Hewlett Packard
Enterprise

# HPE Security ArcSight Connectors

## SmartConnector for EMC VNXe Series Storage Systems

## Configuration Guide

November 30, 2016

**Configuration Guide**

**SmartConnector for EMC VNXe Series Storage Systems**

November 30, 2016



**Warranty**



**Restricted Rights Legend**



## Revision History

| Date | Description |
|---|---|
| 11/30/2016 | Updated installation procedure for setting preferred IP address mode and for downloading Microsoft Visual C++ Redistributable. |
| 09/30/2013 | Formerly "SmartConnector for EMC Celerra Event Publishing Agent", renamed "SmartConnector for EMC VNXe Series Storage Systems". Added VNXe Storage Systems V7.1 support. |
| 05/15/2012 | Added new installation procedure. |
| 09/24/2010 | General availability of this connector. Updated Windows versions supported. |
| 06/25/2010 | First edition of this Configuration Guide. |

# Contents

# SmartConnector for EMC VNXe Series Storage Systems

This guide provides information for installing the SmartConnector for EMC VNXe Series Storage Systems with support for the EMC Celerra Event Publishing Agent. It also describes configuring the device for event collection. This connector is supported for installation on the following Windows platforms: Windows Vista, Windows 2000 Professional, Windows 2003 Server, Windows Server 2008. EMC Celerra Network Server Version 5.6 using Celerra Event Enabler (events related to CIFS servers) and EMC VNXe Series Storage Systems v7.1 are supported.

## Product Overview

Celerra Gateway platforms extend the value of existing EMC storage array technologies, delivery a comprehensive, consolidated storage solution that adds IP storage (NAS and ISCSI) in a centrally managed information storage system, letting you dynamically grow, share, and manage file systems with multi-protocol file access.

The EMC VNXe Series Storage Systems is a mechanism whereby applications can register to receive event notification and context from Celerra. The EMC VNXe Series Storage Systems delivers to the application both event notification and associated context in one message. Context may consist of file metadata or directory metadata needed to decide business policy.

## Configuration

For complete information about installing, using, and managing EMC Celerra Event Publishing Agent (CEPA) or EMC VNXe Series Storage Systems, see the following EMC  Technical Manuals, from which the information in this section has been derived:

- *Using VNX™ Event Enabler*, P/N 300-011-824
- *Using EMC Celerra Event Publishing Agent*, P/N 300-006-003
- *Using Celerra Event Enabler*, P/N 300-006-002

## Install the VNX or Celerra Event Enabler

Before beginning, synchronize the date/time stamps on VNX file systems and domain servers by running the following command:

```
server_date server_# -timesvc start ntp <domain controller ip>
```

Have the following information available to install the VNX Event Enabler:

- Account name and password of the user account with local administrator privileges to set up a CEPA account on domain server where VEE will be installed.
- IP address of the Windows Server available where VEE will be installed.
- Domain name and IP address of the Windows domain server.
- IP address of the CIFS server configured for use with the Windows domain server

- File systems names of the VNX file systems

**To install the VEE or CEE software:**

**1** Log in to the domain as an administrator.

**2** If the Windows server where you want to install the VNX Event Enabler (VEE) or Celerra Event Enabler (CEE) software already has CAVA software earlier than version 5.6 installed, it must be uninstalled before installing the Celerra Event Enabler software:

**A** From the Windows taskbar, click **Start** and select **Settings -> Control Panel**.

**B** Double-click **Add or Remove Programs**.

**C** Select **EMC CAVA** from the list.

**D** Click **Change/Remove**. The CAVA software (for the CEE) or antivirus agent software (for VEE) will be removed from the Windows server.

**3** Insert the CEE or VEE software distribution CD into the CD drive of the Windows server where you want to install the CEE or VEE software. If Windows Autorun is enabled and the InstallShield Wizard window is displayed, skip to step 8; otherwise, continue with step 4.

