

HP OpenView Reporting and Network Solutions

Event Classifier Correlator User's Guide

Software Version: 2.0

for HP-UX, Solaris, and Windows® operating systems



i n v e n t

Manufacturing Part Number: None

April 2004

© Copyright 2004 Hewlett-Packard Development Company, L.P.

Legal Notices

Warranty.

Hewlett-Packard makes no warranty of any kind with regard to this document, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Hewlett-Packard shall not be held liable for errors contained herein or direct, indirect, special, incidental or consequential damages in connection with the furnishing, performance, or use of this material.

A copy of the specific warranty terms applicable to your Hewlett-Packard product can be obtained from your local Sales and Service Office.

Restricted Rights Legend.

Use, duplication or disclosure by the U.S. Government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause in DFARS 252.227-7013.

Hewlett-Packard Company
United States of America

Rights for non-DOD U.S. Government Departments and Agencies are as set forth in FAR 52.227-19(c)(1,2).

Copyright Notices.

©Copyright 2004 Hewlett-Packard Development Company

No part of this document may be copied, reproduced, or translated to another language without the prior written consent of Hewlett-Packard Company. The information contained in this material is subject to change without notice.

Trademark Notices.

Windows[®] is a U.S. registered trademark of Microsoft Corporation.

UNIX[®] is a registered trademark of The Open Group.

1. Introducing the Event Classifier Correlator

Overview	8
Features and Benefits of the Event Classifier Correlator	9
Event Classifications	10

2. Installing Event Classifier Correlator

Preparing for Installation	12
Hardware Requirements	12
Software Requirements	12
Installing the Event Classifier Correlator	14
Installing on a UNIX Operating System	14
Installing on a Windows Operating System	15
Increasing the NNM Event Database Size	16
Loading and Unloading the Event Classifier Correlator	18
Loading On a UNIX Operating System	18
Loading On a Windows Operating System	18
Verifying That the Event Classifier Correlator is Loaded	19
Unloading on a UNIX Operating System	19
Unloading on a Windows Operating System	20
Uninstalling the Event Classifier Correlator	21
Uninstalling on an HP-UX Operating System	21
Uninstalling on a Solaris Operating System	21
Uninstalling on a Windows Operating System	21

3. Accessing Event Classifier Correlator Alarms

Alarm Categories	24
Viewing Alarms	25

4. Troubleshooting the Event Classifier Correlator

Troubleshooting Checklist	28
Verifying That the NNM Services are Operating on the Management Station	29
Verifying the ECS Circuit	30
Tracing the ECS Engine	31

Contents

Support

Please visit the HP OpenView web site at:

<http://openview.hp.com/>

There you will find contact information and details about the products, services, and support that HP OpenView offers.

You can go directly to the HP OpenView support web site at:

<http://support.openview.hp.com/>

The support site includes:

- Downloadable documentation
- Troubleshooting information
- Patches and updates
- Problem reporting
- Training information
- Support program information

1 **Introducing the Event Classifier Correlator**

Overview

The Event Classifier Correlator is a valuable add-on software component to HP OpenView Network Node Manager (NNM). The Event Classifier Correlator correlates traps from devices into higher-level NNM alarms, greatly reducing the number of alarms an operator must consider in the NNM alarm browser. For this release, the Event Classifier Correlator correlates traps from Cisco devices only.

The Event Classifier Correlator classifies traps into one of the pre-defined categories of the NNM alarm browser, which enables you to find the important traps more quickly. For Cisco traps, there are eight pre-defined categories, which are based on the exception groups defined in Cisco Device Fault Manager (DFM).

The Event Classifier Correlator correlates alarms for the managed devices such that only one alarm per device appears in the NNM alarm browser for each category. You can view the correlated traps from the NNM alarm browser by opening a drill-down window of the alarm for that category.

Features and Benefits of the Event Classifier Correlator

The following list outlines the features of the Event Classifier Correlator and its benefits to you.

