or initiating agent

tasks. To perform any of the tasks, first select the task target and then select a menu item.

The agent tree provides access to the following functions:

- **Search for endpoints**: Locate specific endpoints by typing search criteria in the text box.
- **Synchronize with OfficeScan**: Synchronize the plug-in program's agent tree with the OfficeScan server's agent tree. For details, see *Synchronizing the Agent Tree on page E-6*.
- **Deploy Server Settings**: Displays the **Deploy Server Settings** screen. For details, see *Deploying Server Settings on page E-9*.

Administrators can also manually search the agent tree to locate endpoints or domains. Specific computer information displays in the table on the right.

Synchronizing the Agent Tree

Before the plug-in program can deploy settings to agents, administrators need to synchronize the agent tree with the OfficeScan server.

Procedure

1. Open the plug-in console.
2. On the **Client Management** screen, click **Synchronize with OfficeScan**.

   A confirmation message screen appears.
3. Allow a few moments for the synchronization to complete.
4. Click **Close** to return to the **Client Management** screen.

Endpoint Encryption Agent Installation Error Codes

The following table describes the error codes for Endpoint Encryption agent installation errors. Use it to understand the problem and resolution for a specific installation error.

Note

Make sure that the endpoint meets the minimum system requirements before deploying Endpoint Encryption agents. Microsoft .Net Framework 2.0 SP1 or above is required. For information about system requirements, see the *Endpoint Encryption Installation and Migration Guide*.

TABLE E-1. Installation Error Codes

AGENT	ERROR CODE	PROBLEM AND RESOLUTION
File Encryption	1603	Unable to install the Endpoint Encryption agent. A required resource may be unavailable. Restart the endpoint and try the installation again. If the problem persists, contact Trend Micro Support.
	1641	Unable to install the Endpoint Encryption agent. The system may require a restart to complete a previous uninstallation. Restart the endpoint and try the installation again. If the problem persists, contact Trend Micro Support.
Full Disk Encryption	-3	The user name or password is invalid. Verify the credentials and try to log on to PolicyServer again.
	-6	Unable to install the Endpoint Encryption agent. A required resource may be unavailable. Restart the endpoint and try the installation again. If the problem persists, contact Trend Micro Support.

Agent	Error Code	Problem and Resolution
	-13	The endpoint does not meet the minimum system requirements. Upgrade the RAM or disk space and try to install the agent again.
Encryption Management for Microsoft BitLocker	1603	Unable to install the Endpoint Encryption agent. A required resource may be unavailable. Restart the endpoint and try the installation again. If the problem persists, contact Trend Micro Support.
	-13	Unable to install the Endpoint Encryption agent. Microsoft BitLocker requires Trusted Platform Module (TPM). The endpoint either does not support TPM, TPM is not enabled in BIOS, or TPM is locked by another logged on user. Enable TPM in BIOS or contact the system administrator for assistance.
	-14	Unable to install the Endpoint Encryption agent. The operating system is not supported. Install one of the following supported operating systems and then try again: • Windows 7 32-bit or 64-bit, Ultimate or Enterprise edition

Agent	Error Code	Problem and Resolution
		• Windows 8 32-bit or 64-bit, Professional or Enterprise edition • Windows 8.1 32-bit or 64-bit, Professional or Enterprise edition
	-15	Full Disk Encryption is already installed.
	-16	Unable to install the Endpoint Encryption agent. The endpoint is already encrypted.

Deploying Server Settings

Configure and deploy the PolicyServer settings to ensure communication between the agents and PolicyServer.

Procedure

1. Open the plug-in program console.
2. Click the **PolicyServer Settings** tab.
3. Specify the following details:

Option	Description
Server name	Specify the PolicyServer IP address or host name.
Port	Specify the port number assigned to the PolicyServer instance.
Enterprise	Specify the PolicyServer Enterprise. Only one Enterprise is supported.
User name	Specify the Enterprise Administrator user name.

OPTION	DESCRIPTION
Password	Specify the Enterprise Administrator password.

4. Click **Save**.

   A confirmation message appears. Allow some time to establish a server connection.

Endpoint Encryption Agent Deployment

This section describes how to use the Endpoint Encryption Deployment Tool Plug-in to initiate agent installation and uninstallation commands.

The following illustration shows the Endpoint Encryption Deployment Tool **Client Management** screen.

