TREND MICRO™

5.8 TREND MICRO™ Deep Discovery Inspector

Service Pack 1

Syslog Content Mapping Guide

Breakthrough Protection Against APTs and Targeted Attacks

Endpoint Security

Network Security

Protected Cloud

TREND MICRO SMART Protection Network™

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This documentation introduces the main features of the product and/or provides installation instructions for a production environment. Read through the documentation before installing or using the product.

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Table of Contents

Chapter 5: Syslog Content Mapping - TMEF

Preface

Preface

Learn more about the following topics:

Documentation

The documentation set for Deep Discovery Inspector includes the following:

TABLE 1. Product Documentation

DOCUMENT	DESCRIPTION
Administrator's Guide	The Administrator's Guide contains detailed instructions on how to configure and manage Deep Discovery Inspector, and explanations on Deep Discovery Inspector concepts and features.
AWS Deployment Guide	The AWS Deployment Guide contains information about requirements and procedures for planning deployment, deploying, and troubleshooting Deep Discovery Inspector deployment on AWS.
Installation and Deployment Guide	The Installation and Deployment Guide contains information about requirements and procedures for planning deployment, installing Deep Discovery Inspector, and using the Preconfiguration Console to set initial configurations and perform system tasks.
Syslog Content Mapping Guide	The Syslog Content Mapping Guide provides information about log management standards and syntaxes for implementing syslog events in Deep Discovery Inspector.
Quick Start Card	The Quick Start Card provides user-friendly instructions on connecting Deep Discovery Inspector to your network and on performing the initial configuration.
Readme	The Readme 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.
Online Help	Web-based documentation that is accessible from the Deep Discovery Inspector management console. The Online Help contains explanations of Deep Discovery Inspector components and features, as well as procedures needed to configure Deep Discovery Inspector.

Document	Description
Support Portal	The Support Portal is an online database of problem-solving and troubleshooting information. It provides the latest information about known product issues. To access the Support Portal, go to the following website: https://success.trendmicro.com

View and download product documentation from the Trend Micro Online Help Center:

https://docs.trendmicro.com/en-us/home.aspx

Audience

The Deep Discovery Inspector documentation is written for IT administrators and security analysts. The documentation assumes that the reader has an in-depth knowledge of networking and information security, including the following topics:

- Network topologies
- Database management
- Antivirus and content security protection

The documentation does not assume the reader has any knowledge of sandbox environments or threat event correlation.

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
 **WARNING!**	Critical actions and configuration options

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Chapter 1

Introduction

The Trend Micro™ Syslog Content Mapping Guide provides information about log management standards and syntaxes for implementing syslog events in Trend Micro Deep Discovery Inspector.

To enable flexible integration with third-party log management systems, Deep Discovery Inspector supports the following syslog formats:

Log Management System	Description
Common Event Format (CEF) For details, see *Syslog Content Mapping - CEF on page 3-1*	CEF is an open log management standard created by HP ArcSight. Deep Discovery Inspector uses a subset of the CEF dictionary.
Log Event Extended Format (LEEF) For details, see *Syslog Content Mapping - LEEF on page 4-1*	LEEF is an event format developed for IBM Security QRadar. Deep Discovery Inspector uses a subset of the LEEF dictionary.
Trend Micro Event Format (TMEF) For details, see *Syslog Content Mapping - TMEF on page 5-1*	TMEF is a superset of log fields that allow a third-party syslog collector to better control and mitigate detection events provided by Deep Discovery Inspector.

Terminology

Term	Description
CEF	Common Event Format
LEEF	Log Event Extended Format
TMEF	Trend Micro Event Format
CCCA	Command and Control Contact Alert

Chapter 2

Revisions

There were no revisions for version 5.8 SP1.

Chapter 3

Syslog Content Mapping - CEF

The following tables outline syslog content mapping between Deep Discovery Inspector log output and CEF syslog types:

CEF Threat Logs

TABLE 3-1. CEF Threat Logs

CEF KEY	DESCRIPTION	VALUE
Header (logVer)	CEF format version	CEF: 0
Header (vendor)	Appliance vendor	Trend Micro
Header (pname)	Appliance product	Deep Discovery Inspector
Header (pver)	Appliance version	Example: 3.8.1181
Header (eventid)	Event ID	Example: 8
Header (eventName)	Description	Example: Packed executable file copied to a network administrative share
Header (severity)	Severity	• 2: Informational • 4: Low • 6: Medium • 8: High
act	The action in the event	blocked or not blocked
app	Protocol	Example: HTTP
c6a1	Interested IPv6	Example: 2001:0:0:1::21
c6a1Label	Interested IPv6	InterestedIPv6
c6a2	Source IPv6 address	Example: 2001:0:0:1::21
c6a2Label	Source IPv6 address	Source IPv6 Address
c6a3	Destination IPv6 address	Example: 2001:0:0:1::21
c6a3Label	Destination IPv6 address	Destination IPv6 Address
c6a4	Peer IPv6 address	Example: 2001:0:0:1::21
c6a4Label	Peer IPv6 address	PeerIPv6

CEF Key	Description	Value
cat	Event category	Example: File
cnt	Total count	Example: 1
cn1	CCCA detection	0 or 1
cn1Label	CCCA detection	CCCA_Detection
cn3	Threat type	• 0: Malicious content • 1: Malicious behavior • 2: Suspicious behavior • 3: Exploit • 4: Grayware
cn3Label	Threat type	Threat Type
cs1	Mail subject	Example: hello
cs1Label	Mail subject	MailSubject
cs2	Malware name	Example: HEUR_NAMETRICK.A
cs2Label	Malware name	DetectionName
cs3	Host name	Example: CLIENT1
cs3Label	Host name	HostName_Ext
cs4	File name in archive	Example: mtxlegih.dll
cs4Label	File name in archive	FileNameInArchive
cs5	CCCA log is detected by	Example: GLOBAL_INTELLIGENCE or VIRTUAL_ANALYZER or USER_DEFINED
cs5Label	CCCA log is detected by	CCCA_DetectionSource

CEF Key	Description	Value
cs6	Attack Phase	• Intelligence Gathering • Point of Entry • Command and Control Communication • Lateral Movement • Asset and Data Discovery • Data Exfiltration • Nil (no applicable attack phase)
cs6Label	Attack Phase	pAttackPhase
destinationTranslatedAddress	Peer IP	Example: 10.1.144.199
deviceDirection	Packet direction	• 0: Source is external • 1: Source is internal • 2: Unknown
deviceExternalId	Appliance GUID	Example: 6B593E17AFB7-40FBBB28-A4CE-0462-A536
devicePayloadId	An extendable field. Format: {threat_type}:{log_id}:{with pcap file captured}{:extensions}*	Examples: • With pcap file captured: 2:10245:P • Without pcap file captured: 2:10245:
dhost	Destination host name	Example: dhost1
dmac	Destination MAC	Example: 00:0C:29:6E:CB:F9
dpt	Destination port	Value between 0 and 65535
dst	Destination IP address	Example: 10.1.144.199
duser	Mail recipient	Example: duser1

CEF Key	Description	Value
dvc	Appliance IP address	Example: 10.1.144.199
dvchost	Appliance host name	Example: localhost
dvcmac	Appliance MAC address	Example: 00:0C:29:6E:CB:F9
fileHash	SHA1	Example:1EDD5B38DE4729545767088C5CAB395E4197C8F3
filePath	File path	Example: SHARE\\
fileType	Real file type	Example: 1638400
flexNumber1	vLANId	Example: 4095
flexNumber1Label	vLANId	vLANId
fname	File name	Example: excel.rar
fsize	File size	Example: 131372
oldFileHash	Mail attachment SHA1	Example:1EDD5B38DE4729545767088C5CAB395E4197C8F3
oldFileName	Mail attachment file name	Example: excel.rar
oldFileSize	Mail attachment file size	Example: 150000
oldFileType	Mail attachment file type	Example: 1638400
requestClientApplication	User agent	Example: IE
request	URL	Example: http://1.2.3.4/query?term=value
rt	Log generation time	Example: Mar 09 2015 17:05:21 GMT +08:00
shost	Source host name	Example: shost1
smac	Source MAC	Example: 00:0C:29:6E:CB:F9
sourceTranslatedAddress	Interested IP	Example: 10.1.144.199
src	Source IP address	Example: 10.1.144.199

CEF Key	Description	Value
spt	Source port	Value between 0 and 65535
suid	User name	Example: User1
suser	Mail sender	Example: suser1

Log sample:

```
CEF:0|Trend Micro|Deep Discovery Inspector|5.0.1329|0|
Eicar_test_file
- HTTP (Response)|8|dvc=172.22.9.32
dvcmac=00:50:56:AD:03:BD
dvchost=localhost deviceExternalId=E9A3FA433916-
4738984C-A4BF-84A0-D603
rt=Jun 22 2017 09:42:47 GMT+08:00 app=HTTP
deviceDirection=1
dhost=172.22.9.5 dst=172.22.9.5 dpt=57908
dmac=00:50:56:82:e7:a9
shost=172.22.9.54 src=172.22.9.54 spt=80
smac=00:50:56:82:c6:ae
cs3Label=HostName_Ext cs3=172.22.9.54 cs2Label=
DetectionName
cs2=Eicar_test_file fname=eicarcom2.zip fileType=
262340608
fsize=308 requestClientApplication=Wget/1.12 (linux-gnu)
act=not blocked cn3Label=Threat Type cn3=0
destinationTranslatedAddress=172.22.9.5
fileHash=BEC1B52D350D721C7E22A6D4BB0A92909893A3AE
cs4Label=FileNameInArchive cs4=eicar.com
sourceTranslatedAddress=172.22.9.54
cnt=1 cat=Malware cs6Label=pAttackPhase cs6=Point
of Entry flexNumber1Label=vLANId flexNumber1=4095
request=http://172.22.9.54/eicarcom2.zip
devicePayloadId=0:143:P
```

CEF Disruptive Application Logs

TABLE 3-2. CEF Disruptive Application Logs

CEF KEY	DESCRIPTION	VALUE
Header (logVer)	CEF format version	CEF: 0
Header (vendor)	Appliance vendor	Trend Micro
Header (pname)	Appliance product	Deep Discovery Inspector
Header (pver)	Appliance version	Example: 3.8.1181
Header (eventid)	Signature ID	100120
Header (eventName)	Description	Deep Discovery Inspector detected this protocol in your monitored network.
Header (severity)	Severity	• 2: Informational • 4: Low • 6: Medium • 8: High
app	Protocol	Example: HTTP
c6a1	Interested IPv6	Example: 2001:0:0:1::21
c6a1Label	Interested IPv6	InterestedIPv6
c6a2	Source IPv6 address	Example: 2001:0:0:1::21
c6a2Label	Source IPv6 address	Source IPv6 Address
c6a3	Destination IPv6 address	Example: 2001:0:0:1::21
c6a3Label	Destination IPv6 address	Destination IPv6 Address
c6a4	Peer IPv6 address	Example: 2001:0:0:1::21
c6a4Label	Peer IPv6 address	PeerIPv6
cnt	Total count	Example: 1

CEF Key	Description	Value
cn3	Threat type	6
cn3Label	Threat type	ThreatType
destinationTranslatedAddress	Peer IP	Example: 10.1.144.199
deviceDirection	Packet direction	• 0: Source is external • 1: Source is internal • 2: Unknown
deviceExternalId	Appliance GUID	Example: 6B593E17AFB7-40FBBB28-A4CE-0462-A536
devicePayloadId	An extendable field. Format: {threat_type}:{log_id}:{with pcap file captured}{:extensions}*	Examples: • With pcap file captured: 2:10245:P • Without pcap file captured: 2:10245:
dhost	Destination host name	Example: dhost1
dmac	Destination MAC	Example: 00:0C:29:6E:CB:F9
dpt	Destination port	Value between 0 and 65535
dst	Destination IP address	Example: 10.1.144.199
dvc	Appliance IP address	Example: 10.1.144.199
dvchost	Appliance host name	Example: localhost
dvcmac	Appliance MAC address	Example: 00:0C:29:6E:CB:F9
flexNumber1	vLANId	Example: 4095
flexNumber1Label	vLANId	vLANId
rt	Log generation time	Example: Mar 09 2015 17:05:21 GMT +08:00