- The Event Classifier Correlator classifies all Cisco traps into pre-defined categories based on the Cisco Device Fault Manager (DFM). These classifications are defined in “Event Classifications” on page 10.
- When conditions of the correlation rules are met, the Event Classifier Correlator generates new events that correspond to the pre-defined categories.
- When an identical classifier alarm is generated, NNM and the Event Classifier Correlator use *de-duplication* to nest the duplicate alarm beneath the most recent alarm. By reducing the quantity of alarms displayed in the alarm browser, you can easily identify the most important alarms.
- The NNM alarm browser displays only those generated events for the pre-defined categories, not the raw traps. This greatly reduces the number of alarms operators must consider.
- NNM logs the correlated traps into a file. These correlated traps can be viewed in a drill-down window for an alarm.
- No traps are discarded before you configure the system to do so.

Event Classifications

Traps are classified and correlated into one of eight event classifications or categories. These pre-defined categories correspond to the exception groups in Cisco Device Fault Manager (DFM). The following list contains the types of alarms that can be generated and forwarded to the NNM alarm browser.

- OV Backplane Utilization Exception Event
(OID .1.3.6.1.4.1.11.2.17.1.60001001)
- OV Error Exception Event
(OID .1.3.6.1.4.1.11.2.17.1.60001002)
- OV Operational Exception Event
(OID .1.3.6.1.4.1.11.2.17.1.60001003)
- OV Performance Exception Event
(OID .1.3.6.1.4.1.11.2.17.1.60001004)
- OV Power Supply Exception Event
(OID .1.3.6.1.4.1.11.2.17.1.60001005)
- OV Resource Exception Event
(OID .1.3.6.1.4.1.11.2.17.1.60001006)
- OV Temperature Exception Event
(OID .1.3.6.1.4.1.11.2.17.1.60001007)
- OV Unclassified Event
(OID .1.3.6.1.4.1.11.2.17.1.60001008)

NOTE

For this release, no Cisco traps are configured for the OV Backplane Utilization Exception Event or OV Resource Exception Event categories.

2 **Installing Event Classifier Correlator**

Preparing for Installation

Before installing the Event Classifier Correlator, verify that your computer meets the hardware and software requirements, and that the prerequisite software has been set up properly.

Hardware Requirements

Verify that the following disk space settings are configured before installing the Event Classifier Correlator component.

Table 2-1

Recommended Disk Space Settings

Location	Size
<i>UNIX:</i> \$OV_MAIN_PATH <i>Windows:</i> %OV_MAIN_PATH%	1 MB

Software Requirements

Supported Operating Systems

The following operating systems are supported.

- HP-UX 11.0 or HP-UX 11.11
- Solaris 2.8 or Solaris 2.9
- Windows® 2000 with service pack 3.0 or Windows® XP

Network Node Manager

Verify that the following software and all its prerequisites and patches are installed on all systems in the managed environment:

- HP OpenView Network Node Manager (NNM), version 7.01

Refer to the *Network Node Manager Installation Guide* for instructions on how to install the NNM product.

Verifying Proper Installation of Network Node Manager

To verify that the NNM product is installed, do the following:

UNIX:

```
/usr/sbin/swlist | grep "OpenView Network Node Manager"
```

Windows:

1. From the Start menu, launch the Control Panel.
2. Double-click Add/Remove Programs.
3. Verify that HP OpenView Network Node Manager is present in the list of programs.

Setting the NNM Environment Variables

To source the NNM environment variables, do the following:

- *UNIX* using sh or ksh: **. /opt/OV/bin/ov.envvars.sh**
- *UNIX* using csh: **source /opt/OV/bin/ov.envvars.csh**
- *Windows:* In a command window, type
install_dir\bin\ov.envvars.bat

This step sets the following environment variables required by the Event Classifier Correlator:

- *UNIX:* \$OV_BIN, \$OV_LRF, \$OV_CONF, \$OV_MAIN_PATH
- *Windows:* %OV_BIN%, %OV_LRF%, %OV_CONF%, %OV_MAIN_PATH%

Installing the Event Classifier Correlator

If you encounter problems while performing the installation, see Chapter 4, “Troubleshooting the Event Classifier Correlator,” on page 27, as well as the latest *Event Classifier Correlator Release Notes*, and the latest *Reporting and Network Solutions Release Notes* for assistance.

NOTE

If you are installing the Event Classifier Correlator over an existing installation of the Event Classifier Correlator, unload the event classifier correlators as described in “Loading and Unloading the Event Classifier Correlator” on page 18 before continuing with the installation.