**4** From the Windows taskbar, click **Start** and select **Run**; the **Run** dialog box is displayed.

**5** From the **Run** dialog box:

**A** Click **Browse** to locate the EMC_VEE_Pack or EMC_CEE_Pack executable file on the CD.

**B** Select the **EMC_VEE_Pack** or **EMC_CEE_Pack** executable file for the 32-bit (_Win32) version of the software for CEE or the 32-bit (_Win32) or the 64-bit (_x64) version of the software for VEE.

**C** Click **OK** to start the InstallShield Wizard. The **Welcome** window is displayed. If you have the most current version of InstallShield, the License Agreement window is displayed; skip to step 8. If you do not have the most current version of InstallShield, you are prompted to install it. Continue with step 6.

**6** Click **Next**. The **Location to Save Files** window is displayed.

**7** Click **Next**.

Do not change the location of the temporary directory. The Extracting Files process runs and returns to the **Welcome to the InstallShield Wizard** window.

**8** Click **Next**. The **License Agreement** window is displayed. Click **I accept the terms in the license agreement**, and click **Next**.

**9** On the **Customer Information** window displayed, type a username and organization and click **Next**.

**10** On the **Setup Type** window displayed, select **Complete** and then click **Next**. The **Symantec SAV for NAS** window displays.

11 If you are using Symantec antivirus software, select **Work with Symantec SAV for NAS** and the option for the SAV version you are using; otherwise, click **Next**. The **Ready to Install the Program** window displays.

12 Click **Install**. After the program is installed, the **InstallShield Wizard Completed** window is displayed.

13 Click **Finish**. The **Event Enabler Installer Information** window displays and prompts you to restart the server.

14 Click **No**. You will restart the computer during the next procedure. Continue with "Complete the VEE or CEE installation for Windows Server."

## Complete the VEE or CEE Installation for Windows Server

1 From the Windows taskbar, click **Start -> Settings -> Control Panel -> Administrative Tools -> Services**.

2 Double-click **EMC CAVA** in the **Service** list. The **EMC CAVA Properties** window is displayed.

3 From the **EMC CAVA Properties** window, click **Log On**.

4 Select **This account** and click **Browse**. The **Select User** window is displayed.

5 Click **Locations**. The **Locations** window is displayed.

6 Navigate to the domain where the account for the administrative user who has rights to set up a CEPA server account exists, select the domain location, and click **OK**. The **Select User** window now contains the location.

7 Click **Advanced**.

8 Click **Find Now**.

9 Select the user account that was created to manage CEPA services from the list and click **OK**.

10 For this user account, enter the account's password in both the **Password** and **Confirm password** fields.

11 Click **OK**; the following message is displayed:

```
The new logon name will not take effect until you stop and restart the
service.
```

12 Click **OK**.

13 Restart the computer.

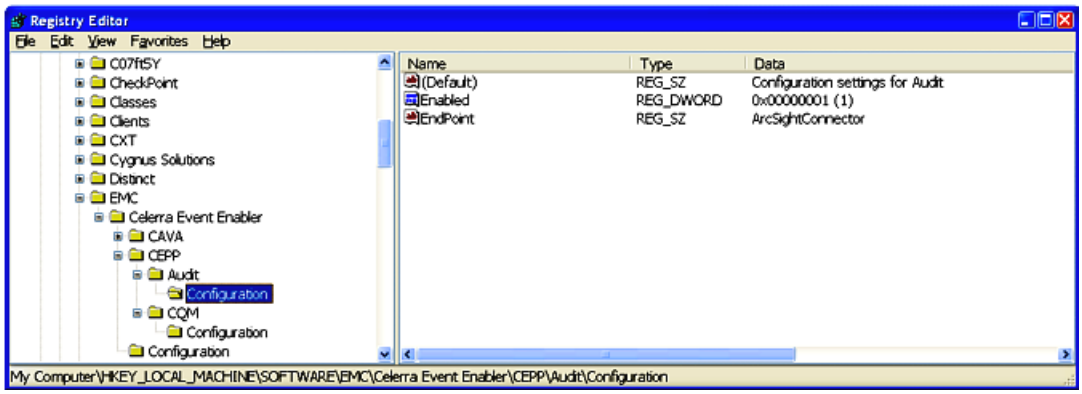
## Set Up Consumer Application Access

The connector includes a CEPP Server that works as the third party application. The connector should reside on the same local Windows computer where the Celerra Event Enabler is installed.