CEF Key	Description	Value
shost	Source host name	Example: shost1
smac	Source MAC	Example: 00:0C:29:6E:CB:F9
sourceTranslatedAddress	Interested IP	Example: 10.1.144.199
spt	Source port	Value between 0 and 65535
src	Source IP address	Example: 10.1.144.199

Log Sample:

```
CEF:0|Trend Micro|Deep Discovery Inspector|5.0.1329|
100120|Deep
Discovery Inspector detected the protocol in your
monitored network.|2|dvc=172.22.9.32 dvcmac=
00:50:56:AD:03:BD
dvchost=localhost deviceExternalId=E9A3FA433916-
4738984C-A4BF-84A0-D603
rt=Jun 22 2017 10:06:24 GMT+08:00 app=eDonkey
deviceDirection=1 dhost=10.1.100.223 dst=10.1.100.223
dpt=4662 dmac=00:0c:29:a7:72:74 shost=10.1.117.231
src=10.1.117.231 spt=39933 smac=00:30:da:2d:47:32
cn3Label=Threat Type cn3=6 sourceTranslatedAddress=
10.1.117.231
destinationTranslatedAddress=10.1.100.223 cnt=1
flexNumber1Label=vLANId flexNumber1=4095
devicePayloadId=6:11:P
```

CEF Web Reputation Logs

Table 3-3. CEF Web Reputation Logs

CEF Key	Description	Value
Header (logVer)	CEF format version	CEF: 0
Header (vendor)	Appliance vendor	Trend Micro

CEF Key	Description	Value
Header (pname)	Appliance product	Deep Discovery Inspector
Header (pver)	Appliance version	Example: 3.8.1181
Header (eventid)	Signature ID	100101
Header (eventName)	Description	Example: Dangerous URL in Web Reputation Services database - HTTP (Request)
Header (severity)	Severity	• 2: Informational • 4: Low • 6: Medium • 8: High
app	Protocol	Example: HTTP
c6a1	Interested IPv6	Example: 2001:0:0:1::21
c6a1Label	Interested IPv6	InterestedIPv6
c6a2	Source IPv6 address	Example: 2001:0:0:1::21
c6a2Label	Source IPv6 address	Source IPv6 Address
c6a3	Destination IPv6 address	Example: 2001:0:0:1::21
c6a3Label	Destination IPv6 address	Destination IPv6 Address
c6a4	Peer IPv6 address	Example: 2001:0:0:1::21
c6a4Label	Peer IPv6 address	PeerIPv6
cn1	CCCA detection	0 or 1
cn1Label	CCCA detection	CCCA_Detection
cn2	Score	Example: 49
cn2Label	Score	WRSScore
cn3	Threat type	Example: 5

CEF Key	Description	Value
cn3Label	Threat type	Threat Type
cs1	Mail subject	Example: hello
cs1Label	Mail subject	MailSubject
cs2	Category	Example: Gambling
cs2Label	Category	URLCategory
cs3	Host name	Example: CLIENT1
cs3Label	Host name	HostName_Ext
cs4	Attack Phase	• Intelligence Gathering • Point of Entry • Command and Control Communication • Lateral Movement • Asset and Data Discovery • Data Exfiltration • Nil (no applicable attack phase)
cs4Label	Attack Phase	pAttackPhase
destinationTranslatedAddress	Peer IP	Example: 10.1.144.199
deviceDirection	Packet direction	• 0: Source is external • 1: Source is internal • 2: Unknown
deviceExternalId	Appliance GUID	Example: 6B593E17AFB7-40FBBB28-A4CE-0462-A536

CEF Key	Description	Value
devicePayloadId	An extendable field. Format: {threat_type}:{log_id}:{with pcap file captured}{:extensions}*	Examples: • With pcap file captured: 2:10245:P • Without pcap file captured: 2:10245:
dhost	Destination host name	Example: dhost1
dmac	Destination MAC	Example: 00:0C:29:6E:CB:F9
dpt	Destination port	Value between 0 and 65535
dst	Destination IP address	Example: 10.1.144.199
duser	Mail recipient	Example: duser1
dvc	Appliance IP address	Example: 10.1.144.199
dvchost	Appliance host name	Example: localhost
dvcmac	Appliance MAC address	Example: 00:0C:29:6E:CB:F9
flexNumber1	vLANId	Example: 4095
flexNumber1Label	vLANId	vLANId
request	URL	Example: http://1.2.3.4/query?term=value
requestClientApplication	User agent	Example: IE
rt	Log generation time	Example: Mar 09 2015 17:05:21 GMT +08:00
shost	Source host name	Example: shost1
smac	Source MAC	Example: 00:0C:29:6E:CB:F9
sourceTranslatedAddress	Interested IP	Example: 10.1.144.199
spt	Source port	Value between 0 and 65535
src	Source IP address	Example: 10.1.144.199

CEF Key	Description	Value
suser	Mail sender	Example: suser1

Log sample:

```
CEF:0|Trend Micro|Deep Discovery Inspector
|5.0.1329|100101|Ransomware
URL in Web Reputation Services database - HTTP
(Request)|8|dvc=172.22.9.32 dvcmac=00:50:56:AD:03:BD
dvchost=localhost deviceExternalId=E9A3FA433916-4738984
C-A4BF-84A0-D603
rt=Jun 22 2017 10:00:17 GMT+08:00 cs3Label=HostName_Ext
cs3=ca95-1.winshipway.com cn2Label=WRSScore cn2=49
cn3Label=Threat Type cn3=5 dmac=00:16:c8:65:98:d5
shost=172.22.9.5 src=172.22.9.5 spt=41757
smac=00:50:56:82:e7:a9
sourceTranslatedAddress=172.22.9.5
cn1Label=CCCA_Detection
cn1=1 request=http://ca95-1.winshipway.com/
requestClientApplication=Wget/1.12
(linux-gnu) app=HTTP deviceDirection=1
dhost=150.70.162.115
dst=150.70.162.115 dpt=80 cs2Label=URLCategory
cs2=Ransomware destinationTranslatedAddress=
150.70.162.115
cs4Label=pAttackPhase cs4=Command and Control
Communication flexNumber1Label=vLANId flexNumber1=4095
request=http://ca95-1.winshipway.com/
devicePayloadId=5:17:
```

CEF System Logs

Table 3-4. CEF System Logs

CEF Key	Description	Value
Header (logVer)	CEF format version	CEF: 0

CEF Key	Description	Value
Header (vendor)	Appliance vendor	Trend Micro
Header (pname)	Appliance product	Deep Discovery Inspector
Header (pver)	Appliance version	Example: 3.8.1181
Header (eventid)	Signature ID	• 300102 • 300999
Header (eventName)	Description	Example: The system time setting has been changed.
Header (severity)	Severity	• 2: Informational • 4: Warning • 6: Severe Example: 2
c6a2	Source IPv6 address	Example: 2001:0:0:1::21
c6a2Label	Source IPv6 address	Source IPv6 Address
deviceExternalId	Appliance GUID	Example: 6B593E17AFB7-40FBBB28-A4CE-0462-A536
duser	Action by	Example: admin
dvc	Appliance IP address	Example: 10.1.144.199
dvchost	Appliance host name	Example: localhost
dvcmac	Appliance MAC address	Example: 00:0C:29:6E:CB:F9
outcome	Outcome	• Success • Failure Example: Success
rt	Log generation time	Example: Mar 09 2015 17:05:21 GMT +08:00
src	User IP address	Example: 10.1.1.1

Log sample:

```
CEF:0|Trend Micro|Deep Discovery Inspector|3.8.1175|300999|T
he system time setting has been changed.|2|dvc=10.201.156.14
3 dvcmac=00:0C:29:A6:53:0C dvchost=ddi38-143 deviceExternalI
d=6B593E17AFB7-40FBBB28-A4CE-0462-A536 rt=Mar 09 2015 16:46:
08 GMT+08:00
```

CEF Virtual Analyzer Logs: File Analysis Events

TABLE 3-5. CEF File Analysis Events

CEF KEY	DESCRIPTION	VALUE
Header (logVer)	CEF format version	CEF: 0
Header (vendor)	Appliance vendor	Trend Micro
Header (pname)	Appliance product	Deep Discovery Inspector
Header (pver)	Appliance version	Example: 3.8.1181
Header (eventid)	Signature ID	200119
Header (eventName)	Description	Sample file sandbox analysis is finished.
Header (severity)	Severity	3 (fixed value)
cn1	GRID is known good	• 0: Bad file • -1: Unknown file • 1: Good file
cn1Label	GRID is known good	GRIDIsKnownGood
cn2	ROZ rating	• 0: No risk • 1: Low risk • 2: Medium risk • 3: High risk

CEF Key	Description	Value
cn2Label	ROZ rating	ROZRating
cn3	PcapReady	Example: 0
cn3Label	PcapReady	PcapReady
cs1	Sandbox image type	Example: win7
cs1Label	Sandbox image type	SandboxImageType
cs2	Virus name	Example: HEUR_NAMETRICK.A
cs2Label	Virus name	MalwareName
cs3	Parent SHA1	Example: 1EDD5B38DE4729545767088C5CAB395E4197C8F3
cs3Label	Parent SHA1	ParentFileSHA1
deviceExternalId	Appliance GUID	Example: 6B593E17AFB7-40FBBB28-A4CE-0462-A536
dvc	Appliance IP address	Example: 10.1.144.199
dvchost	Appliance host name	Example: localhost
dvcmac	Appliance MAC address	Example: 00:0C:29:6E:CB:F9
fileHash	SHA1	Example: 1EDD5B38DE4729545767088C5CAB395E4197C8F3
fileType	True file type	Example: WIN32 EXE
fname	File name	Example: excel.rar
fsize	File size	Example: 131372
rt	Analysis time	Example: Mar 09 2015 17:05:21 GMT +08:00

Log sample:

```
CEF:0|Trend Micro|Deep Discovery Inspector|3.8.1181|200119|S
ample file sandbox analysis is finished|3| rt=Mar 11 2015 06
:51:46 GMT-04:00 dvc=10.201.156.143 dvchost=ddi38-143 dvcmac
=00:0C:29:A6:53:0C deviceExternalId=D2C1D6D20FF8-4FC98F92-25
EB-D7DA-AF0E fname=Tomb Raider.rar fileHash=1E4677A1EF1FBAD1
1F8D06A9DAD8103C2CE861A9 fileType=RAR fsize=131372 cs1Label=
SandboxImageType cs1=MAK_win7sp1en_offices_noab_TL cn2Label=
ROZRating cn2=1 cn1Label=GRIDIsKnownGood cn1=-1 cs2Label=Mal
wareName cs2=HEUR_NAMETRICK.A cn3Label=PcapReady cn3=0
```

CEF Virtual Analyzer Logs: Notable Characteristics Events

TABLE 3-6. CEF Notable Characteristics Events

CEF KEY	DESCRIPTION	VALUE
Header (logVer)	CEF format version	CEF: 0
Header (vendor)	Appliance vendor	Trend Micro
Header (pname)	Appliance product	Deep Discovery Inspector
Header (pver)	Appliance version	Example: 3.8.1181
Header (eventid)	Signature ID	200127
Header (eventName)	Description	Notable Characteristics of the analyzed sample
Header (severity)	Severity	6 (fixed value)
cs1	Violated policy name	Example: Suspicious network or messaging activity
cs1Label	Violated policy name	PolicyCategory
cs2	Analysis violated event	Example: Uses spoofed version information
cs2Label	Analysis violated event	PolicyName

CEF Key	Description	Value
deviceExternalId	Appliance GUID	Example: 6B593E17AFB7-40FBBB28-A4CE-0462-A536
dvc	Appliance IP address	Example: 10.1.144.199
dvchost	Appliance host name	Example: localhost
dvcmac	Appliance MAC address	Example: 00:0C:29:6E:CB:F9
fileHash	SHA1	Example: 1EDD5B38DE4729545767088C5CAB395E4197C8F3
fileType	True file type	Example: WIN32 EXE
fname	File name	Example: excel.rar
fsize	File size	Example: 131372
msg	Details	Example: The file has no company information.
rt	Analysis time	Example: Mar 09 2015 17:05:21 GMT +08:00