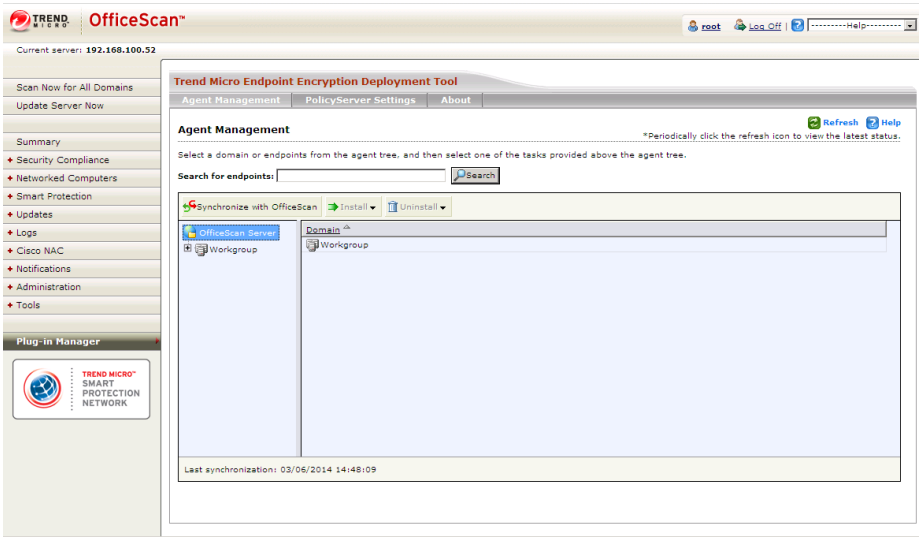


FIGURE E-2. Endpoint Encryption Deployment Tool

Deploying the Agent with OfficeScan

Before deploying agents, make sure that the endpoints meet the minimum system requirements.

For more information, see the *Endpoint Encryption Installation and Migration Guide*.

Procedure

1. Select the endpoint from the client tree.

   Note

   To select multiple endpoints, hold CTRL and select applicable endpoints.

2. Click **Install**, then select one of the following options:

Option	Description
Full Disk Encryption	Select the appropriate Full Disk Encryption agents. • Select the Full Disk Encryption agent to deploy all features, including preboot authentication, all policies, notifications, and device actions. • Select the Encryption Management for Microsoft BitLocker agent to enable Microsoft BitLocker full disk encryption, deploying only limited policies and device actions. **Note** It is not possible to deploy the Encryption Management for Apple FileVault agent using the Endpoint Encryption Deployment Tool plug-in.
File Encryption	Deploy the File Encryption agent, which includes all features and policies.

3. Click **Deploy**.

4. At the message, click **OK** to confirm the deployment.

The agent deployment command is initiated. If successful, any selected endpoint is prompted to restart.

Confirming Agent Deployment

This task explains how to confirm that the Endpoint Encryption agent install initiates correctly on the endpoint.

Procedure

1. Complete *Deploying the Agent with OfficeScan on page E-11*.
2. Log on to the selected Endpoint Encryption device.
3. Do one of the following:
   - To view the deployment status, open the log files at:

Client endpoint	`C:\TMEE_Deploy_Client.log`
Server endpoint	`C:\TMEE_Deploy_Server_Inst.log`

   - Run Task Manager and search one of the services at *Endpoint Encryption Agent Services on page E-12*.
4. When the Endpoint Encryption agent deployment completes, reboot the endpoint to complete the installation.

Endpoint Encryption Agent Services

The following table explains the services running when the Endpoint Encryption agent initiates on the endpoint. Use it to verify that the agent has been successfully installed and is correctly functioning.

Note

For more information about Endpoint Encryption services, see *Endpoint Encryption Services on page C-1*.

Service	Status
`FEService.exe`	The File Encryption agent is running.
`TMFDE.exe`	The Full Disk Encryption agent is running.
`TMFDEForBitLocker.exe`	The Encryption Management for Microsoft BitLocker agent is running.

Endpoint Encryption Agent Deployment Statuses

The following table explains the OfficeScan statuses that appear in the Endpoint Encryption Deployment Tool plug-in console after initiating a deployment command. Use it to understand if there was a problem during the agent installation or uninstallation.

Table E-2. Agent Installation Statuses

Status	Message	Description
In progress	In progress: agent deployment	OfficeScan is attempting to communicate with the managed endpoint, install the Endpoint Encryption agent, then establish a connection with PolicyServer.
Successful	Successful agent deployment	The Endpoint Encryption agent installed successfully, and has established communication with both OfficeScan and PolicyServer.
Unsuccessful	Unsuccessful agent deployment	The Endpoint Encryption agent deployment could not finish. Review the logs to find out why the managed endpoint could not update with the selected Endpoint Encryption agent.

Status	Message	Description
Restart required	Successful agent deployment. Shutdown/Restart required.	For the Full Disk Encryption agent, a restart is required to complete the installation. The status is not updated until after the user has logged on the PolicyServer preboot.
Timeout	Timed out: agent deployment	The timeout period is 30 minutes. After a timeout, initiate a new deployment command.