Installing on a UNIX Operating System

To install the Event Classifier Correlator on a UNIX[®] operating system, and load it into NNM, follow these steps:

1. Log on to the NNM management station as user `root`.
2. Verify that the NNM environment variables are sourced properly as described in “Setting the NNM Environment Variables” on page 13.
3. Mount the Reporting and Network Solutions CD-ROM.
4. From the Reporting and Network Solutions CD-ROM directory, start setup.

The installation script verifies that the target system has the correct version of NNM installed and running. If NNM is not installed and running, the installation script exits with an error. See “Verifying Proper Installation of Network Node Manager” on page 13 and “Verifying That the NNM Services are Operating on the Management Station” on page 29 for more information.

5. Follow the instructions on the screen to install the Event Classifier Correlator component. Table 2-2 lists the decisions you will be asked to make during the installation process.

Table 2-2 UNIX Installation Options for the Event Classifier Correlator

Option	Description
List of product types to install	Choose to install NNM Value-add Components.
List of value-add components	Choose to install the NNM Event Classifier Correlator.

6. Increase the NNM event database size as described in “Increasing the NNM Event Database Size” on page 16.
7. Configure all managed devices to forward traps to the NNM management station.

If possible, do not enable repetitive traps that report duplicate information as it may slow the performance of the event system.

Installing on a Windows Operating System

To install the Event Classifier Correlator on a Windows operating system and load it into NNM, follow these steps:

1. Log on to the NNM management station as user administrator.
2. Verify that the NNM environment variables are sourced properly as described in “Setting the NNM Environment Variables” on page 13.
3. Insert the Reporting and Network Solutions CD-ROM into the CD-ROM drive.
4. The CD-ROM should start automatically. If it does not, go to the Reporting and Network Solutions CD-ROM directory, and then double-click `setup.bat`.

The installation script verifies that the target system has the correct version of NNM installed and running. If NNM is not installed and running properly, the installation script exits with an error. See “Verifying Proper Installation of Network Node Manager” on page 13 and “Verifying That the NNM Services are Operating on the Management Station” on page 29 for more information.

5. Follow the instructions on the screen to install the Event Classifier Correlator component. Table 2-3 lists the decisions you will be asked to make during the installation process.

Table 2-3 Windows Installation Options for the Event Classifier Correlator

Option	Description
List of product types to install	Choose to install NNM Value-add Components.
List of value-add components	Choose to install the NNM Event Classifier Correlator.

6. Determine the state of the PMD process:

```
%OV_BIN%\ovstatus -c
```

7. If the PMD process is not running, stop and restart all NNM services:

```
%OV_BIN%\ovstop -c
```

```
%OV_BIN%\ovstart -c
```

8. Increase the NNM event database size as described in “Increasing the NNM Event Database Size” on page 16.
9. Configure all managed devices to forward traps to the NNM management station.

If possible, do not enable repetitive traps that report duplicate information as it may slow the performance of the event system.

Increasing the NNM Event Database Size

The default NNM event database size is 16 MB. Increasing the size of the NNM event database ensures that NNM is able to capture the numerous traps that may come from the managed devices.

To increase the NNM event database size, follow these steps:

1. Verify that the NNM environment variables are sourced properly as described in “Setting the NNM Environment Variables” on page 13.

- Using any text editor, open the PMD local registration file:

UNIX: \$OV_LRF/pmd.lrf

Windows: %OV_LRF%\pmd.lrf

- Edit the second line of the PMD local registration file to read:

OVs_YES_START::-SOV_EVENT;b64:OVs_WELL_BEHAVED:30:PAUSE

The OV_EVENT stack option b64 specifies that the event database size is 64 MB. For more information on the OV_EVENT stack options, see the ov_event(5) UNIX manpage or the Windows reference page in NNM's online help.