Log sample:

```
CEF:0|Trend Micro|Deep Discovery Inspector|3.8.1181|200127|N
otable Characteristics of the analyzed sample|6|rt=Mar 11 20
15 05:00:26 GMT-04:00 dvc=10.201.156.143 dvchost=ddi38-143 d
vcmac=00:0C:29:A6:53:0C deviceExternalId=D2C1D6D20FF8-4FC98F
92-25EB-D7DA-AF0E fname=DTAS_WIN32_07 fileHash=672B1A8ADB412
C272CCA21A214732C447B650349 fileType=WIN32 EXE fsize=290304
cs1Label=PolicyCategory cs1=Deception, social engineering ms
g=The file has no company information. cs2Label=PolicyName c
s2=Uses spoofed version information
```

CEF Virtual Analyzer Logs: Deny List Transaction Events

TABLE 3-7. CEF Deny List Transaction Events

CEF KEY	DESCRIPTION	VALUE
Header (logVer)	CEF format version	CEF: 0
Header (vendor)	Appliance vendor	Trend Micro
Header (pname)	Appliance product	Deep Discovery Inspector
Header (pver)	Appliance version	Example: 3.8.1181
Header (eventid)	Signature ID	200120
Header (eventName)	Description	Deny List updated
Header (severity)	Severity	3 (fixed value)
act	The action in the event	Add or Remove
cs1	Type	• Deny List IP/Port • Deny List URL • Deny List File SHA1 • Deny List Domain
cs1Label	Type	type
cs2	Risk level	• Low • Medium • High • Confirmed malware
cs2Label	Risk level	RiskLevel
deviceExternalId	Appliance GUID	Example: 6B593E17AFB7-40FBBB28-A4CE-0462-A536

CEF Key	Description	Value
dhost	Destination host name	Example: iplasticalsex.ru
dpt	Destination port	Value between 0 and 65535
dst	Destination IP address	Example: 10.1.144.199
dvc	Appliance IP address	Example: 10.1.144.199
dvchost	Appliance host name	Example: localhost
dvcmac	Appliance MAC address	Example: 00:0C:29:6E:CB:F9
end	Report end time	Example: Mar 09 2015 17:05:21 GMT +08:00
fileHash	SHA1	Example: 1EDD5B38DE4729545767088C5CAB395E4197C8F3
request	URL	Example: http://1.2.3.4/query?term=value
rt	Analysis time	Example: Mar 09 2015 17:05:21 GMT +08:00

Log sample:

```
CEF:0|Trend Micro|Deep Discovery Inspector|3.8.1181|200120|D
eny List updated|3|rt=Mar 11 2015 07:15:45 GMT-04:00 dvc=10.
201.156.143 dvchost=ddi38-143 dvcmac=00:0C:29:A6:53:0C devic
eExternalId=D2C1D6D20FF8-4FC98F92-25EB-D7DA-AF0E cs1Label=ty
pe cs1=Deny List Domain end=Apr 10 2015 07:15:35 GMT-04:00 a
ct=Add dhost=plasticalsex.ru cs2Label=RiskLevel cs2=Medium
```

Chapter 4

Syslog Content Mapping - LEEF

The following tables outline syslog content mapping between Deep Discovery Inspector log output and LEEF syslog types:

Note

In LEEF log syntax, separate event attributes with a tab delimiter, <009>.

LEEF Threat Logs

TABLE 4-1. LEEF Threat Logs

LEEF KEY	DESCRIPTION	VALUE
Header (logVer)	LEEF format version	LEEF: 1.0
Header (vendor)	Appliance vendor	Trend Micro
Header (pname)	Appliance product	Deep Discovery Inspector
Header (pver)	Appliance version	Example: 3.8.1181
Header (eventName)	Event Name	• MALWARE_DETECTION • MALWARE_OUTBREAK_DETECTION • SECURITY_RISK_DETECTION
act	The action in the event	blocked or not blocked
aggregatedCnt	Aggregated count	Example: 1
aptRelated	Indicates an APT-related event	0 or 1
botCommand	BOT command	Example: COMMIT
botUrl	BOT URL	Example: trend.com
cccaDestination	CCCA address	Example: 10.1.144.199
cccaDestinationFormat	CCCA type	• IP_DOMAIN • IP_DOMAIN_PORT • URL • EMAIL
cccaDetection	CCCA detection	0 or 1

LEEF Key	Description	Value
cccaDetectionSource	CCCA log is detected by	• GLOBAL_INTELLIGENCE • VIRTUAL_ANALYZER • USER_DEFINED
cccaRiskLevel	CCCA Risk Level	• 0: Unknown • 1: Low • 2: Medium • 3: High
channelName	Channel name	Example: IRCChannel1
chatUserName	Nickname	Example: IRCUser1
cnt	Total count	Example: 1
compressedFileName	File name in archive	Example: mtxlegih.dll
detectionType	Detection type	• 0: Known detection • 1: Unknown detection • 2: OPS detection
deviceDirection	Packet direction	• 0: Source is external • 1: Source is internal • 2: Unknown
deviceGUID	Appliance GUID	Example: 6B593E17AFB7-40FBBB28-A4CE-0462-A536
deviceMacAddress	Appliance MAC address	Example: 00:0C:29:6E:CB:F9
deviceRiskConfidenceLevel	Confidence level	• 1: High • 2: Medium • 3: Low • 0: Undefined

LEEF Key	Description	Value
devTime	Log generation time	Example: Mar 09 2015 17:05:21 GMT +08:00
devTimeFormat	Time format	MMM dd yyyy HH:mm:ss z
dhost	Destination host name	Example: dhost1
dOSName	Destination host OS	Example: Android
dst	Destination IP address	Example: 10.1.144.199
dstGroup	Network Group assigned to a destination host	Example: monitor1
dstMAC	Destination MAC	Example: 00:0C:29:6E:CB:F9
dstPort	Destination port	Value between 0 and 65535
dstZone	Destination zone	• 0: Not in monitored network • 1: In monitored network and trusted • 2: In monitored network and untrusted
duser	Mail recipient	Example: duser1
dUser1	Destination user name 1	Example: admin
dUser1LoginTime	Destination user log on time 1	Example: Mar 09 2015 17:05:21 GMT +08:00
dUser2	Destination user name 2	Example: admin
dUser2LoginTime	Destination user log on time 2	Example: Mar 09 2015 17:05:21 GMT +08:00
dUser3	Destination user name 3	Example: admin
dUser3LoginTime	Destination user log on time 3	Example: Mar 09 2015 17:05:21 GMT +08:00
dvc	Appliance IP address	Example: 10.1.144.199

LEEF Key	Description	Value
dvchost	Appliance host name	Example: localhost
evtCat	Event category	Example: Suspicious Traffic
evtSubCat	Event subcategory	Example: Email
fileHash	SHA1	Example:1EDD5B38DE4729545767088C5CAB395E4197C8F3
filePath	File path	Example: SHARE\\
fileType	Real file type	Example: 1638400
fname	File name	Example: excel.rar
fsize	File size	Example: 131372
hackerGroup	Hacker group	Example: Comment Crew
hackingCampaign	Hacking campaign	Example:Aurora
hostName	Host name	Example: CLIENT1
interestedIp	Interested IP	Example: 10.1.144.199
mailMsgSubject	Mail subject	Example: hello
malFamily	Malware family	Example:Duqu
malName	Malware name	Example: HEUR_NAMETRICK.A
malType	Malware type	Example: MALWARE
mitigationTaskId	Event task ID for mitigation	Example: dc036acb-9a2e-4939-8244-dedbda9ec4ba
msg	Description	Example: HEUR_NAMETRICK.A - SMTP (Email)
oldFileHash	Mail attachment SHA1	Example: 1EDD5B38DE4729545767088C5CAB395E4197C8F3

LEEF Key	Description	Value
oldFileName	Mail attachment file name	Example: excel.rar
oldFileSize	Mail attachment file size	Example: 150000
oldFileType	Mail attachment file type	Example: 1638400
pAttackPhase	Primary attack phase	• Intelligence Gathering • Point of Entry • Command and Control Communication • Lateral Movement • Asset and Data Discovery • Data Exfiltration • Nil (no applicable attack phase)
pComp	Detection engine/ component	Example: VSAPI
peerIP	Peer IP	Example: 10.1.144.199
proto	Protocol	Example: SMTP
protoGroup	Protocol group	Example: SMTP
ptype	Application type	IDS
requestClientApplication	User agent	Example: IE
riskType	Potential risk	• 0: Known risk • 1: Potential risk
ruleId	Rule ID	Example: 52
sAttackPhase	Secondary attack phase	Example: Point of Entry

LEEF Key	Description	Value
sev	Severity	• 2: Informational • 4: Low • 6: Medium • 8: High
shost	Source host name	Example: shost1
sOSName	Source host OS	Example: Android
src	Source IP address	Example: 10.1.144.199
srcGroup	Network Group assigned to a source host	Example: monitor1
srcMAC	Source MAC	Example: 00:0C:29:6E:CB:F9
srcPort	Source port	Value between 0 and 65535
srcZone	Source zone	• 0: Not in monitored network • 1: In monitored network and trusted • 2: In monitored network and untrusted
suid	User name	Example: User1
suser	Mail sender	Example: suser1
sUser1	Source user name 1	Example: admin
sUser1LoginTime	Source user log on time 1	Example: Mar 09 2015 17:05:21 GMT +08:00
sUser2	Source user name 2	Example: admin
sUser2LoginTime	Source user log on time 2	Example: Mar 09 2015 17:05:21 GMT +08:00
sUser3	Source user name 3	Example: admin

LEEF Key	Description	Value
sUser3LoginTime	Source user log on time 3	Example: Mar 09 2015 17:05:21 GMT +08:00
threatType	Threat type	• 0: Malicious content • 1: Malicious behavior • 2: Suspicious behavior • 3: Exploit • 4: Grayware
url	URL	Example: http://1.2.3.4/query?term=value
vLANId	VLANID	Value between 0 and 4095

Log sample:

Note

When using the LEEF log syntax, separate event attributes with <009> as a tab delimiter.

```
LEEF:1.0|Trend Micro|Deep Discovery Inspector|3.8.1175|SECUR
ITY_RISK_DETECTION|devTimeFormat=MMM dd yyyy HH:mm:ss z<009>
ptype=IDS<009>dvc=10.201.156.143<009>deviceMacAddress=00:0C:
29:A6:53:0C<009>dvchost=ddi38-143<009>deviceGUID=6B593E17AFB
7-40FBBB28-A4CE-0462-A536<009>devTime=Mar 09 2015 11:58:24 G
MT+08:00<009>sev=6<009>protoGroup=HTTP<009>proto=HTTP<009>vL
ANId=4095<009>deviceDirection=1<009>dhost=www.freewebs.com<0
09>dst=216.52.115.2<009>dstPort=80<009>dstMAC=00:1b:21:35:8b
:98<009>shost=172.16.1.197<009>src=172.16.1.197<009>srcPort=
12121<009>srcMAC=fe:ed:be:ef:5a:c6<009>malType=MALWARE<009>s
AttackPhase=Point of Entry<009>fname=setting.doc<009>fileTyp
e=0<009>fsize=0<009>ruleId=20<009>msg=HEUR_NAMETRIC
K.A - SMTP (Email)<009>deviceRiskConfidenceLevel=2
<009>url=http://www.freewebs.com/setting3/setting.doc
<009>pComp=CAV<009>riskType=1<009>
srcGroup=Default<009>srcZone=1<009>dstZone=0<009>dete
ctionType=1<009>act=not blocked<009>threatType=1<009>interes
```

```
tedIp=172.16.1.197<009>peerIp=216.52.115.2<009>hostName=www.
freewebs.com<009>cnt=1<009>aggregatedCnt=1<009>cccaDestinati
onFormat=URL<009>cccaDetectionSource=GLOBAL_INTELLIGENCE<009
>cccaRiskLevel=2<009>cccaDestination=http://www.freewebs.com
/setting3/setting.doc<009>cccaDetection=1<009>evtCat=Callbac
k evtSubCat=Bot<009>pAttackPhase=Command and Control Communi
cation
```