To set up consumer application access:

1 Open a command window on the Windows server where the consumer application is installed and enter `regedit`. The Windows Registry Editor window is displayed.

2 Navigate to **HKEY_LOCAL_MACHINE -> SOFTWARE -> EMC -> Celerra Event Enabler -> CEPP -> Audit -> Configuration**.



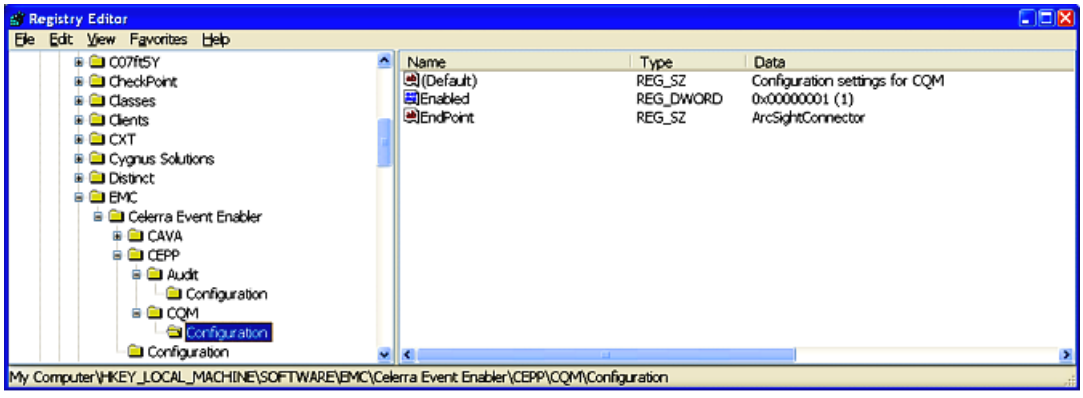

3 Double-click **EndPoint**.

4 If the SmartConnector is installed on the local computer, enter `ArcSightConnector`. If the SmartConnector is installed on a remote computer, enter `ArcSightConnector@<IPaddr>`, where <IPaddr> represents the IP addresses of the remote computers where the SmartConnector is installed. When setting multiple remote computers, use a ; (semicolon) to separate the IP addresses.

5 Double-click **Enable**.

6 Enter either **0** to disable or **1** to enable the EMC VNXe Series Storage Systems function that supports the consumer application being used.

7 Navigate to **HKEY_LOCAL_MACHINE -> SOFTWARE -> EMC -> Celerra Event Enabler -> CEPP -> CQM -> Configuration**.




8 Double-click **EndPoint**.

9 If the SmartConnector is installed on the local computer, enter `ArcSightConnector`. If the SmartConnector is installed on a remote computer, enter `ArcSightConnector@<IPaddr>`, where <IPaddr> represents the IP addresses of the remote computers where the SmartConnector is installed. When setting multiple remote computers, use a ; (semicolon) to separate the IP addresses.

10 Double-click **Enable**.

11 Enter either **0** to disable or **1** to enable the CEPA functionality that supports the consumer application being used.

12 Restart the computer.

Any time you modify the VEE or CEE section of the Registry, except for Verbose and Debug, the EMC CAVA service must be restarted.

See *Using EMC VNXe Series Storage Systems* for information about how to use the EMC VNXe Series Storage Systems. See *Using EMC Celerra AntiVirus Agent* for information about how to use CAVA.

## Configure the Event Publishing Agent

The `cepp.conf` file must be defined with the correct syntax to ensure that the EMC CAVA service starts on the Data Mover. To create the `cepp.conf` file:

1 Log into the system with your administrative username and password:

```
login: <username>
password: <password>
```

where <username> is the username defined for the administrative account (default is **nasadmin**) and <password> is the password defined for the administrative account (default is **nasadmin**).