Table E-3. Agent Uninstallation Statuses

Status	Message	Description
In progress	Request in progress: agent deployment	OfficeScan is attempting to communicate with the managed endpoint and uninstall the agent software. The managed endpoint must reply to the deployment command before the uninstallation can start.
Successful	Successful agent uninstallation	The Endpoint Encryption agent uninstalled successfully and has established communication with OfficeScan and PolicyServer. After uninstallation, the Endpoint Encryption device is removed from PolicyServer.
Unsuccessful	Unsuccessful agent uninstallation	The Endpoint Encryption agent uninstallation request could not establish a connection. Review the logs to find out why the managed endpoint could not uninstall the Endpoint Encryption.
Restart required	Successful agent uninstallation. Shutdown/ Restart required.	For some Endpoint Encryption agents, a restart is required to complete the uninstallation.

Status	Message	Description
Timeout	Request timeout: agent uninstallation	The timeout period is 30 minutes. After a timeout, initiate a new uninstallation request.

Endpoint Encryption Agent Installation Error Codes

The following table describes the error codes for Endpoint Encryption agent installation errors. Use it to understand the problem and resolution for a specific installation error.

Note

Make sure that the endpoint meets the minimum system requirements before deploying Endpoint Encryption agents. Microsoft .Net Framework 2.0 SP1 or above is required. For information about system requirements, see the *Endpoint Encryption Installation and Migration Guide*.

Table E-4. Installation Error Codes

Agent	Error Code	Problem and Resolution
File Encryption	1603	Unable to install the Endpoint Encryption agent. A required resource may be unavailable. Restart the endpoint and try the installation again. If the problem persists, contact Trend Micro Support.
	1641	Unable to install the Endpoint Encryption agent. The system may require a restart to complete a previous uninstallation. Restart the endpoint and try the installation again. If the problem persists, contact Trend Micro Support.

Agent	Error Code	Problem and Resolution
Full Disk Encryption	-3	The user name or password is invalid. Verify the credentials and try to log on to PolicyServer again.
	-6	Unable to install the Endpoint Encryption agent. A required resource may be unavailable. Restart the endpoint and try the installation again. If the problem persists, contact Trend Micro Support.
	-13	The endpoint does not meet the minimum system requirements. Upgrade the RAM or disk space and try to install the agent again.
Encryption Management for Microsoft BitLocker	1603	Unable to install the Endpoint Encryption agent. A required resource may be unavailable. Restart the endpoint and try the installation again. If the problem persists, contact Trend Micro Support.
	-13	Unable to install the Endpoint Encryption agent. Microsoft BitLocker requires Trusted Platform Module (TPM). The endpoint either does not support TPM, TPM is not enabled in BIOS, or TPM is locked by another logged on user. Enable TPM in BIOS or contact the system administrator for assistance.

Agent	Error Code	Problem and Resolution
	-14	Unable to install the Endpoint Encryption agent. The operating system is not supported. Install one of the following supported operating systems and then try again: • Windows 7 32-bit or 64-bit, Ultimate or Enterprise edition • Windows 8 32-bit or 64-bit, Professional or Enterprise edition • Windows 8.1 32-bit or 64-bit, Professional or Enterprise edition
	-15	Full Disk Encryption is already installed.
	-16	Unable to install the Endpoint Encryption agent. The endpoint is already encrypted.

Using OfficeScan to Uninstall Endpoint Encryption Agents

During an upgrade, some Endpoint Encryption agents require first manually uninstalling the old Endpoint Encryption agent software. If the Endpoint Encryption agent software is malfunctioning in some way, uninstalling and reinstalling the Endpoint Encryption agent software may solve the problem.

During an upgrade, some Endpoint Encryption agents require first manually uninstalling the old Endpoint Encryption agent software. If the Endpoint Encryption agent software is malfunctioning in some way, uninstalling and reinstalling the Endpoint Encryption agent software may solve the problem.

This procedure explains how to uninstall Endpoint Encryption agents using the OfficeScan Endpoint Encryption Deployment Tool plug-in.

Procedure

1. Select the Endpoint Encryption device.

   Note

   To select multiple Endpoint Encryption devices, hold SHIFT and select applicable endpoints.

2. Click **Uninstall** and select the appropriate Endpoint Encryption agent from the drop-down list.
3. Click **OK** to confirm the deployment.

   The Endpoint Encryption agent uninstall command is deployed.

4. The Endpoint Encryption agent uninstallation is complete when OfficeScan displays the confirmation message.

   Note

   All future deployment commands fail if the Endpoint Encryption device is not restarted after the uninstall command is initiated and completes.

   If the uninstall cannot complete, follow the manual uninstallation process in the *Endpoint Encryption Installation and Migration Guide*.

   When uninstallation completes, the Endpoint Encryption agent is removed and the product folder is deleted from the endpoint.

Appendix F

Glossary

The following table explains the terminology used throughout the Endpoint Encryption documentation.