LEEF Disruptive Application Logs

TABLE 4-2. LEEF Disruptive Application Logs

LEEF KEY	DESCRIPTION	VALUE
Header (logVer)	LEEF format version	LEEF: 1.0
Header (vendor)	Appliance vendor	Trend Micro
Header (pname)	Appliance product	Deep Discovery Inspector
Header (pver)	Appliance version	Example: 3.8.1181
Header (eventName)	Event Name	DISRUPTIVE_APPLICATION_DETECTION
aggregatedCnt	AggrCount	Example: 1
cnt	Total count	Example: 1
deviceDirection	Packet direction	• 0: Source is external • 1: Source is internal • 2: Unknown
deviceGUID	Appliance GUID	Example: 6B593E17AFB7-40FBBB28-A4CE-0462-A536
deviceMacAddress	Appliance MAC address	Example: 00:0C:29:6E:CB:F9
devTime	Log generation time	Example: Mar 09 2015 17:05:21 GMT +08:00

LEEF Key	Description	Value
devTimeFormat	Time format	MMM dd yyyy HH:mm:ss z
dhost	Destination host name	Example: dhost1
dOSName	Destination host OS	Example: Android
dst	Destination IP address	Example: 10.1.144.199
dstGroup	Network Group assigned to a destination host	Example: monitor1
dstMAC	Destination MAC	Example: 00:0C:29:6E:CB:F9
dstPort	Destination port	Value between 0 and 65535
dstZone	Destination zone	• 0: Not in monitored network • 1: In monitored network and trusted • 2: In monitored network and not trusted
dvc	Appliance IP address	Example: 10.1.144.199
dvchost	Appliance host name	Example: localhost
interestedIp	Interested IP	Example: 10.1.144.199
msg	Description	Example: Deep Discovery Inspector detected the protocol in your monitored network
pComp	Detection engine/ component	Example: VSAPI
peerIP	Peer IP	Example: 10.1.144.199
proto	Protocol	Example: SMTP
protoGroup	Protocol group	Example: SMTP
ptype	Application type	IDS

LEEF Key	Description	Value
sev	Severity	• 2: Informational • 4: Low • 6: Medium • 8: High
shost	Source host name	Example: shost1
sOSName	Source host OS	Example: Android
src	Source IP address	Example: 10.1.144.199
srcGroup	Network Group assigned to a source host	Example: monitor1
srcMAC	Source MAC	Example: 00:0C:29:6E:CB:F9
srcPort	Source port	Value between 0 and 65535
srcZone	Source zone	• 0: Not in monitored network • 1: In monitored network and trusted • 2: In monitored network and not trusted
threatType	Threat type	6
vLANId	VLANID	Value between 0 and 4095

Log sample:

Note

When using the LEEF log syntax, separate event attributes with <009> as a tab delimiter.

```
LEEF:1.0|Trend Micro|Deep Discovery Inspector|3.8.1175|DISRU
PTIVE_APPLICATION_DETECTION|devTimeFormat=MMM dd yyyy HH:mm:
ss z<009>dvc=10.201.156.143<009>deviceMacAddress=00:0C:29:A6
:53:0C<009>dvchost=ddi38-143<009>deviceGUID=6B593E17AFB7-40F
```

```
BBB28-A4CE-0462-A536<009>ptype=IDS<009>devTime=Mar 09 2015 1
4:20:38 GMT+08:00<009>sev=2<009>protoGroup=STREAMING<009>pro
to=WMSP<009>vLANId=4095<009>deviceDirection=1<009>dhost=12.1
90.48.13<009>dst=12.190.48.13<009>dstPort=80<009>dstMAC=00:1
7:9a:65:f3:05<009>shost=192.168.33.2<009>src=192.168.33.2<00
9>srcPort=35125<009>srcMAC=00:16:6f:a1:3d:7a<009>msg=Deep Di
scovery Inspector detected the protocol in your monitored ne
twork.<009>pComp=CAV<009>threatType=6<009>srcGroup=Default<0
09>srcZone=1<009>dstZone=0<009>interestedIp=192.168.33.2<009
>peerIp=12.190.48.13<009>cnt=1<009>aggregatedCnt=1
```

LEEF Web Reputation Logs

TABLE 4-3. LEEF Web Reputation Logs

LEEF KEY	DESCRIPTION	VALUE
Header (logVer)	LEEF format version	LEEF: 1.0
Header (vendor)	Appliance vendor	Trend Micro
Header (pname)	Appliance product	Deep Discovery Inspector
Header (pver)	Appliance version	Example: 3.8.1181
Header (eventName)	Event Name	WEB_THREAT_DETECTION
cccaDetection	CCCA detection	0 or 1
cccaDetectionSource	CCCA log is detected by	• GLOBAL_INTELLIGENCE • VIRTUAL_ANALYZER • USER_DEFINED
cccaRiskLevel	CCCA Risk Level	• 0: Unknown • 1: Low • 2: Medium • 3: High

LEEF Key	Description	Value
deviceDirection	Packet direction	• 0: Source is external • 1: Source is internal • 2: Unknown
deviceGUID	Appliance GUID	Example: 6B593E17AFB7-40FBBB28-A4CE-0462-A536
deviceMacAddress	Appliance MAC address	Example: 00:0C:29:6E:CB:F9
devTime	Log generation time	Example: Mar 09 2015 17:05:21 GMT +08:00
devTimeFormat	Time format	MMM dd yyyy HH:mm:ss z
dhost	Destination host name	Example: dhost1
dOSName	Destination host OS	Example: Android
dst	Destination IP address	Example: 10.1.144.199
dstGroup	Network Group assigned to a destination host	Example: monitor1
dstMAC	Destination MAC	Example: 00:0C:29:6E:CB:F9
dstPort	Destination port	Value between 0 and 65535
dstZone	Destination zone	• 0: Not in monitored network • 1: In monitored network and trusted • 2: In monitored network and not trusted
duser	Mail recipient	Example: duser1
dvc	Appliance IP address	Example: 10.1.144.199
dvchost	Appliance host name	Example: localhost
hostName	Host name	Example: CLIENT1

LEEF Key	Description	Value
interestedIp	Interested IP	Example: 10.1.144.199
mailMsgSubject	Mail subject	Example: hello
msg	Description	Example: Dangerous URL in Web Reputation Services database - HTTP (Request)
pComp	Detection engine/ component	Example: VSAPI
peerIP	Peer IP	Example: 10.1.144.199
proto	Protocol	Example: SMTP
protoGroup	Protocol group	Example: SMTP
ptype	Application type	IDS
requestClientApplication	User agent	Example: IE
riskScore	Score	Example: 49
sev	Severity	• 2: Informational • 4: Low • 6: Medium • 8: High
shost	Source host name	Example: shost1
sOSName	Source host OS	Example: Android
src	Source IP address	Example: 10.1.144.199
srcGroup	Network Group assigned to a source host	Example: monitor1
srcMAC	Source MAC	Example: 00:0C:29:6E:CB:F9
srcPort	Source port	Value between 0 and 65535

LEEF Key	Description	Value
srcZone	Source zone	• 0: Not in monitored network • 1: In monitored network and trusted • 2: In monitored network and not trusted
suser	Mail sender	Example: suser1
threatType	Threat type	5
url	URL	Example: http://1.2.3.4/query?term=value
urlCat	Category	Example: Gambling
vLANId	VLANID	Value between 0 and 4095

Log sample:

Note

When using the LEEF log syntax, separate event attributes with <009> as a tab delimiter.

```
LEEF:1.0|Trend Micro|Deep Discovery Inspector|3.8.1175|WEB_T
HREAT_DETECTION|devTimeFormat=MMM dd yyyy HH:mm:ss z<009>dvc
=10.201.156.143<009>deviceMacAddress=00:0C:29:A6:53:0C<009>d
vchost=ddi38-143<009>deviceGUID=6B593E17AFB7-40FBBB28-A4CE-0
462-A536<009>ptype=IDS<009>devTime=Mar 09 2015 14:06:36 GMT+
08:00<009>sev=6<009>protoGroup=HTTP<009>proto=HTTP<009>vLANI
d=4095<009>deviceDirection=1<009>dhost=www.freewebs.com<009>
dst=216.52.115.2<009>dstPort=80<009>dstMAC=00:1b:21:35:8b:98
<009>shost=172.16.1.197<009>src=172.16.1.197<009>srcPort=121
21<009>srcMAC=fe:ed:be:ef:5a:c6<009>hostName=www.freewebs.co
m<009>msg=Dangerous URL in Web Reputation Services
database - HTTP (Request)<009>url=http:
//www.freewebs.com/setting3/setting.doc<009>
pComp=TMUFE<009>srcGroup=Default<009>
srcZone=1<009>dstZone=0<009>urlCat=
```

```
Disease Vector<009>riskScore=49<009>threatTy
pe=5<009>interestedIp=172.16.1.197<009>
peerIp=216.52.115.2
```

LEEF System Logs

TABLE 4-4. LEEF System Logs

LEEF KEY	DESCRIPTION	VALUE
Header (logVer)	LEEF format version	LEEF: 1.0
Header (vendor)	Appliance vendor	Trend Micro
Header (pname)	Appliance product	Deep Discovery Inspector
Header (pver)	Appliance version	Example: 3.8.1181
Header (eventName)	Event Name	• PRODUCT_UPDATE • SYSTEM_EVENT
deviceGUID	Appliance GUID	Example: 6B593E17AFB7-40FBBB28-A4CE-0462-A536
deviceMacAddress	Appliance MAC address	Example: 00:0C:29:6E:CB:F9
devTime	Log generation time	Example: Mar 09 2015 17:05:21 GMT +08:00
devTimeFormat	Time format	MMM dd yyyy HH:mm:ss z
dvc	Appliance IP address	Example: 10.1.144.199
dvchost	Appliance host name	Example: localhost
msg	Description	Example: The system time setting has been changed.
ptype	Application type	IDS

LEEF Key	Description	Value
sev	Severity	• 2: Informational • 4: Warning • 6: Severe Example: 2

Log sample:

Note

When using the LEEF log syntax, separate event attributes with <009> as a tab delimiter.

```
LEEF:1.0|Trend Micro|Deep Discovery Inspector|3.8.1175|SYSTE
M_EVENT|dvc=10.201.156.143<009>deviceMacAddress=00:0C:29:A6:
53:0C<009>dvchost=ddi38-143<009>deviceGUID=6B593E17AFB7-40FB
BB28-A4CE-0462-A536<009>ptype=IDS<009>devTimeFormat=MMM dd y
yyy HH:mm:ss z<009>sev=2<009>msg=The system time setting has
 been changed.<009>devTime=Mar 09 2015 16:46:08 GMT+08:00
```

LEEF Correlation Incident Logs

Table 4-5. LEEF Correlation Incident Logs

LEEF Key	Description	Value
Header (logVer)	LEEF format version	LEEF: 1.0
Header (vendor)	Appliance vendor	Trend Micro
Header (pname)	Appliance product	Deep Discovery Inspector
Header (pver)	Appliance version	Example: 3.8.1181
Header (eventName)	Event Name	SUSPICIOUS_BEHAVIOUR_DETECTION

LEEF Key	Description	Value
data0	Correlation data 0	Additional attribute values
data1	Correlation data 1	Additional attribute values
data2	Correlation data 2	Additional attribute values
data3	Correlation data 3	Additional attribute values
data4	Correlation data 4	Additional attribute values
data5	Correlation data 5	Additional attribute values
data6	Correlation data 6	Additional attribute values
data7	Correlation data 7	Additional attribute values
data8	Correlation data 8	Additional attribute values
data9	Correlation data 9	Additional attribute values
deviceDirection	Packet direction	• 0: Source is external • 1: Source is internal • 2: Unknown
deviceGUID	Appliance GUID	Example: 6B593E17AFB7-40FBBB28-A4CE-0462-A536
deviceMacAddress	Appliance MAC address	Example: 00:0C:29:6E:CB:F9
devTime	Log generation time	Example: Mar 09 2015 17:05:21 GMT +08:00
devTimeFormat	Time format	MMM dd yyyy HH:mm:ss z
dvc	Appliance IP address	Example: 10.1.144.199
dvchost	Appliance host name	Example: localhost
interestedHost	Interested host name	Example: trend.net
interestedIp	Interested IP	Example: 10.1.144.199
interestedMacAddress	Interested MAC address	Example: 00:0C:29:6E:CB:F9