2 Use a text editor to create a new, blank file in the home directory.

3 Add the CEPA information necessary for your system. This can be on one line or on separate lines by using a space and "\" at the end of each line except for the last line and the lines that contain global options (`cifsserver`, `surveytime`, `ft`, and `msrpcuser`). For example:

```
cifsservers=<cifsserver>
surveytime=<surveytime>
ft level = [0|1|2|3]  {location=<location>} {size=<size>}
msrpcuser=<msrpcuser>
pool name=<poolname> \
servers=<IP_addr1>|<IP_addr2>| ... \
preevents=<event1>|<event2>| ... \
postevents=<event3>|<event4>| ... \
posterrevents=<event5>|<event6>| ... \
option=ignore or denied \
reqtimeout=<reqtimeout> \
retrytimeout=<retrytimeout>
```

where:

<cifsserver> is the name of the CIFS server used by event publishing agent to access the files in the Celerra Network Server. If you do not include this option, the default CIFS server will be used. If you include this option, the server specified must be a physical Data Mover, not a Virtual Data Mover, in order for the EMC CAVA service to start on the Data Mover.

The use of link-local network addresses for defining CEPA servers is not supported.

<surveytime> is the time to scan each EMC VNXe Series Storage Systems server. The default is 60 seconds and the range is 5 seconds through 120 seconds.

The global ft option has three parts:

- <level> is the fault tolerance level assigned. This option is required. 0 = continue and tolerate lost events (the default); 1 = continue and use a persistence file as a circular event buffer for lost events; 2 = continue and use a persistence file as a circular event buffer for lost events until the buffer is filled and then stop CIFS; 3 = upon heartbeat loss of connectivity, stop CIFS.

- <location> is the directory where the persistence buffer file resides relative to the root of a file system. If a location is not specified, the default location is the root of the file system.

File system that contains the persistence buffer file must have amount of free space available equal to the maximum size of the persistence buffer file. For example, if the persistence buffer file size is 100 MB, the file system must contain at least 100 MB of free space for the temporary file operations.

- <size> is the maximum size in MB of the persistence buffer file. The default is 1 MB and the range is 1 MB to 100 MB.

<msrpcuser> is the name assigned to the user account that the EMC CAVA service is running under on the VEE or CEE machine. For example, if the EMC CAVA service is running under a user called **ceeuser**, the cepp.conf file entry would be **msrpcuser=ceeuser**. If ceeuser is a member of a domain, the entry would be **msrpcuser=domain.ceeuser**.

<poolname> is the name assigned to the set of Windows servers where the VEE or CEE software is installed. The specified Data Mover will use the set of servers to perform round-robin load sharing of events. One pool name must be specified.

<IP_addrx> are the IP addresses of the Windows servers where the VEE or CEE software is installed, or a fully qualified domain name (FQDN). At least one Windows server must be specified. Use the vertical bar (|) or a colon (:) when listing multiple addresses. Note that, if you use a FQDN and the Data Mover cannot retrieve the IP address for it, add the FQDN to the /.etc/hosts list in the Data Mover.

IPv6 addresses should be enclosed in square brackets to separate them from the colon delimiter that is used between multiple addresses.

<event*x*> are events for which notifications are to be received. At least one error option line (pre, post, or posterr) from the following options must be defined.

```
* (all events), blank (no events), OpenFileNoAccess, OpenFileRead,
OpenFileWrite, OpenDir, FileRead, FileWrite, CreateFile, CreateDir,
```

```
DeleteFile, DeleteDir, CloseModified, CloseUnmodified, CloseDir,
RenameFile, RenameDir, SetAclFile, SetAclDir, SetSecFile, SetSecDir
```

Use the vertical bar (|) when listing multiple events.

`ignore =` if the CEPA server is not available, ignore, and return no error to the caller.