TABLE F-1. Endpoint Encryption Terminology

TERM	DESCRIPTION
Agent	Software installed on an endpoint that communicates with a management server.
Authentication	The process of identifying a user.
ColorCode™	The authentication method requiring a color-sequence password.
Command Line Helper	A Trend Micro tool for creating encrypted values to secure credentials when creating Endpoint Encryption agent installation scripts.
Command Line Installer Helper	A Trend Micro tool for creating encrypted values to secure credentials when creating Endpoint Encryption agent installation scripts.
Control Manager	Trend Micro Control Manager is a central management console that manages Trend Micro products and services at the gateway, mail server, file server, and corporate desktop levels.

Term	Description
Domain authentication	The authentication method for single sign-on (SSO) using Active Directory.
DriveTrust™	Hardware-based encryption technology by Seagate™.
Encryption Management for Microsoft BitLocker	The Endpoint Encryption Full Disk Encryption agent for Microsoft Windows environments that simply need to enable Microsoft BitLocker on the hosting endpoint. Use the Encryption Management for Microsoft BitLocker agent to secure endpoints with Trend Micro full disk encryption protection in an existing Windows infrastructure. For more information, see *About Full Disk Encryption on page 14-2*.
Encryption Management for Apple FileVault	The Endpoint Encryption Full Disk Encryption agent for Mac OS environments that simply need to enable Apple FileVault on the hosting endpoint. Use the Encryption Management for Apple FileVault agent to secure endpoints with Trend Micro full disk encryption protection in an existing Mac OS infrastructure. For more information, see *About Full Disk Encryption on page 14-2*.
Endpoint Encryption Device	Any computer, laptop, or removal media (external drive, USB drive) managed by Endpoint Encryption.
Endpoint Encryption Service	The PolicyServer service that securely manages all Endpoint Encryption 5.0 Patch 2 agent communication. For more information, see *About PolicyServer on page 1-12*. For Endpoint Encryption 3.1.3 and below agent communication, see Legacy Web Service.
Enterprise	The Endpoint Encryption Enterprise is the unique identifier about the organization in the PolicyServer database configured when installing PolicyServer. One PolicyServer database may have multiple Enterprise configurations. However, Endpoint Encryption configurations using Control Manager may only have one Enterprise.

Term	Description
File Encryption	The Endpoint Encryption agent for file and folder encryption on local drives and removable media. Use File Encryption to protect files and folders located on virtually any device that appears as a drive within the host operating system. For more information, see *About File Encryption on page 13-2*.
FIPS	Federal Information Processing Standard. The computer security standard established by the United States federal government.
Fixed password	The authentication method for using a standard user password consisting of letters and/or numbers and/or special characters.
Full Disk Encryption	The Endpoint Encryption agent for hardware and software encryption with preboot authentication.
KeyArmor	The Endpoint Encryption password-protected, encrypted USB device. **Note** Endpoint Encryption 5.0 does not have KeyArmor devices. However, legacy KeyArmor devices are supported.
Legacy Web Service	The PolicyServer service that securely manages all Endpoint Encryption 3.1.3 and below agent communication. For details, see *About PolicyServer on page 1-12*. For Endpoint Encryption 5.0 Patch 2 communication, see Endpoint Encryption Service.
OCSP	Online Certificate Status Protocol. The protocol used for X. 509 digital certificates.

Term	Description
OfficeScan	OfficeScan protects enterprise networks from malware, network viruses, web-based threats, spyware, and mixed threat attacks. An integrated solution, OfficeScan consists of an agent that resides at the endpoint and a server program that manages all agents.
OPAL	Trusted Computing Group's Security Subsystem Class for client devices.
Password	Any type of authentication data used in combination with a user name, such as fixed, PIN, and ColorCode.
PIN	The authentication method for using a Personal Identification Number, commonly used for ATM transactions.
PolicyServer	The central management server that deploys encryption and authentication policies to the Endpoint Encryption agents.
Remote Help	The authentication method for helping Endpoint Encryption users who forget their credentials or Endpoint Encryption devices that have not synchronized policies within a pre-determined amount of time.
Recovery Console	The Full Disk Encryption interface to recover Endpoint Encryption devices in the event of primary operating system failure, troubleshoot network issues, and manage users, policies, and logs.
Repair CD	The Full Disk Encryption bootable CD that can decrypt a drive before removing Full Disk Encryption in the event that the disk becomes corrupted.