LEEF Key	Description	Value
interestedUser	Interested user name 1	Example: user1
interestedUser2	Interested user name 2	Example: user2
interestedUser3	Interested user name 3	Example: user3
pComp	Detection engine/ component	Correlation
proto	Protocol	Example: SMTP
ptype	Application type	IDS
ruleId	Rule ID	Example: 52
ruleName	Rule name	Example: This host has responded to DNS queries.
sev	Severity	• 2: Informational • 4: Low • 6: Medium • 8: High
threatName	Threat name	Example: Malicious Bot
threatType	Threat type	Example: Malware-related
userGroup	User group	Example: Default

Log sample:

Note

When using the LEEF log syntax, separate event attributes with <009> as a tab delimiter.

```
LEEF:1.0|Trend Micro|Deep Discovery Inspector|3.8.1181|SUSPI
CIOUS_BEHAVIOUR_DETECTION|devTimeFormat=MMM dd yyyy HH:mm:ss
 z<009>deviceMacAddress=00:0C:29:A6:53:0C<009>dvchost=ddi38-
143<009>pComp=Correlation<009>dvc=10.201.156.143<009>ptype=I
```

```
DS<009>deviceGUID=D2C1D6D20FF8-4FC98F92-25EB-D7DA-AF0E<009>d
evTime=Mar 11 2015 22:05:50 GMT-04:00<009>sev=2<009>interest
edIp=172.16.0.100<009>interestedHost=172.16.0.100<009>intere
stedMacAddress=00:0c:29:70:45:...36<009>ruleId=47<009>ruleNa
me=This host has responded to DNS queries.<009>threatType=Un
registered Service<009>threatName=Unregistered DNS Server<00
9>proto=DNS Response<009>userGroup=Default<009>deviceDirecti
on=1
```

LEEF Virtual Analyzer Logs: File Analysis Events

TABLE 4-6. LEEF File Analysis Events

LEEF KEY	DESCRIPTION	VALUE
Header (logVer)	LEEF format version	LEEF: 1.0
Header (vendor)	Appliance vendor	Trend Micro
Header (pname)	Appliance product	Deep Discovery Inspector
Header (pver)	Appliance version	Example: 3.8.1181
Header (eventName)	Event Name	FILE_ANALYZED
deviceGUID	Appliance GUID	Example: 6B593E17AFB7-40FBBB28-A4CE-0462-A536
deviceMacAddress	Appliance MAC address	Example: 00:0C:29:6E:CB:F9
deviceOSName	Sandbox image type	SandboxImageType
deviceProcessHash	Parent SHA1	Example: 1EDD5B38DE4729545767088C5CAB395E4197C8F3
devTime	Analysis time	Example: Mar 09 2015 17:05:21 GMT +08:00
devTimeFormat	Time format	MMM dd yyyy HH:mm:ss z
dvc	Appliance IP address	Example: 10.1.144.199

LEEF Key	Description	Value
dvchost	Appliance host name	Example: localhost
fileHash	File SHA1	Example: 1EDD5B38DE4729545767088C5CAB395E4197C8F3
fileType	True file type	Example: WIN32 EXE
fname	File name	Example: excel.rar
fsize	File size	Example: 131372
gridIsKnownGood	GRID is known good	• 0: Bad file • -1: Unknown file • 1: Good file
malName	Virus name	Example: HEUR_NAMETRICK.A
pcapReady	PCAP ready	Example: 1
pComp	Detection source	• Sandbox • UDSO (User-Defined Suspicious Objects)
rozRating	ROZ rating	• 0: No risk • 1: Low risk • 2: Medium risk • 3: High risk
sev	Severity	3 (fixed value)

Log sample:

Note

When using the LEEF log syntax, separate event attributes with <009> as a tab delimiter.

```
LEEF:1.0|Trend Micro|Deep Discovery Inspector|3.8.1181|FILE_
ANALYZED|devTime=Mar 11 2015 07:36:27 GMT-04:00<009>devTimeF
ormat=MMM dd yyyy HH:mm:ss z<009>sev=3<009>pComp=Sandbox<009
>dvc=10.201.156.143<009>dvchost=ddi38-143<009>deviceMacAddre
ss=00:0C:29:A6:53:0C<009>deviceGUID=D2C1D6D20FF8-4FC98F92-25
EB-D7DA-AF0E<009>fname=mwsoemon.exe<009>fileHash=89DE67C5220
91EE259533D9CBDDF37DDB8C8D636<009>malName=Possible_Virus<009
>fileType=WIN32 EXE<009>fsize=59392<009>deviceOSName=MAK_win
7sp1en_offices_noab_TL<009>gridIsKnownGood=-1<009>rozRating=
1<009>pcapReady=1
```

LEEF Virtual Analyzer Logs: Notable Characteristics Events

TABLE 4-7. LEEF Notable Characteristics Events

LEEF KEY	DESCRIPTION	VALUE
Header (logVer)	LEEF format version	LEEF: 1.0
Header (vendor)	Appliance vendor	Trend Micro
Header (pname)	Appliance product	Deep Discovery Inspector
Header (pver)	Appliance version	Example: 3.8.1181
Header (eventName)	Event Name	NOTABLE_CHARACTERISTICS
deviceGUID	Appliance GUID	Example: 6B593E17AFB7-40FBBB28-A4CE-0462-A536
deviceMacAddress	Appliance MAC address	Example: 00:0C:29:6E:CB:F9
deviceOSName	Sandbox image type	Example: win7
devTime	Analysis time	Example: Mar 09 2015 17:05:21 GMT +08:00
devTimeFormat	Time format	MMM dd yyyy HH:mm:ss z
dvc	Appliance IP address	Example: 10.1.144.199

LEEF Key	Description	Value
dvchost	Appliance host name	Example: localhost
fileHash	File SHA1	Example: 1EDD5B38DE4729545767088C5CAB395E4197C8F3
fileType	True file type	Example: WIN32 EXE
fname	File name	Example: excel.rar
fsize	File size	Example: 131372
msg	Details	Example: www.chapisteriadaniel.com
pComp	Detection source	Sandbox
ruleCategory	Violated policy name	Example: Internet Explorer Setting Modification
ruleName	Analysis violated event	Example: Modified important registry items
sev	Severity	6 (fixed value)

Log sample:

Note

When using the LEEF log syntax, separate event attributes with <009> as a tab delimiter.

```
LEEF:1.0|Trend Micro|Deep Discovery Inspector|3.8.1181|NOTAB
LE_CHARACTERISTICS|devTime=Mar 11 2015 05:00:26 GMT-04:00<00
9>devTimeFormat=MMM dd yyyy HH:mm:ss z<009>sev=6<009>pComp=S
andbox<009>dvc=10.201.156.143<009>dvchost=ddi38-143<009>devi
ceMacAddress=00:0C:29:A6:53:0C<009>deviceGUID=D2C1D6D20FF8-4
FC98F92-25EB-D7DA-AF0E<009>fname=DTAS_WIN32_07<009>fileHash=
672B1A8ADB412C272CCA21A214732C447B650349<009>fileType=WIN32
EXE<009>fsize=290304<009>ruleCategory=Suspicious network or
messaging activity<009>ruleName=Queries DNS server<009>msg=0
```

```
12webpages.com<009>deviceOSName=MAK_win7sp1en_offices_noab_T
L
```

LEEF Virtual Analyzer Logs: Deny List Transaction Event

TABLE 4-8. LEEF Deny List Transaction Events

LEEF KEY	DESCRIPTION	VALUE
Header (logVer)	LEEF format version	LEEF: 1.0
Header (vendor)	Appliance vendor	Trend Micro
Header (pname)	Appliance product	Deep Discovery Inspector
Header (pver)	Appliance version	Example: 3.8.1181
Header (eventName)	Event Name	DENYLIST_CHANGE
act	The action in the event	• Add • Remove
deviceExternalRiskType	Risk level	• Low • Medium • High • Confirmed malware
deviceGUID	Appliance GUID	Example: 6B593E17AFB7-40FBBB28-A4CE-0462-A536
deviceMacAddress	Appliance MAC address	Example: 00:0C:29:6E:CB:F9
devTime	Analysis time	Example: Mar 09 2015 17:05:21 GMT +08:00
devTimeFormat	Time format	MMM dd yyyy HH:mm:ss z
dhost	Destination host name	Example: insta-find.com

LEEF Key	Description	Value
dpt	Remote port	Value between 0 and 65535
dst	Remote IP	Example: 10.1.144.199
dvc	Appliance IP address	Example: 10.1.144.199
dvchost	Appliance host name	Example: localhost
end	Report end time	Example: Mar 09 2015 17:05:21 GMT +08:00
fileHash	File SHA1	Example: 1EDD5B38DE4729545767088C5CAB395E4197C8F3
pComp	Detection source	Sandbox
sev	Severity	3 (fixed value)
type	Deny List type	• Deny List IP/Port • Deny List URL • Deny List File SHA1 • Deny List Domain
url	URL	Example: http://1.2.3.4/

Log sample:

Note

When using the LEEF log syntax, separate event attributes with <009> as a tab delimiter.

```
LEEF:1.0|Trend Micro|Deep Discovery Inspector|3.8.1181|DENYL
IST_CHANGE|devTime=Mar 11 2015 05:00:42 GMT-04:00<009>devTim
eFormat=MMM dd yyyy HH:mm:ss z<009>sev=3<009>pComp=Sandbox<0
09>dvc=10.201.156.143<009>dvchost=ddi38-143<009>deviceMacAdd
ress=00:0C:29:A6:53:0C<009>deviceGUID=D2C1D6D20FF8-4FC98F92-
25EB-D7DA-AF0E<009>end=Apr 10 2015 05:00:26 GMT-04:00<009>ac
```

```
t=Add<009>dhost=ourdatatransfers.com<009>deviceExternalRiskT
ype=High<009>type=Deny List Domain
```

Chapter 5

Syslog Content Mapping - TMEF

The following tables outline syslog content mapping between Deep Discovery Inspector log output and TMEF syslog types:

TMEF Threat Logs

TABLE 5-1. TMEF Threat Logs

TMEF KEY	DESCRIPTION	VALUE
Header (logVer)	TMEF format version	CEF: 0
Header (vendor)	Appliance vendor	Trend Micro
Header (pname)	Appliance product	Deep Discovery Inspector
Header (pver)	Appliance version	Example: 3.8.1181
Header (eventid)	Event ID	• 100100 • 100118 • 100119
Header (eventName)	Event Name	• MALWARE_DETECTION • MALWARE_OUTBREAK_DETECTION • SECURITY_RISK_DETECTION
Header (severity)	Severity	• 2: Informational • 4: Low • 6: Medium • 8: High
act	The action in the event	blocked or not blocked
app	Protocol	Example: HTTP
appGroup	Protocol group	Example: HTTP
compressedFileHash	Compressed file SHA1	Example: 1EDD5B38DE4729545767088C5CAB395E4197C8F3
compressedFileName	File name in archive	Example: mtxlegih.dll

TMEF Key	Description	Value
compressedFileType	Compressed file type	Example: 0
cnt	Total count	Example: 1
cn1	CCCA detection	0 or 1
cn1Label	CCCA detection	CCCA_Detection
cn2	Indicates an APT-related event	0 or 1
cn2Label	Indicates an APT-related event	APT Related
cn3	Potential risk	• 0: Known risk • 1: Potential risk
cn3Label	Potential risk	Deep Discovery_PotentialRisk
cn4	Threat type	• 0: Malicious content • 1: Malicious behavior • 2: Suspicious behavior • 3: Exploit • 4: Grayware
cn4Label	Threat type	Deep Discovery_ThreatType
cn5	Aggregated count	Example: 1
cn5Label	Aggregated count	AggregatedCnt
cn6	CCCA Risk Level	• 0: Unknown • 1: Low • 2: Medium • 3: High
cn6Label	CCCA Risk Level	CCCA_RiskLevel

TMEF Key	Description	Value
cn7	Heuristic flag	• 0: Non-heuristic detection • 1: Heuristic detection
cn7Label	Heuristic flag	HeurFlag
cs1	Channel name	Example: IRCChannel1
cs1Label	Channel name	IRCChannelName
cs2	Nickname	Example: IRCUser1
cs2Label	Nickname	IRCUserName
cs3	Host name	Example: CLIENT1
cs3Label	Host name	HostName_Ext
cs4	Network Group assigned to a source host	Example: monitor1
cs4Label	Network Group assigned to a source host	Deep Discovery_SrcGroup
cs5	Source zone	• 0: Not in monitored network • 1: In monitored network and trusted • 2: In monitored network and untrusted
cs5Label	Source zone	Deep Discovery_SrcZone
cs6	Detection type	• 0: Known detection • 1: Unknown detection • 2: OPS detection
cs6Label	Detection type	Deep Discovery_DetectionType
cs7	BOT command	Example: COMMIT
cs7Label	BOT command	BOT_CMD