`denied =` if the CEPA server is not available, return access denied to the caller. The caller will lose read/write access to the CIFS Share.

`<reqtimeout>` is the timeout in ms to send a request that allows access to the CEPA server. Wait to receive the response from the CEPA server. The default is 1,000 ms and the range is 500 ms through 5,000 ms.

`<retrytimeout>` is the timeout in ms to retry the access request sent to the CEPA server. This value must be less than or equal to the `reqtimeout` value. The default is 250 ms and the range is 50 ms through 5,000 ms.

4 Save the file with the name **cepp.conf** and then close the text editor.

5 Move the cepp.conf file to the Data Mover's root file system:

```
$ server_file <movername> -put cepp.conf cepp.conf
```

where `<movername>` is the name of the Data Mover. Note that each Data Mover than runs CEPA must have a cepp.conf file, but each configuration file can specify different events.

6 Before starting CEPA for the first time, the administrator must issue the following command from the Control Station:

```
/nas/sbin/server_user server_2 -add -md5 -passwd <msrpcuser>
```

where `<msrpcuser>` is the name assigned to either a simple user account or user account that is part of a domain under which the EMC CAVA service is running on the VEE or CEE machine; for example, ceeuser or CEE1.ceeuser.

## Managing the Event Publishing Agent

The tasks to manage the event publishing agent include editing the cepp.conf file, assigning rights in Windows Server 2003 and Windows 2000, starting and stopping the CEPA facility, verifying the CEPA status, and displaying the CEPA facility properties, statistics, and detailed information for a CEPA pool. Before issuing commands, log in as a domain user, not a local user.

### Edit the cepp.conf File

1 Copy the current configuration file from the Data Mover, substituting `<movername>` with the name of the Data Mover where the configuration file resides.

```
$ server_file <movername> -get cepp.conf cepp.conf
```

2 Edit the cepp.conf file as necessary.

3 Reload the file to the Data Mover, substituting <movername> with the name of the Data Mover where the configuration file resides.

```
$ server_file <movername> -put cepp.conf cepp.conf
```

## Start the CEPA Facility

To start the CEPA facility, use this command syntax, substituting the name of the Data Mover for <movername>:

```
$ server_cepp <movername> -service -start
```

For example, to start the CEPA facility on the Data Mover server_2, enter:

```
$ server_cepp server_2 -service -start
```

## Verify the CEPA Status

To verify the CEPA facility status, use this command syntax, substituting the name of the Data Mover for <movername>:

```
$ server_cepp <movername> -service -status
```

For example, to verify the CEPA facility status on the Data Mover server_2, enter:

```
$ server_cepp server_2 -service -status
```

## Stop the CEPA Facility

To stop the CEPA facility, use this command syntax, substituting the name of the Data Mover for <movername>:

```
$ server_cepp <movername> -service -stop
```

For example, to stop the EMC VNXe Series Storage Systems facility on the Data Mover server_2, enter:

```
$ server_cepp server_2 -service -stop
```

## Display the CEPA Facility Properties

To display information about the CEPA service, use this command syntax, substituting the name of the Data Mover for <movername>:

```
$ server_cepp <movername> -service -info
```

For example, to display CEPA service on the Data Mover server_2, enter:

```
$ server_cepp server_2 -service -info
```

# Install the SmartConnector

The following sections provide instructions for installing and configuring your selected SmartConnector.

## Download Microsoft Visual C++ Redistributable

The Microsoft C Run-time Library (CRT) distributed with the Microsoft Visual C++ Redistributable for Visual Studio 2012 Update 4 is required to run this connector.

You can download this package from the Microsoft website:

http://www.microsoft.com/en-us/download/details.aspx?id=30679#.

Download and install the x86 edition for 32-bit platforms (VSU_4\vcredist_x86.exe).

## Prepare to Install Connector

Before you install any SmartConnectors, make sure that the ArcSight products with which the connectors will communicate have already been installed correctly (such as ArcSight ESM or ArcSight Logger). This configuration guide takes you through the installation process with **ArcSight Manager (encrypted)** as the destination.