Term	Description
RESTful	Representational State Transfer web API . The AES-GCM encrypted communications protocol used by Endpoint Encryption 5.0 agents. After a user authenticates, PolicyServer generates a token related to the specific policy configuration. Without authentication, the service denies all policy transactions. **Note** For information about AES-GCM, visit: http://tools.ietf.org/html/rfc5084#ref-GCM%3F
RSA SecurID	A mechanism for performing two-factor authentication for a user to a network resource.
SED	Secure Encrypted Device. A hard drive, or other device, which is encrypted.
Self Help	The authentication method for helping Endpoint Encryption users provide answers to security questions instead of contacting Technical Support for password assistance.
Smart card	The authentication method requiring a physical card in conjunction with a PIN or fixed password.
SOAP	Simple Object Access Protocol. The encrypted communications protocol used by all Endpoint Encryption 3.1.3 and older agents to communicate with PolicyServer. Under certain situations, SOAP may allow insecure policy transactions without user authentication. Legacy Web Service filters SOAP calls by requiring authentication and limiting the commands that SOAP accepts.

Index

Symbols

"Log on as batch job" policy, A-64

A

about
- account types, 2-5
- authentication, 2-1
- client-server architecture, 1-9
- Encryption Management for Microsoft BitLocker, 15-4
- Endpoint Encryption, 1-2
- Endpoint Encryption Service, 1-12
- File Encryption, 13-1, 13-2
- FIPS, 1-9
- Full Disk Encryption
  - Encryption Management for Apple FileVault, 14-2
  - Encryption Management for Microsoft BitLocker, 14-2
- groups, 8-5
- Legacy Web Service, 1-12
- Maintenance Agreement, 17-2
- OfficeScan, E-2
- PolicyServer, 1-12, 3-1, 8-1
- users, 8-5
- widgets, 4-4

aboutEncryption Management for Apple FileVault, 15-10

Accessibility
- on-screen keyboard, 14-7

accounts
- types, 2-5

Active Directory, 1-9, 2-9, 6-11, 11-19
- import users, 6-7, 11-6
- resetting password, 6-14, 11-22

agents, 1-16
- services, E-12

agent tree, E-5
- about, E-5
- specific tasks, E-5

alerts, 16-12

appendices, 1

authentication, 1-2
- about, 2-1
- account types, 2-5
- change method, 14-8
- changing password, 13-6
- ColorCode, 2-6, 2-8, 13-5, 14-10, 14-11
- domain, 2-9
- domain authentication, 2-6
- File Encryption, 13-2
- fixed password, 2-6, 2-10
- Full Disk Encryption, 14-3
- LDAP, 2-9
- options, 2-7
- PIN, 2-6, 2-11, 13-6
- prerequisites, 2-9
- remote help, 11-30, 14-13
- Remote Help, 2-6, 2-11, 14-13
- security options, 2-2, 13-8
- Self Help, 2-6, 2-12, 11-26, 14-15, 14-17
  - answers, 14-17
- setup requirements, 2-9
- single sign-on, 13-3
- smart card, 2-13, 11-23, 11-24, 13-4, 14-14

authentication methods, 2-6

automatic deployment settings
- Scheduled Download, A-59

B

burning discs, 13-18

C

centrally managed, 5-24
central management, 1-2
changing passwords, 14-9
changing setting permissions, 5-23
client-server architecture, 1-9
ColorCode, 2-8, 14-10
Command Line Helper, 14-2, 14-41
Command Line Helper Installer, 14-2
community, 17-6
components
    downloading, A-38
configuring, A-56
    managed products, A-24
    Scheduled Download
        automatic deployment settings, A-59
    Scheduled Download Exceptions, A-48
    Scheduled Download Settings, A-57
    user accounts, A-9
configuring proxy settings
    managed server list, 5-31
Control Manager, 1-16, 3-2, 3-4, A-1, A-6
    about, 1-16, 3-2, A-1
    accounts, A-9
    agent, 3-5, A-7
    antivirus and content security components, A-39, A-40
    basic features, A-3
    configuring accounts, A-9
    features, A-3
    mail server, 3-4, A-6
    managed product, A-15
    MCP, 3-5, A-7
    policies, 5-1
    report server, 3-4, A-6
    SQL database, 3-4, A-6
    Trend Micro Management Infrastructure, 3-5, A-7
    users
        add to policy, 6-21
        remove from policy, 6-23
    web-based management console, 3-5, A-7
    web server, 3-4, A-6
    widget framework, 3-6, A-8
Control Manager antivirus and content security components
    Anti-spam rules, A-39
    Engines, A-39
    Pattern files/Cleanup templates, A-39
Control Manager integration, 1-9, 1-16, 3-2, 8-2
copying policy settings, 5-24
creating
    folders, A-35
creating policies
    centrally managed, 5-24
    copying settings, 5-24
    setting permissions, 5-23
CSV, 11-5

D

DAAutoLogin, 14-2, 14-41
dashboard
    using, 4-2
data protection, 1-2
data recovery, 14-35
data views
    understand, A-67
Decrypt Disk, 14-23
decryption