TMEF Key	Description	Value
cs8	BOT url	Example: trend.com
cs8Label	BOT url	BOT_URL
cs9	Network Group assigned to a destination host	Example: monitor1
cs9Label	Network Group assigned to a destination host	Deep Discovery_DstGroup
cs10	Destination zone	• 0: Not in monitored network • 1: In monitored network and trusted • 2: In monitored network and untrusted
cs10Label	Destination zone	Deep Discovery_DstZone
cs11	CCCA log is detected by	• GLOBAL_INTELLIGENCE • VIRTUAL_ANALYZER • USER_DEFINED • RELEVANCE_RULE
cs11Label	CCCA log is detected by	CCCA_DetectionSource
cs12	CCCA address	Example: 10.1.144.199
cs12Label	CCCA address	CCCA_Destination
cs13	CCCA type	• IP_DOMAIN • IP_DOMAIN_PORT • URL • EMAIL
cs13Label	CCCA type	CCCA_DestinationFormat

TMEF Key	Description	Value
deviceDirection	Packet direction	• 0: Source is external • 1: Source is internal • 2: Unknown
deviceGUID	Appliance GUID	Example: 6B593E17AFB7-40FBBB28-A4CE-0462-A536
deviceMacAddress	Appliance MAC address	Example: 00:0C:29:6E:CB:F9
devicePayloadId	An extendable field. Format: {threat_type}:{log_id}:{with pcap file captured}{:extensions}*	Examples: • With pcap file captured: 2:10245:P • Without pcap file captured: 2:10245:
deviceRiskConfidenceLevel	Confidence level	• 1: High • 2: Medium • 3: Low • 0: Undefined
dhost	Destination host name	Example: dhost1
dmac	Destination MAC	Example: 00:0C:29:6E:CB:F9
dOSName	Destination host OS	Example: Android
dpt	Destination port	Value between 0 and 65535
dst	Destination IP address	Example: 10.1.144.199
duser	Mail recipient	Example: duser1
dUser1	Destination user name 1	Example: admin
dUser1LoginTime	Destination user log on time 1	Example: Mar 09 2015 17:05:21 GMT +08:00
dUser2	Destination user name 2	Example: admin

TMEF Key	Description	Value
dUser2LoginTime	Destination user log on time 2	Example: Mar 09 2015 17:05:21 GMT +08:00
dUser3	Destination user name 3	Example: admin
dUser3LoginTime	Destination user log on time 3	Example: Mar 09 2015 17:05:21 GMT +08:00
dvc	Appliance IP address	Example: 10.1.144.199
dvchost	Appliance host name	Example: localhost
evtCat	Event category	Example: Suspicious Traffic
evtSubCat	Event sub category	Example: Email
externalId	Log ID	Example: 11
fileHash	SHA1	Example:1EDD5B38DE4729545767088C5CAB395E4197C8F3
filePath	File path	Example: SHARE\\
fileType	Real file type	Example: 1638400
fname	File name	Example: excel.rar
fsize	File size	Example: 131372
hackerGroup	Hacker group	Example: Comment Crew
hackingCampaign	Hacking campaign	Example: Aurora
hostSeverity	Host Severity	Example: 4
interestedIp	Interested IP	Example: 10.1.144.199
mailMsgSubject	Mail subject	Example: hello
malFamily	Malware family	Example: Duqu
malName	Malware name	Example: HEUR_NAMETRICK.A
malType	Malware type	Example: MALWARE

TMEF Key	Description	Value
messageId	Message ID	Example: <20090130042416.7060505@jovencitasvirgenes.com.ar>
mitigationTaskId	Event task ID for mitigation	Example: dc036acb-9a2e-4939-8244-dedbda9ec4ba
oldFileHash	Mail attachment SHA1	Example: 1EDD5B38DE4729545767088C5CAB395E4197C8F3
oldFileName	Mail attachment file name	Example: excel.rar
oldFileSize	Mail attachment file size	Example: 150000
oldFileType	Mail attachment file type	Example: 1638400
pAttackPhase	Primary attack phase	• Intelligence Gathering • Point of Entry • Command and Control Communication • Lateral Movement • Asset and Data Discovery • Data Exfiltration • Nil (no applicable attack phase)
pComp	Detection engine/ component	Example: VSAPI
peerIP	Peer IP	Example: 10.1.144.199
ptype	Application type	IDS
reason	Reason	Example: ["Protocol: 4"]
request	URL	Example: http://1.2.3.4/query?term=value

TMEF Key	Description	Value
requestClientApplication	User agent	Example: IE
rt	Log generation time	Example: Mar 09 2015 17:05:21 GMT +08:00
ruleId	Rule ID	Example: 52
ruleName	Description	Example: Email message sent through an unregistered SMTP server
sAttackPhase	Secondary attack phase	• Intelligence Gathering • Point of Entry • Command and Control Communication • Lateral Movement • Asset and Data Discovery • Data Exfiltration • Nil (no applicable attack phase)
shost	Source host name	Example: shost1
smac	Source MAC	Example: 00:0C:29:6E:CB:F9
sOSName	Source host OS	Example: Android
spt	Source port	Value between 0 and 65535
src	Source IP address	Example: 10.1.144.199
suid	User name	Example: User1
suser	Mail sender	Example: suser1
sUser1	Source user name 1	Example: admin
sUser1LoginTime	Source user log on time1	Example: Mar 09 2015 17:05:21 GMT +08:00
sUser2	Source user name 2	Example: admin

TMEF Key	Description	Value
sUser2LoginTime	Source user log on time 2	Example: Mar 09 2015 17:05:21 GMT +08:00
sUser3	Source user name 3	Example: admin
sUser3LoginTime	Source user log on time 3	Example: Mar 09 2015 17:05:21 GMT +08:00
vLANId	VLANID	Value between 0 and 4095

Log sample:

```
CEF:0|Trend Micro|Deep Discovery Inspector|
5.0.1329|100100|
MALWARE_DETECTION|8| ptype=IDS dvc=172.22.9.32
deviceMacAddress=00:50:56:AD:03:BD dvchost=localhost
 deviceGUID=E9A3FA433916-4738984C-A4BF-84A0-D603
rt=Jun 22 2017 09:42:47  GMT+08:00 appGroup=HTTP
app=HTTP vLANId=4095 deviceDirection=1 dhost=172.22.9.5
 dst=172.22.9.5 dpt=57908 dmac=00:50:56:82:e7:a9
shost=172.22.9.54  src=172.22.9.54 spt=80
smac=00:50:56:82:c6:ae
cs3Label=HostName_Ext  cs3=172.22.9.54
malName=Eicar_test_file
malType=Virus fname=eicarcom2.zip  fileType=262340608
fsize=308 ruleId=0 ruleName=Eicar_test_file -
HTTP (Response) deviceRiskConfidenceLevel=0 cn3Label=Deep
Discovery_PotentialRisk cn3=0  cs4Label=Deep
Discovery_SrcGroup
cs4=Default cs5Label=Deep Discovery_SrcZone  cs5=1
cs9Label=Deep Discovery_DstGroup cs9=Default
cs10Label=Deep
 Discovery_DstZone cs10=1 cs6Label=Deep
 Discovery_DetectionType
cs6=0  request=http://172.22.9.54/eicarcom2.zip
requestClientApplication=Wget/1.12  (linux-gnu)
pComp=VSAPI act=not blocked cn4Label=Deep
Discovery_ThreatType
 cn4=0 peerIp=172.22.9.5
fileHash=BEC1B52D350D721C7E22A6D4BB0A92909893A3AE
```

```
 compressedFileName=eicar.com interestedIp=172.22.9.54
cnt=1 dOSName=Linux  cn5Label=AggregatedCount
cn5=1 evtCat=Malware evtSubCat=Trojan cn2Label=APT
 Related cn2=0 pAttackPhase=Point of Entry externalId=143
cn7Label=HeurFlag  cn7=0 compressedFileType=327680
compressedFileHash=3395856CE81F2B7382DEE72602F
798B642F14140 hostSeverity=8 reason=["Malware:
Eicar_test_file"]  devicePayloadId=0:143:P
```

TMEF Disruptive Application Logs

TABLE 5-2. TMEF Disruptive Application Logs

TMEF KEY	DESCRIPTION	VALUE
Header (logVer)	TMEF format version	CEF: 0
Header (vendor)	Appliance vendor	Trend Micro
Header (pname)	Appliance product	Deep Discovery Inspector
Header (pver)	Appliance version	Example: 3.8.1181
Header (eventid)	Signature ID	100120
Header (eventName)	Event Name	DISRUPTIVE_APPLICATION_DETECTION
Header (severity)	Severity	• 2: Informational • 4: Low • 6: Medium • 8: High
app	Protocol	Example: HTTP
appGroup	Protocol group	Example: HTTP
cnt	Total count	Example: 1

TMEF Key	Description	Value
cn4	Threat type	6
cn4Label	Threat type	Deep Discovery_ThreatType
cn5	Aggregated count	Example: 1
cn5Label	Aggregated count	AggregatedCnt
cs4	Network Group assigned to a source host	Example: monitor1
cs4Label	Network Group assigned to a source host	Deep Discovery_SrcGroup
cs5	Source zone	• 0: Not in monitored network • 1: In monitored network and trusted • 2: In monitored network and not trusted
cs5Label	Source zone	Deep Discovery_SrcZone
cs9	Network Group assigned to a destination host	Example: monitor1
cs9Label	Network Group assigned to a destination host	Deep Discovery_DstGroup
cs10	Destination zone	• 0: Not in monitored network • 1: In monitored network and trusted • 2: In monitored network and not trusted
cs10Label	Destination zone	Deep Discovery_DstZone
deviceDirection	Packet direction	• 0: Source is external • 1: Source is internal • 2: Unknown

TMEF Key	Description	Value
deviceGUID	Appliance GUID	Example: 6B593E17AFB7-40FBBB28-A4CE-0462-A536
deviceMacAddress	Appliance MAC address	Example: 00:0C:29:6E:CB:F9
devicePayloadId	An extendable field. Format: {threat_type}:{log_id}:{with pcap file captured}{:extensions}*	Examples: • With pcap file captured: 2:10245:P • Without pcap file captured: 2:10245:
dhost	Destination host name	Example: dhost1
dmac	Destination MAC	Example: 00:0C:29:6E:CB:F9
dOSName	Destination host OS	Example: Android
dpt	Destination port	Value between 0 and 65535
dst	Destination IP address	Example: 10.1.144.199
dvc	Appliance IP address	Example: 10.1.144.199
dvchost	Appliance host name	Example: localhost
externalId	Log ID	Example: 11
interestedIp	Interested IP	Example: 10.1.144.199
msg	Description	Example: Deep Discovery Inspector detected the protocol in your monitored network.
pComp	Detection engine/ component	Example: VSAPI
peerIP	Peer IP	Example: 10.1.144.199
ptype	Application type	IDS
rt	Log generation time	Example: Mar 09 2015 17:05:21 GMT +08:00

TMEF Key	Description	Value
shost	Source host name	Example: shost1
smac	Source MAC	Example: 00:0C:29:6E:CB:F9
sOSName	Source host OS	Example: Android
spt	Source port	Value between 0 and 65535
src	Source IP address	Example: 10.1.144.199
vLANId	VLANID	Value between 0 and 4095