- Apply the change to the PMD local registration file:

UNIX: \$OV_BIN/ovaddobj \$OV_LRF/pmd.lrf

Windows: %OV_BIN%\ovaddobj %OV_LRF%\pmd.lrf

- Stop the OpenView background processes:

UNIX: \$OV_BIN/ovstop -c

Windows: %OV_BIN%\ovstop -c

- Start the OpenView background processes:

UNIX: \$OV_BIN/ovstart -c

Windows: %OV_BIN%\ovstart -c

Loading and Unloading the Event Classifier Correlator

The Event Classifier Correlator is automatically loaded when it is installed. To load or unload the Event Classifier Correlator separately from the installation, follow the instructions relevant to your operating system.

Loading On a UNIX Operating System

To load the Event Classifier Correlator on a UNIX operating system, follow these steps:

1. Log on to the NNM management station as user `root`.
2. Verify that the NNM environment variables are sourced properly as described in “Setting the NNM Environment Variables” on page 13.
3. Load the Event Classifier Correlator:
 - a. `cd $OV_MAIN_PATH/NetSolutions/EventClassifier/bin`
 - b. `./classifier_load.ovpl`
4. Verify that the Event Classifier Correlator is loaded as described in “Verifying That the Event Classifier Correlator is Loaded” on page 19.

Loading On a Windows Operating System

To load the Event Classifier Correlator on a Windows operating system, follow these steps:

1. Log on to the NNM management station as user administrator.
2. Verify that the NNM environment variables are sourced properly as described in “Setting the NNM Environment Variables” on page 13.
3. Load the Event Classifier Correlator:
 - a. `cd %OV_MAIN_PATH%\NetSolutions\EventClassifier\bin`
 - b. `classifier_load.ovpl`

4. Verify that the Event Classifier Correlator is loaded as described in “Verifying That the Event Classifier Correlator is Loaded” on page 19.

Verifying That the Event Classifier Correlator is Loaded

To verify that the Event Classifier Correlator is loaded, follow these steps:

1. Launch the OpenView Composer interface:

UNIX: `$OV_BIN/ovcomposer -m o`

Windows: `%OV_BIN%\ovcomposer -m o`

Verify that the correlation rules for Cisco traps are displayed.

2. Launch the Event Configuration interface:

UNIX: `$OV_BIN/xnmtrap`

Windows: `%OV_BIN%\xnmtrap`

Choose the name space `OV_ECC` from the name space table. Verify that the definitions for the Cisco traps are displayed.

3. In any text editor, open the file:

UNIX: `$OV_CONF/dedup.conf`

Windows: `%OV_CONF%\dedup.conf`

Verify that the entries for the Event Classifier Correlator are present.

Unloading on a UNIX Operating System

Unload the Event Classifier Correlator before its removal. To unload the Event Classifier Correlator on a UNIX operating system, follow these steps:

1. Log on to the NNM management station as user `root`.
2. Verify that the NNM environment variables are sourced properly as described in “Setting the NNM Environment Variables” on page 13.

3. Unload the Event Classifier Correlator:

- a. `cd $OV_MAIN_PATH/NetSolutions/EventClassifier/bin`
- b. `./classifier_unload.ovpl`

Unloading on a Windows Operating System

Unload the Event Classifier Correlator before its removal. To unload the Event Classifier Correlator on a Windows operating system, follow these steps:

1. Log on to the NNM management station as user administrator.
2. Verify that the NNM environment variables are sourced properly as described in “Setting the NNM Environment Variables” on page 13.
3. Unload the Event Classifier Correlator:
 - a. `cd %OV_MAIN_PATH%\NetSolutions\EventClassifier\bin`
 - b. `classifier_unload.ovpl`

Uninstalling the Event Classifier Correlator

To uninstall the Event Classifier Correlator, follow the instructions relevant to your operating system.

Uninstalling on an HP-UX Operating System

To uninstall the Event Classifier Correlator on the HP-UX operating system, follow these steps:

1. Log on to the NNM management station as user `root`.
2. Unload the Event Classifier Correlator as described in “Unloading on a UNIX Operating System” on page 19.
3. Remove the Event Classifier Correlator:

```
/usr/sbin/swremove HPOvCCorr
```

Uninstalling on a Solaris Operating System

To uninstall the Event Classifier Correlator on the Solaris operating system, follow these steps:

1. Log on to the NNM management station as user `root`.
2. Unload the Event Classifier Correlator as described in “Unloading on a UNIX Operating System” on page 19.
3. Remove the Event Classifier Correlator:

```
/usr/sbin/pkgrm HPOvCCorr
```

Uninstalling on a Windows Operating System

To uninstall the Event Classifier Correlator on a Windows operating system, follow these steps:

1. Log on to the NNM management station as user `administrator`.
2. Unload the Event Classifier Correlator as described in “Unloading on a Windows Operating System” on page 20.
3. On the taskbar, click `Start`, and then click `Control Panel`.