Recovery Console, 14-23
deleting
tabs, 4-4
deleting policies, 5-26
demilitarized zone, 14-18
deployment
OfficeScan, E-10–E-12
deployment plans, A-60
device, 1-2
devices, 2-2
add to group, 10-11, 12-3
add to policy, 7-3
Control Manager, 7-1
directory listing, 12-11
Endpoint Encryption Devices widget, 4-11, 7-7
finding, 7-9
group membership, 12-11
kill command, 2-4, 7-14, 12-12
lock, 3-24, 5-21
locking, 2-4, 7-15, 12-12
PolicyServer MMC, 12-1
reboot, 2-4, 7-15, 12-13
recovery key, 2-4, 7-10, 12-7
remove, 7-16, 12-5
remove Enterprise device, 7-16, 12-5
remove from group, 10-12, 12-4
remove from policy, 7-6
software token, 2-4, 7-9, 12-6
view attributes, 7-11, 12-8
Directory Management options, A-34
Directory Manager, A-33
domain authentication, 2-9, 13-4
File Encryption, 13-3
Download Center, 17-5
download components
manually, A-41
downloading and deploying components, A-38
draft policies, 5-4

E

editing managed servers, 5-31
editing policies, 5-25, 6-21, 6-23
encryption, 1-8, 9-26
archiving, 13-18
digital certificate, 13-17
features, 1-2
file and folder, 13-2
file encryption, 13-1
File Encryption
archive and burn, 13-14
FIPS, 1-9
fixed password key, 13-16
full disk, 14-2
hardware-based, 1-8, 14-2
keys
shared, 13-15
local key, 13-14
self-extracting, 13-16
software-based, 1-8, 14-2
Encryption Management for Apple FileVault
about, 15-10
Encryption Management for Microsoft BitLocker
about, 15-4
agent service, E-12
Endpoint Encryption
about, 1-2
tools, 14-2
enhancements, 1-3
error messages

authentication, 2-2, 13-8

F

features, A-3
File Encryption, 13-1
agent service, E-12
archive, 13-14
archive and burn, 13-14, 13-18
authentication, 13-2
ColorCode, 13-5
domain, 13-3
first-time, 13-2
PIN, 13-6
smart card, 13-4
burn archive with certificate, 13-19
burn archive with fixed password, 13-18
change PolicyServer, 13-12
changing password, 13-6
changing PolicyServer, 13-12
digital certificate, 13-17
creating, 13-17
encryption, 13-14
file encryption, 13-2
first-time use, 13-2
fixed password key
creating, 13-16
local key, 13-14, 13-15
PolicyServer sync, 13-10
Remote Help, 11-30, 13-7
reset password, 13-7, 13-10
secure delete, 13-19
shared key, 13-15
creating, 13-16
single sign-on, 13-3
smart cards, 13-5
syncing with PolicyServer, 13-11
sync offline files, 13-12
tray icon
about, 13-10
unlock device, 11-30, 13-7
filtered policies, 5-4
reordering, 5-4
FIPS
about, 1-9
FIPS 140-2, 1-9
security levels, 1-9
fixed password, 2-10
folders
creating, A-35
renaming, A-36
Full Disk Encryption, 14-1
agent service, E-12
authentication, 2-12, 14-15
changing password, 14-9
change, 14-23, 14-31
change PolicyServer, 14-22
changing enterprises, 14-29
clean up files, 14-40
connectivity, 14-17
Decrypt Disk, 14-23
menu options, 14-4
network configuration, 14-29
Network Setup, 14-29
patching, 14-42
PolicyServer settings, 14-17
port settings, 14-17
Recovery Console, 14-21
manage policies, 14-28
manage users, 14-26
Windows, 14-22
recovery methods, 14-32
Remote Help, 11-30, 14-13
Self Help, 14-16

synchronize policies, 14-19
TCP/IP access, 14-17
tools, 14-2
uninstall, 14-32
Windows patches, 14-41
Full Disk Encryption Preboot, 14-3
authentication, 14-8
keyboard layout, 14-8
menu options, 14-4
network connectivity, 14-5
on-screen keyboard, 14-7
wireless connection, 14-5

G

groups, 8-5, 10-1
creating offline groups, 10-13
install to group, 11-16
modifying, 10-5
offline groups, 10-13
remove device, 10-12, 12-4
removing, 10-5
subgroups, 10-2
types, 10-2

H

help desk policies, 11-29

I

importing users, 11-5

K

key features, 1-2

L

LDAP, 2-9
LDAP Proxy, 6-4, 11-3
log events, 16-11, 16-15
logs, 14-28, 16-1, A-65
alerts, 16-12
managing events, 16-11
querying, A-67
setting alerts, 16-12

M

maintenance, 16-2
Maintenance Agreement
about, 17-2
expiration, 17-2
renewal, 17-2
managed products
configuring, A-24
issue tasks, A-25
recovering, A-30
renaming, A-36
searching for, A-31
viewing logs, A-26
managed server list, 5-27
configuring proxy settings, 5-31
editing servers, 5-31
manually download components, A-41
MBR
replacing, 14-25
MCP, 3-5, A-7
modifying
tabs, 4-3