For complete product information, read the *Administrator's Guide* as well as the *Installation and Configuration* guide for your ArcSight product before installing a new SmartConnector. If you are adding a connector to the ArcSight Management Center, see the *ArcSight Management Center Administrator's Guide* for instructions, and start the installation procedure at "Set Global Parameters (optional)" or "Select Connector and Add Parameter Information."

Before installing the SmartConnector, be sure the following are available:

- Local access to the machine where the SmartConnector is to be installed
- Administrator passwords

## Install Core Software

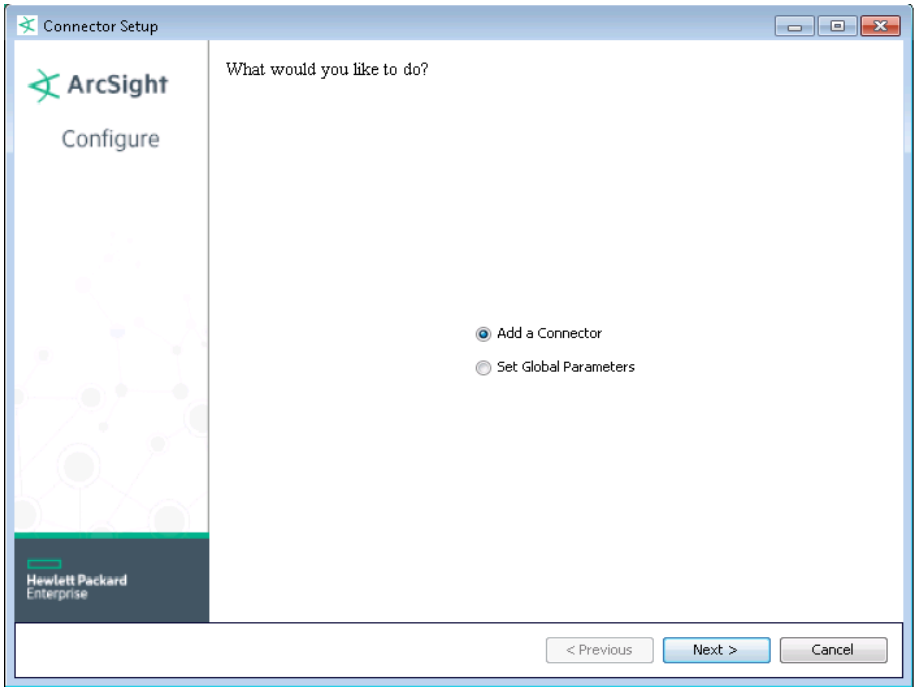
Unless specified otherwise at the beginning of this guide, this SmartConnector can be installed on all ArcSight supported platforms; for the complete list, see the *SmartConnector Product and Platform Support* document, available from the HPE SSO and Protect 724 sites.

1. Download the SmartConnector executable for your operating system from the HPE SSO site.
2. Start the SmartConnector installation and configuration wizard by running the executable.

   Follow the wizard through the following folder selection tasks and installation of the core connector software:

   Introduction
   Choose Install Folder
   Choose Shortcut Folder
   Pre-Installation Summary
   Installing...

3 When the installation of SmartConnector core component software is finished, the following window is displayed:




## Set Global Parameters (optional)

If you choose to perform any of the operations shown in the following table, do so before adding your connector. After installing core software, you can set the following parameters:

| Global Parameter | Setting |
|---|---|
| Set FIPS mode | Set to 'Enable' to enable FIPS compliant mode. To enable FIPS Suite B Mode, see the SmartConnector User Guide under "Modifying Connector Parameters" for instructions. Initially, this value is set to 'Disable'. |
| Set Remote Management | Set to 'Enable' to enable remote management from ArcSight Management Center. When queried by the remote management device, the values you specify here for enabling remote management and the port number will be used. Initially, this value is set to 'Disable'. |
| Remote management listener port | The remote management device will listen to the port specified in this field. The default port number is 9001. |
| Preferred IP Version | If both IPv4 and IPv6 IP addresses are available for the local host (the machine on which the connector is installed), you can choose which version is preferred. Otherwise, you will see only one selection. When both values are present, the initial setting is IPv4. |