Uninstalling the Event Classifier Correlator

4. Double-click Add or Remove Programs.
5. Choose to remove the HP OpenView NNM Event Classifier Correlator program.

3 Accessing Event Classifier Correlator Alarms

Alarm Categories

The Event Classifier Correlator receives traps from managed devices and generates new OpenView events that appear in one of the eight pre-defined alarm categories of the NNM alarm browser.

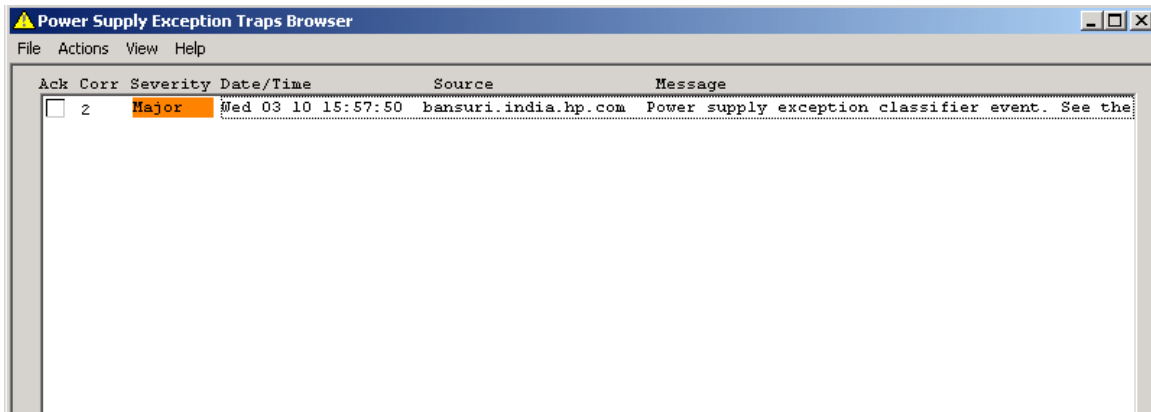
The Event Classifier Correlator alarm categories are:

- Backplane Utilization Exception Events
- Error Exception Events
- Operational Exception Events
- Performance Exception Events
- Power Supply Exception Events
- Resource Exception Events
- Temperature Exception Events
- Unclassified Events

Viewing Alarms

Double-click any of the alarm categories to open an alarm browser containing alarms specific to that category.

Figure 3-1 Power Supply Exception Traps Browser



The alarm browser for an Event Classifier Correlator category, such as the Power Supply Exception Traps Browser shown in Figure 3-1, displays only one alarm per device. This alarm specifies the source of the exception fault, the time the alarm was generated by the Event Classifier Correlator, the severity of the alarm, and the number of correlated traps and events for that alarm.

Double-click the number in the Corr column to display the correlated traps and events associated with that Event Classifier Correlator-generated alarm. For example, double-clicking Corr number 2 in Figure 3-1 displays the correlated traps and events for a power supply exception event from the `bansuri.india.hp.com` device.

NNM and the Event Classifier Correlator use *de-duplication* to nest duplicate alarms beneath the most recent alarm. So, only one alarm per device appears in an event classifier browser. When a new Event Classifier Correlator alarm is generated, that alarm appears in the alarm browser. Additionally, the older Event Classifier Correlator-generated alarm from that device no longer appears in the alarm browser; it is added to the list of correlated traps and events.