Log sample:

```
CEF:0|Trend Micro|Deep Discovery Inspector|5.0.1329|
100120|
DISRUPTIVE_APPLICATION_DETECTION|2|dvc=172.22.9.32
deviceMacAddress=00:50:56:AD:03:BD dvchost=localhost
deviceGUID=E9A3FA433916-4738984C-A4BF-84A0-D603
ptype=IDS rt=Jun 22 2017 10:06:24 GMT+08:00 appGroup=P2P
app=eDonkey vLANId=4095 deviceDirection=1
dhost=10.1.100.223
dst=10.1.100.223 dpt=4662 dmac=00:0c:29:a7:72:74
shost=10.1.117.231 src=10.1.117.231 spt=39933
smac=00:30:da:2d:47:32 cn5Label=AggregatedCount
cn5=1 msg=Deep Discovery Inspector detected the
protocol in your monitored network. cn4Label=Deep
Discovery_ThreatType cn4=6 cs4Label=Deep
Discovery_SrcGroup
cs4=Default cs5Label=Deep Discovery_SrcZone cs5=1
cs9Label=Deep Discovery_DstGroup cs9=Default
cs10Label=Deep
Discovery_DstZone cs10=1 interestedIp=10.1.117.231
peerIp=10.1.100.223 pComp=CAV cnt=1 externalId=11
devicePayloadId=6:11:
```

TMEF Web Reputation Logs

TABLE 5-3. TMEF Web Reputation Logs

TMEF KEY	DESCRIPTION	VALUE
Header (logVer)	TMEF format version	CEF: 0
Header (vendor)	Appliance vendor	Trend Micro
Header (pname)	Appliance product	Deep Discovery Inspector
Header (pver)	Appliance version	Example: 3.8.1181
Header (eventid)	Signature ID	100101
Header (eventName)	Event Name	WEB_THREAT_DETECTION
Header (severity)	Severity	• 2: Informational • 4: Low • 6: Medium • 8: High
app	Protocol	Example: HTTP
appGroup	Protocol group	Example: HTTP
cn1	CCCA detection	0 or 1
cn1Label	CCCA detection	CCCA_Detection
cn2	Score	Example: 49
cn2Label	Score	Score
cn4	Threat type	5
cn4Label	Threat type	Deep Discovery_ThreatType

TMEF Key	Description	Value
cn6	CCCA Risk Level	• 0: Unknown • 1: Low • 2: Medium • 3: High
cn6Label	CCCA Risk Level	CCCA_RiskLevel
cs3	Host name	Example: CLIENT1
cs3Label	Host name	HostName_Ext
cs4	Network Group assigned to a source host	Example: monitor1
cs4Label	Network Group assigned to a source host	Deep Discovery_SrcGroup
cs5	Source zone	• 0: Not in monitored network • 1: In monitored network and trusted • 2: In monitored network and not trusted
cs5Label	Source zone	Deep Discovery_SrcZone
cs9	Network Group assigned to a destination host	Example: monitor1
cs9Label	Network Group assigned to a destination host	Deep Discovery_DstGroup
cs10	Destination zone	• 0: Not in monitored network • 1: In monitored network and trusted • 2: In monitored network and not trusted
cs10Label	Destination zone	Deep Discovery_DstZone

TMEF Key	Description	Value
cs11	CCCA log is detected by	• GLOBAL_INTELLIGENCE • VIRTUAL_ANALYZER • USER_DEFINED • RELEVANCE_RULE
cs11Label	CCCA log is detected by	CCCA_DetectionSource
deviceGUID	Appliance GUID	Example: 6B593E17AFB7-40FBBB28-A4CE-0462-A536
deviceMacAddress	Appliance MAC address	Example: 00:0C:29:6E:CB:F9
devicePayloadId	An extendable field. Format: {threat_type}:{log_id}:{with pcap file captured}{:extensions}*	Examples: • With pcap file captured: 2:10245:P • Without pcap file captured: 2:10245:
dvc	Appliance IP address	Example: 10.1.144.199
dvchost	Appliance host name	Example: localhost
deviceDirection	Packet direction	• 0: Source is external • 1: Source is internal • 2: Unknown
dhost	Destination host name	Example: 'dhost1
dmac	Destination MAC	Example: 00:0C:29:6E:CB:F9
dOSName	Destination host OS	Example: Android
dpt	Destination port	Value between 0 and 65535
dst	Destination IP address	Example: 10.1.144.199
duser	Mail recipient	Example: duser1
externalId	Log ID	Example: 11

TMEF Key	Description	Value
hostSeverity	Host Severity	Example: 4
interestedIp	Interested IP	Example: 10.1.144.199
mailMsgSubject	Mail subject	Example: hello
msg	Description	Example: C&C Server URL in Web Reputation Services database - HTTP (Request)
pAttackPhase	Primary attack phase	• Intelligence Gathering • Point of Entry • Command and Control Communication • Lateral Movement • Asset and Data Discovery • Data Exfiltration • Nil (no applicable attack phase)
pComp	Detection engine/ component	Example: VSAPI
peerIp	Peer IP	Example: 10.1.144.199
ptype	Application type	IDS
reason	Reason	Example: ["Protocol: 4"]
request	URL	Example: http://1.2.3.4/query?term=value
requestClientApplication	User agent	Example: IE
rt	Log generation time	Example: Mar 09 2015 17:05:21 GMT +08:00
sAttackPhase	Secondary attack phase	Example: Point of Entry
shost	Source host name	Example: shost1

TMEF Key	Description	Value
smac	Source MAC	Example: 00:0C:29:6E:CB:F9
sOSName	Source host OS	Example: Android
spt	Source port	Value between 0 and 65535
src	Source IP address	Example: 10.1.144.199
suser	Mail sender	Example: suser1
urlCat	URL category	Example: C&C Server
vLANId	VLANID	Value between 0 and 4095

Log sample:

```
CEF:0|Trend Micro|Deep Discovery Inspector|5.0.1329|
100101|WEB_THREAT_DETECTION|8|dvc=172.22.9.32
deviceMacAddress=00:50:56:AD:03:BD dvchost=localhost
deviceGUID=E9A3FA433916-4738984C-A4BF-84A0-D603
ptype=IDS rt=Jun 22 2017 10:00:17 GMT+08:00
cs3Label=HostName_Ext
cs3=ca95-1.winshipway.com cs4Label=Deep
Discovery_SrcGroup
cs4=Default cs5Label=Deep Discovery_SrcZone cs5=1
cs10Label=Deep Discovery_DstZone cs10=0 cn2Label=Score
cn2=49 cn4Label=Deep Discovery_ThreatType cn4=5
dmac=00:16:c8:65:98:d5 shost=172.22.9.5 src=172.22.9.5
spt=41757 smac=00:50:56:82:e7:a9 interestedIp=172.22.9.5
cn1Label=CCCA_Detection cn1=1 msg=Ransomware URL
in Web Reputation Services database - HTTP (Request)
request=http://ca95-1.winshipway.com/
requestClientApplication=Wget/1.12
(linux-gnu) pComp=TMUFE appGroup=HTTP app=HTTP
vLANId=4095 deviceDirection=1 dhost=150.70.162.115
dst=150.70.162.115 dpt=80 urlCat=Ransomware
peerIp=150.70.162.115
sOSName=Linux cn6Label=CCCA_RiskLevel cn6=3
cs11Label=CCCA_DetectionSource
cs11=RELEVANCE_RULE externalId=17 hostSeverity=8
reason=["URL: http://ca95-1.winshipway.com/"]
```

```
pAttackPhase=Command and Control Communication
devicePayloadId=5:17:P
```

TMEF System Logs

TABLE 5-4. TMEF System Logs

TMEF KEY	DESCRIPTION	VALUE
Header (logVer)	TMEF format version	CEF: 0
Header (vendor)	Appliance vendor	Trend Micro
Header (pname)	Appliance product	Deep Discovery Inspector
Header (pver)	Appliance version	Example: 3.8.1181
Header (eventid)	Signature ID	• 300102 • 300999
Header (eventName)	Event Name	• PRODUCT_UPDATE • SYSTEM_EVENT • PRODUCT_UPDATE
Header (severity)	Severity	• 2: Informational • 4: Warning • 6: Severe Example: 2
deviceGUID	Appliance GUID	Example: 6B593E17AFB7-40FBBB28-A4CE-0462-A536
deviceMacAddress	Appliance MAC address	Example: 00:0C:29:6E:CB:F9
duser	Action by	Example: admin
dvc	Appliance IP address	Example: 10.1.144.199
dvchost	Appliance host name	Example: localhost

TMEF Key	Description	Value
engType	Engine name	Example: Advanced Threat Scan Engine for Deep Discovery (Linux, 64-bit)
engVer	Engine version	Example: 10.300.1040
msg	Description	Example: The web console timeout setting has been changed.
outcome	Outcome	• Success • Failure Example: Success
patType	Pattern name	Example: Deep Discovery Malware Pattern
patVer	Pattern version	Example: 14.271.92
ptype	Application type	IDS
rt	Log generation time	Example: Mar 09 2015 17:05:21 GMT +08:00
src	User IP address	Example: 10.1.1.1

Log sample:

```
CEF:0|Trend Micro|Deep Discovery Inspector
|3.85.1156|300999|SYSTEM_EVENT|2|ptype=IDS
dvc=172.22.9.12 deviceMacAddress=00:50:56:
AD:CC:EE dvchost=localhostdeviceGUID=
DBD38FFC70B4-41C792BE-D671-0040-8B1D
rt=Mar 10 2017 17:03:31 GMT+08:00
msg=The threat detection setting
has been changed. duser=admin
outcome=Success src=172.17.0.250
```

TMEF Correlated Incident Logs

TABLE 5-5. Correlation Incident Logs

TMEF KEY	DESCRIPTION	VALUE
Header (logVer)	TMEF format version	CEF: 0
Header (vendor)	Appliance vendor	Trend Micro
Header (pname)	Appliance product	Deep Discovery Inspector
Header (pver)	Appliance version	Example: 3.8.1181
Header (eventid)	Signature ID	100127
Header (eventName)	Event Name	SUSPICIOUS_BEHAVIOUR_DETECTION
Header (severity)	Severity	• 2: Informational • 4: Low • 6: Medium • 8: High
app	Protocol	Example: HTTP
cs1	Interested group	Example: Default
cs1Label	Interested group	DD_InterestedGroup
cs2	Malware server address	Example: 10.1.144.199
cs2Label	Malware server address	Malware_Server_IP_Address
cs3	Number of downloaded malware files	Example: 1
cs3Label	Number of downloaded malware files	Number_of_Malware_Files_Downloaded
cs10	Malware name	Example: HEUR_NAMETRICK.A
cs10Label	Malware name	Malware_Name

TMEF Key	Description	Value
deviceDirection	Packet direction	• 0: Source is external • 1: Source is internal • 2: Unknown
deviceGUID	Appliance GUID	Example: 6B593E17AFB7-40FBBB28-A4CE-0462-A536
deviceMacAddress	Appliance MAC address	Example: 00:0C:29:6E:CB:F9
dvc	Appliance IP address	Example: 10.1.144.199
dvchost	Appliance host name	Example: localhost
interestedHost	Interested host	Example: trend.net
interestedIp	Interested IP	Example: 10.1.144.199
interestedMacAddress	Interested MAC	Example: 00:0C:29:6E:CB:F9
interestedUser	Interested user 1	Example: user1
interestedUser2	Interested user 2	Example: user2
interestedUser3	Interested user 3	Example: user3
pComp	Detection engine/ component	Correlation
peerHost	Peer host	Example: 10.1.144.199
peerIp	Peer IP	Example: 10.1.144.199
ptype	Application type	IDS
rt	Log generation time	Example: Mar 09 2015 17:05:21 GMT +08:00
ruleId	Rule ID	Example: 52
ruleName	Description	Example: Email message sent through an unregistered SMTP server

TMEF Key	Description	Value
threatName	Threat name	Example: Malware File Downloaded
threatType	Threat type	Example: Malware-related

Log sample:

```
CEF:0|Trend Micro|Deep Discovery Inspector|3.8.1181|100127|S
USPICIOUS_BEHAVIOUR_DETECTION|2|dvc=10.201.156.143 deviceMac
Address=00:0C:29:A6:53:0C dvchost=ddi38-143 pComp=Correlatio
n ptype=IDS deviceGUID=D2C1D6D20FF8-4FC98F92-25EB-D7DA-AF0E
rt=Mar 11 2015 22:05:50 GMT-04:00 deviceDirection=1 interest
edIp=172.16.0.100 interestedHost=172.16.0.100 interestedMacA
ddress=00:0c:29:70:45:36 ruleId=47 ruleName=This host has re
sponded to DNS queries. threatType=Unregistered Service thre
atName=Unregistered DNS Server app=DNS Response cs1Label=DD_
InterestedGroup cs1=Default peerHost=172.16.1.141 peerIp=172
.16.1.141
```