N

Network Setup, 14-29

O

OfficeScan
uninstalling agents, E-17
online
community, 17-6
on-screen keyboard, 14-7

P

passwords, 1-2, 6-11, 11-19
- change fixed password, 6-15
- change method, 6-15
- Remote Help, 11-27
- resetting, 6-12, 6-13, 11-21
  - Active Directory, 11-22
  - Enterprise Administrator, 11-20
  - Enterprise Authenticator, 11-20
  - Group Administrator, 11-21
  - Group Authenticator, 11-21
  - user, 11-21, 11-22
- resetting active directory, 6-14
- resetting Enterprise Administrator/ Authenticator, 6-12
- resetting fixed password, 6-13
- resetting Policy Administrator/ Authenticator, 6-13
- resetting to fixed password, 11-22
- resetting user, 6-13, 6-14
- Self Help, 11-26

pending targets, 5-8

Personal Identification Number (PIN), 2-11

Plug-in Manager, E-3

policies, 1-2, 5-12
- allow user recovery, 14-21
- common, 3-21, 5-18, 9-30
  - agent, 9-30
  - authentication, 9-30
- deleting, 5-26
- editing, 5-25, 6-21, 6-23
- File Encryption, 3-19, 5-16
  - computer, 9-26
  - encryption, 9-26
  - login, 9-28
  - password, 9-29
- Full Disk Encryption, 3-17, 5-14, 9-19, 9-26, 14-19
  - client, 9-19
  - encryption, 9-20
  - login, 9-20
  - password, 9-25
- indicators, 8-15, 9-2
- policy mapping, D-1
- PolicyServer, 9-14
  - Administrator, 9-15
  - Authenticator, 9-16
  - console, 9-14
  - log alerts, 9-17
  - service pack download, 9-18
  - welcome message, 9-18
- remove device, 7-6
- Support Info, 11-29
- synchronization, 14-2
- synchronizing, 14-19
- user, 3-14, 5-12

policy
- install devices, 6-19

policy control, 13-1

policy list, 5-4, 5-6

policy management, 5-2
- centrally managed, 5-24
- copying policy settings, 5-24
- deleting policies, 5-26
- draft policies, 5-4
- editing managed servers, 5-31
- editing policies, 5-25, 6-21, 6-23
- filtered policies, 5-4
- managed server list, 5-27
- pending targets, 5-8
- policy list, 5-4, 5-6
- policy priority, 5-4, 5-7

reordering policies, 5-4
setting permissions, 5-23
specified policies, 5-4
targets, 5-7
understanding, 5-2
upgrading policy templates, 5-32
policy mapping
Control Manager, D-1
PolicyServer, D-1
policy priority, 5-7
PolicyServer
advanced premise, 16-15
client web service, 1-9
enabling applications, 8-19
getting started, 3-1, 8-1
interface, 8-4
log events, 16-11, 16-15
logs, 16-1
maintenance, 16-2
MMC hierarchy, 8-4
MMC window, 9-4
policies, 5-6, 9-1, 9-2, 9-4
editing, 9-4
Support Info, 11-29
relay SMS/email delivery, 16-13
Remote Help, 11-27
reports, 16-1, 16-11, 16-15
setting log alerts, 16-12
smart card, 11-24
subgroups, 10-4
Support Info, 11-29
PolicyServer MMC, 1-9, 1-15, 8-2
add enterprise user, 8-10, 11-3
add top group, 8-6, 10-3
authentication, 8-2
fields and buttons, 8-16, 9-3
first time use, 8-2
groups, 8-5
adding users, 8-8, 10-6, 11-11
modifying policies, 8-17
offline groups, 10-13
creating, 10-13
updating, 10-15
policies, 8-15
editing
multiple choice, 9-8
multiple option, 9-12
policies with ranges, 9-4
text string, 9-11
True/False, Yes/No, 9-6
users, 8-5
add enterprise user, 8-8, 10-6, 11-11
add to group, 8-8, 8-13, 10-6, 10-8, 11-11, 11-13
users and groups, 8-6
policy settings
copying, 5-24
policy targets, 5-7
policy templates, 5-32
policy types
draft, 5-4
filtered, 5-4
policy priority, 5-7
specified, 5-4
product components, 1-9
product definitions, F-1
Product Directory
deploying components, A-22
product overview, 1
proxy settings
managed server list, 5-31