Accessing Event Classifier Correlator Alarms

Viewing Alarms

4

Troubleshooting the Event Classifier Correlator

Troubleshooting Checklist

Following is a summary of items to consider if you are having difficulties with the Event Classifier Correlator:

- ❑ Verify that NNM is installed as described in “Verifying Proper Installation of Network Node Manager” on page 13.
- ❑ Verify that the NNM environment variables have been sourced properly as described in “Setting the NNM Environment Variables” on page 13.
- ❑ Verify that the NNM services are running properly as described in “Verifying That the NNM Services are Operating on the Management Station” on page 29.
- ❑ Verify that the Event Classifier Correlator is loaded into NNM as described in “Loading and Unloading the Event Classifier Correlator” on page 18.
- ❑ Verify that the managed devices are properly configured to forward traps to the NNM management station. Avoid repetitive traps that report duplicate information and decrease performance. For information about these configurations, see the documentation that came with your routers.
- ❑ Verify the ECS circuit as described in “Verifying the ECS Circuit” on page 30.
- ❑ Trace the ECS circuit as described in “Tracing the ECS Engine” on page 31.
- ❑ If you are trying to install the Event Classifier Correlator over an existing version, unload the Event Classifier Correlator as described in “Loading and Unloading the Event Classifier Correlator” on page 18 before following the Event Classifier Correlator installation steps.
- ❑ For additional troubleshooting information, refer to the latest *Event Classifier Correlator Release Notes* and *Reporting and Network Solutions Release Notes* available on the Web at http://ovweb.external.hp.com/lpe/doc_serv under the Reporting and Network Solutions product category.

Verifying That the NNM Services are Operating on the Management Station

To verify that the NNM services are operating on the management station, follow these steps:

1. Verify that Network Node Manager is installed as described in “Network Node Manager” on page 12.
2. Determine the status of the NNM services:
 - *UNIX*: `$OV_BIN/ovstatus -v`
 - *Windows*: `%OV_BIN%\ovstatus -v`

All of the processes, including PMD, should be running.

3. If NNM and all associated processes are not running, stop and restart the NNM services:
 - *UNIX*:
`$OV_BIN/ovstop -c`
`$OV_BIN/ovstart -c`
 - *Windows*:
`%OV_BIN%\ovstop -c`
`%OV_BIN%\ovstart -c`

Verifying the ECS Circuit

To verify information about the ECS circuit, follow these steps:

1. Retrieve information about the Composer circuit:

UNIX: `$OV_BIN/ecsmgr -info`

Windows: `%OV_BIN%\ecsmgr -info`

2. Retrieve statistics about the Composer circuit:

UNIX: `$OV_BIN/ecsmgr -stats`

Windows: `%OV_BIN%\ecsmgr -stats`

For information on the `ecsmgr` command, see the `ecsmgr` UNIX manpage or the Windows reference page in NNM's online help.

Tracing the ECS Engine

To trace the ECS circuit:

- *Windows:* `$OV_BIN/ecsmgr -trace <bitmap>`
- *UNIX:* `$OV_BIN/ecsmgr -trace <bitmap>`

For information on the `ecsmgr` command, including correctly setting the `bitmap` argument, see the `ecsmgr` UNIX manpage or the Windows reference page in NNM's online help.

A

alarm categories, 24

B

Backplane Utilization Exception Event, 10, 24

C

checklist

troubleshooting, 28

configuring

NNM event database, 16

Corr column, 25

correlated alarms browser, 25

D

dedup.conf, 19

de-duplication, 9, 25

Device Fault Manager (DFM), 8, 9, 10

E

ECS circuit

tracing, 31

verifying, 30

ecsmgr

-info, 30

-stats, 30

-trace, 31

environment variables, 13

Error Exception Event, 10, 24

Event Classifier Correlator

benefits, 9

I

installation

hardware requirements, 12

software requirements, 12

UNIX, 14

Windows, 15

L

loading

UNIX, 18

verification of, 19

Windows, 18

N

Network Node Manager

setting environment variables, 13

verifying, 13

verifying services, 29

O

operating systems

supported, 12

Operational Exception Event, 10, 24

ovcomposer, 19

P

Performance Exception Event, 10, 24

Power Supply Exception Event, 10, 24

R

release notes, 28

Resource Exception Event, 10, 24

S

setup, 14

setup.bat, 15

T

Temperature Exception Event, 10, 24

tracing

ECS circuit, 31

troubleshooting

checklist, 28

U

Unclassified Event, 10, 24

V

verifying

ECS circuit, 30

Event Classified Correlator loaded, 19

NNM installed, 13

NNM services, 29

X

xnmtrap, 19