TMEF Virtual Analyzer Logs: File Analysis Events

Table 5-6. TMEF File Analysis Events

TMEF Key	Description	Value
Header (logVer)	TMEF format version	CEF: 0
Header (vendor)	Appliance vendor	Trend Micro
Header (pname)	Appliance product	Deep Discovery Inspector
Header (pver)	Appliance version	Example: 3.8.1181
Header (eventid)	Signature ID	200119
Header (eventName)	Event Name	FILE_ANALYZED
Header (severity)	Severity	3 (fixed value)

TMEF Key	Description	Value
cn1	GRID is known good	• 0: Bad file • -1: Unknown file • 1: Good file
cn1Label	GRID is known good	GRIDIsKnownGood
cn2	ROZ rating	• 0: No risk • 1: Low risk • 2: Medium risk • 3: High risk
cn2Label	ROZ rating	ROZRating
cn3	PCAP ready	0 or 1
cn3Label	PCAP ready	PcapReady
deviceGUID	Appliance GUID	Example: 6B593E17AFB7-40FBBB28-A4CE-0462-A536
deviceMacAddress	Appliance MAC address	Example: 00:0C:29:6E:CB:F9
deviseOSName	Sandbox image type	Example: win7
deviceProcessHash	Parent SHA1	Example: 1EDD5B38DE4729545767088C5CAB395E4197C8F3
dvc	Appliance IP address	Example: 10.1.144.199
dvchost	Appliance host name	Example: localhost
fileHash	File SHA1	Example: 1EDD5B38DE4729545767088C5CAB395E4197C8F3
fileType	True file type	Example: 1638400
fname	File name	Example: excel.rar
fsize	File size	Example: 131372

TMEF Key	Description	Value
malName	Malware name	Example: SWF_Lfm.926
pComp	Detection source	• Sandbox • UDSO (User-Defined Suspicious Objects)
rt	Analysis time	Example: Mar 09 2015 17:05:21 GMT +08:00

Log sample:

```
CEF:0|Trend Micro|Deep Discovery Inspector|3.8.1181|200119|F
ILE_ANALYZED|3|rt=Mar 11 2015 07:38:04 GMT-04:00 pComp=Sandb
ox dvc=10.201.156.143 dvchost=ddi38-143 deviceMacAddress=00:
0C:29:A6:53:0C deviceGUID=D2C1D6D20FF8-4FC98F92-25EB-D7DA-AF
0E fname=multiple_mask.swf fileHash=643DBF968EF3BECD9A73CF1D
CF44006BC46E15F7 malName=SWF_Lfm.926 fileType=Macromedia Fla
sh fsize=9400 deviceOSName=MAK_win7sp1en_offices_noab_TL cn2
Label=ROZRating cn2=3 cn1Label=GRIDIsKnownGood cn1=-1 cn3Lab
el=PcapReady cn3=1
```

TMEF Virtual Analyzer Logs: Notable Characteristics Events

Table 5-7. TMEF Notable Characteristics Events

TMEF Key	Description	Value
Header (logVer)	TMEF format version	CEF: 0
Header (vendor)	Appliance vendor	Trend Micro
Header (pname)	Appliance product	Deep Discovery Inspector
Header (pver)	Appliance version	Example: 3.8.1181
Header (eventid)	Signature ID	200127

TMEF Key	Description	Value
Header (eventName)	Event Name	NOTABLE_CHARACTERISTICS
Header (severity)	Severity	6 (fixed value)
deviceGUID	Appliance GUID	Example: 6B593E17AFB7-40FBBB28-A4CE-0462-A536
deviceMacAddress	Appliance MAC address	Example: 00:0C:29:6E:CB:F9
deviceOSName	Sandbox image type	Example: win7
dvc	Appliance IP address	Example: 10.1.144.199
dvchost	Appliance host name	Example: localhost
fileHash	File SHA1	Example: 1EDD5B38DE4729545767088C5CAB395E4197C8F3
fileType	True file type	Example: 1638400
fname	File name	Example: excel.rar
fsize	File size	Example: 131372
msg	Details	Example: www.chapisteriadaniel.com
pComp	Detection source	Sandbox
rt	Analysis time	Example: Mar 09 2015 17:05:21 GMT +08:00
ruleCategory	Violated policy name	Example: Internet Explorer Setting Modification
ruleName	Analysis violated event	Example: Modified important registry items

Log sample:

```
CEF:0|Trend Micro|Deep Discovery Inspector|3.8.1181|200127|N
OTABLE_CHARACTERISTICS|6|rt=Mar 11 2015 05:00:26 GMT-04:00 p
Comp=Sandbox dvc=10.201.156.143 dvchost=ddi38-143 deviceMacA
```

```
ddress=00:0C:29:A6:53:0C deviceGUID=D2C1D6D20FF8-4FC98F92-25
EB-D7DA-AF0E fname=DTAS_WIN32_07 fileHash=672B1A8ADB412C272C
CA21A214732C447B650349 fileType=WIN32 EXE fsize=290304 ruleC
ategory=Suspicious network or messaging activity ruleName=Qu
eries DNS server msg=012webpages.com deviceOSName=MAK_win7sp
1en_offices_noab_TL
```

TMEF Virtual Analyzer Logs: Deny List Transaction Events

TABLE 5-8. TMEF Deny List Transaction Events

TMEF KEY	DESCRIPTION	VALUE
Header (logVer)	TMEF format version	CEF: 0
Header (vendor)	Appliance vendor	Trend Micro
Header (pname)	Appliance product	Deep Discovery Inspector
Header (pver)	Appliance version	Example: 3.8.1181
Header (eventid)	Signature ID	200120
Header (eventName)	Event Name	DENYLIST_CHANGE
Header (severity)	Severity	3 (fixed value)
act	The action in the event	Add or Remove
cs1	Deny List type	• Deny List IP/Port • Deny List URL • Deny List File SHA1 • Deny List Domain
cs1Label	Deny List type	type

TMEF Key	Description	Value
deviceExternalRiskType	Risk level	• Low • Medium • High • Confirmed malware
deviceGUID	Appliance GUID	Example: 6B593E17AFB7-40FBBB28-A4CE-0462-A536
deviceMacAddress	Appliance MAC address	Example: 00:0C:29:6E:CB:F9
dhost	Destination host name	Example: insta-find.com
dpt	Remote port	Value between 0 and 65535
dst	Remote IP	Example: 10.1.144.199
dvc	Appliance IP address	Example: 10.1.144.199
dvchost	Appliance host name	Example: localhost
end	Report end time	Example: Mar 09 2015 17:05:21 GMT +08:00
fileHash	File SHA1	Example: 1EDD5B38DE4729545767088C5CAB395E4197C8F3
pComp	Detection source	Sandbox
request	URL	Example: _http://1.2.3.4/query?term=value
rt	Analysis time	Example: Mar 09 2015 17:05:21 GMT +08:00

Log sample:

```
CEF:0|Trend Micro|Deep Discovery Inspector|3.8.1181|200120|D
ENYLIST_CHANGE|3|rt=Mar 11 2015 07:15:45 GMT-04:00 pComp=San
dbox dvc=10.201.156.143 dvchost=ddi38-143 deviceMacAddress=0
0:0C:29:A6:53:0C deviceGUID=D2C1D6D20FF8-4FC98F92-25EB-D7DA-
AF0E cs1Label=type cs1=Deny List URL end=Apr 10 2015 07:15:3
```

```
5 GMT-04:00 act=Add request=http://zalepivmordu.ru:80/ devic
eExternalRiskType=Medium
```

TMEF Retro Scan Report Logs

TABLE 5-9. TMEF Retro Scan Report Logs

TMEF KEY	DESCRIPTION	VALUE
Header (logVer)	TMEF format version	CEF: 0
Header (vendor)	Appliance vendor	Trend Micro
Header (pname)	Appliance product	Deep Discovery Inspector
Header (pver)	Appliance version	Example: 3.8.1181
Header (eventid)	Signature ID	100133
Header (eventName)	Event Name	RETROSCAN_REPORT
Header (severity)	Severity	8
callback_attempt_num	Number of callback attempts	Example: 20
cnc_host_num	Number of C&C hosts	Example: 1
compromised_client_num	Number of compromised clients	Example: 1
deviceGUID	Appliance GUID	Example: 6B593E17AFB7-40FBBB28-A4CE-0462-A536
firstCallbackTime	First callback time	Example: Mar 09 2015 17:05:21 GMT +08:00
lastCallbackTime	Last callback time	Example: Mar 09 2015 17:05:21 GMT +08:00
report_id	Report ID	Example: 74c15fe0-90c9-446b-abc4-379d6d7213e7

TMEF Key	Description	Value
report_ts	Report time	Example: Mar 09 2015 17:05:21 GMT +08:00
report_url	Report URL	Example: https://retroscan.trendmicro.com/retroscan/scanDetails.html?reportID\=1e84c77b-0452-4f00-b5b8-e41c0ea9ef1a &reportType\=standard

Log sample:

```
CEF:0|Trend Micro|Deep Discovery Inspector|3.8.1200|100133|R
ETROSCAN_REPORT|8|guid=906A61690458-4099A441-898C-BDD2-C7C1
report_ts=Mar 29 2015 03:14:27 GMT+02:00 report_id=ffa9474d-
6d72-44f7-a99c-c0d230fec1f3 report_url=https://retroscan.tre
ndmicro.com/retroscan/scanDetails.html?reportID\=1e84c77b-04
52-4f00-b5b8-e41c0ea9ef1a&reportType\=standard compromised_c
lient_num=1 cnc_host_num=1 callback_attempt_num=20 firstCall
backTime=Mar 29 2015 03:04:27 GMT+02:00 lastCallbackTime=Mar
 29 2015 03:09:27 GMT+02:00
```

TMEF Retro Scan Detection Logs

Table 5-10. TMEF Retro Scan Detection Logs

TMEF Key	Description	Value
Header (logVer)	TMEF format version	CEF: 0
Header (vendor)	Appliance vendor	Trend Micro
Header (pname)	Appliance product	Deep Discovery Inspector
Header (pver)	Appliance version	Example: 3.8.1181
Header (eventid)	Signature ID	100134
Header (eventName)	Event Name	RETROSCAN_DETECTION

TMEF Key	Description	Value
Header (severity)	Severity	8
callback_address	Callback address	Example: http://1.2.3.4/
callback_time	Callback time	Example: Mar 09 2015 17:05:21 GMT +08:00
category	Category	Example: Reference
cnc_host	C&C host address	Example: 10.1.144.199
compromised_client	Compromised client address	Example: 10.1.144.199
deviceGUID	Appliance GUID	Example: 6B593E17AFB7-40FBBB28-A4CE-0462-A536
protocol	Protocol	Example: HTTP
rating	Rating	Example: Suspicious
related_attacker_group	Related attacker group	Example: Elise|Taidoor
related_malware	Related malware	Example: fosniw|ge|palevo
report_id	Report ID	Example: 74c15fe0-90c9-446b-abc4-379d6d7213e7
scan_category	Scan category	Example: C&C Server
scan_rating	Scan rating	Example: Dangerous
scan_ts	Scan time	Example: Mar 09 2015 17:05:21 GMT +08:00

Log sample:

```
CEF:0|Trend Micro|Deep Discovery Inspector|3.8.1200|100134|R
ETROSCAN_DETECTION|8|guid=906A61690458-4099A441-898C-BDD2-C7
C1 report_id=0938508b-ec47-47a1-80ea-cd8e3b747822 scan_ts=Ma
r 29 2015 03:14:31 GMT+02:00 callback_time=Mar 29 2015 03:04
:31 GMT+02:00 callback_address=http://app2.winsoft98.com/app
.asp?prj\=4&pid\=haha1&logdata\=MacTryCnt:0&code\=&ver\=1.0.
0.45&appcheck\=1 compromised_client=59.125.99.235 cnc_host=
```

```
app2.winsoft98.com protocol=HTTP rating=Suspicious category
=Reference scan_rating=Dangerous scan_category=C&C Server r
elated_malware=fosniw|ge|mactrycnt|palevo related_attacker_
group=Elise|Taidoor
```

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