Q

query logs, A-67

R

recovering
managed products, A-30
recovery
clean up files, 14-40
recovery console
logon, 14-22
Recovery Console, 14-20
access, 14-21
Windows, 14-22
changing enterprises, 14-29
changing PolicyServer, 14-23, 14-31
Decrypt Disk, 14-23
functions, 14-20
log on, 14-21
manage policies, 14-28
manage users, 14-26
Mount Partitions, 14-25
network configuration, 14-29
Network Setup, 14-29
recovery methods, 14-32
Repair CD, 14-36
Restore Boot, 14-25
users
add, 14-27
delete, 14-28
edit, 14-26
view logs, 14-28
recovery methods, 14-32
registering
to Control Manager, A-8
registration
key, 17-2
profile, 17-2
URL, 17-2
Remote Help, 2-2, 2-4, 2-11, 6-11, 7-15, 11-19, 11-27, 12-12, 13-8, 14-13
renaming
folders, A-36
managed products, A-36
Repair CD, 14-2, 14-32, 14-34
data recovery, 14-35
decryption, 14-36
reporting, 1-2
reports, 16-1, 16-11, 16-15
alert, 16-19
display errors, 16-21
displaying reports, 16-20
icons, 16-16
one-time reports, A-82
options, 16-16
scheduled reports, 16-20, A-88
standard, 16-17, 16-18
templates, A-69
types of, 16-17
report templates, A-69
Restore Boot, 14-25

S

schedule bar, A-12
Scheduled Download
configuring
automatic deployment settings, A-59
Scheduled Download Exceptions
configuring, A-48
Scheduled Download Frequency
configuring, A-56
Scheduled Downloads, A-49
Scheduled Download Schedule
configuring, A-56

Scheduled Download Schedule and Frequency, A-56
Scheduled Download Settings
    configuring settings, A-57
searching
    managed products, A-31
security
    account lock, 2-11, 14-13
    account lockout action, 2-11, 14-13
    account lockout period, 2-11, 14-13
    anti-malware/antivirus protection, 1-2
    device lock, 2-11, 14-13
    erase device, 2-2, 13-8
    failed login attempts allowed, 2-11, 14-13
    remote authentication required, 2-2, 13-8
    time delay, 2-2, 13-8
Self Help, 2-12, 6-11, 11-19, 14-15
    answers, 14-17
    defining answers, 14-16
    password support, 11-26
setting permissions, 5-23
showing permissions, 5-23
smart card, 2-13, 11-23, 14-14
    authentication, 11-24
smart cards, 2-13, 11-23, 14-14
specified policies, 5-4
    priority, 5-4
SSO, 2-9
summary dashboard, 4-1
    adding tabs, 4-3
    deleting tabs, 4-4
    modifying tabs, 4-3
    tabs, 4-2
support
    knowledge base, 17-6
    resolve issues faster, 17-8
    TrendLabs, 17-9
synchronization
    File Encryption, 13-11

T

tabs
    about, 4-2
    deleting, 4-4
    modifying, 4-3
    summary dashboard, 4-2
targets, 5-7
    pending, 5-8
terminology, F-1
tokens, 11-24, 11-26, 14-15
tools
    Command Line Helper, 14-41
    DAAutoLogin, 14-41
    Recovery Console, 14-29
    Repair CD, 14-34
top group, 8-6, 10-3
TrendLabs, 17-9
Trend Micro Control Manager
    managed product user access, A-11
    registering to, A-8
trial license, 17-3

U

understand
    data views, A-67
    deployment plans, A-60
    log queries, A-67
    logs, A-65
understanding
    Endpoint Encryption, 1-1
uninstalling
    agents, E-17
upgrading policy templates, 5-32

URLs
registration, 17-2
users, 2-4, 6-1, 8-5, 11-1
Active Directory passwords, 11-22
adding, 6-4, 11-3
adding existing user to group, 8-13, 10-8, 11-13
adding existing user to policy, 6-21
adding new user to group, 8-8, 10-6, 11-11
add new enterprise user, 8-10, 11-3
change default group, 11-15
change default policy, 6-20
finding, 11-8
group membership, 11-10
group vs enterprise changes, 11-9
import from AD, 6-7, 11-6
importing with CSV, 11-5
install to group, 11-16
install to policy, 6-19
lockout, 3-24, 5-21
modifying, 11-9
passwords, 6-11, 11-19
policy membership, 6-16
remove from group, 10-11, 11-18
remove user from policy, 6-23
restore deleted, 6-25, 11-18, 16-10
users and groups, 8-6

V

viewing
managed products logs, A-26

W

widgets
adding, 4-6
adding tabs, 4-3
configuring, 4-7
customizing, 4-6
deleting, 4-8
description, 4-8
Endpoint Encryption, 4-8
Endpoint Encryption Device Lockout, 4-19
Endpoint Encryption Security Violations Report, 4-22
Endpoint Encryption Status, 4-13
Endpoint Encryption Unsuccessful Device Logon, 4-16
Endpoint Encryption Unsuccessful User Logon, 4-18
options, 4-7
understanding, 4-4
Windows patch management, 14-41

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