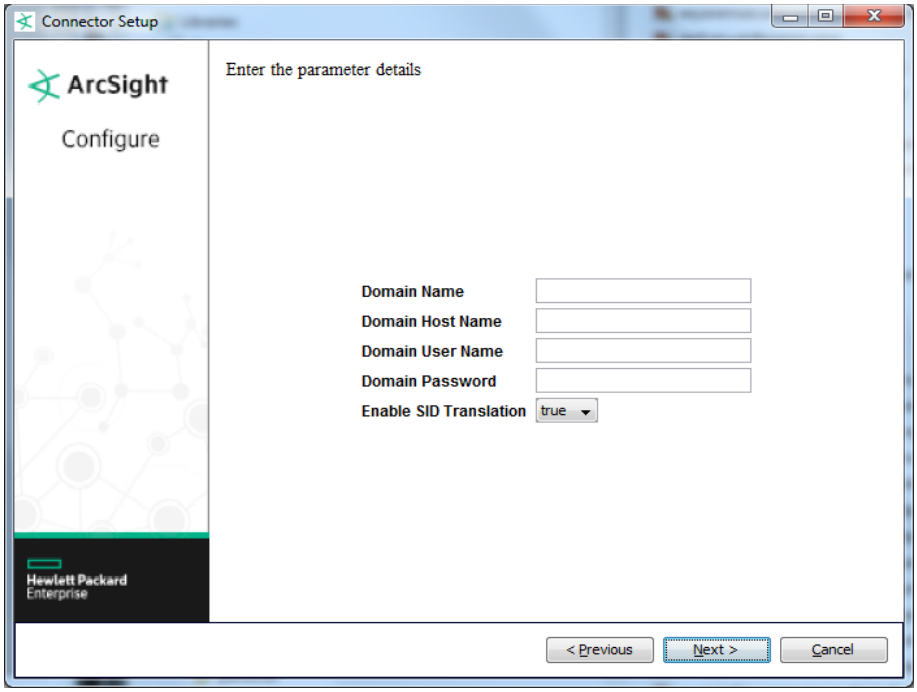
After making your selections, click **Next**. A summary screen is displayed. Review the summary of your selections and click **Next**. Click **Continue** to return to the "Add a Connector" window. Continue the installation procedure with "Select Connector and Add Parameter Information."

## Select Connector and Add Parameter Information

1 Select **Add a Connector** and click **Next**. If applicable, you can enable FIPS mode and enable remote management later in the wizard after SmartConnector configuration.

2 Select **EMC VNXe Series Storage Systems** and click **Next**.

3 Enter the required SmartConnector parameters to configure the SmartConnector, then click **Next**.




| Parameter | Description |
|---|---|
| Domain Name | Enter the name of the domain. |
| Domain Host Name | Enter the Domain Controller's IP address. If not entering the name of the domain host controller, a host (IP address) under the same domain can be used. |
| Domain User Name | Enter a Domain Controller user name with admin privileges to collect events from the target host. |
| Domain Password | Enter the password for the Domain Controller user. |
| Enable SID Translation | The connector can perform SID translation and is configured to translate SIDs by default. Select 'false' if you do not want SID translation enabled. |

## Select a Destination

1 The next window asks for the destination type; make sure **ArcSight Manager (encrypted)** is selected and click **Next**. (For information about this destination or any of the other destinations listed, see the *ArcSight SmartConnector User Guide*.)

2 Enter values for the **Manager Host Name**, **Manager Port**, **User** and **Password** required parameters. This is the same ArcSight user name and password you created during the ArcSight Manager installation. Click **Next**.

3 Enter a name for the SmartConnector and provide other information identifying the connector's use in your environment. Click **Next**. The connector starts the registration process.

4 The certificate import window for the ArcSight Manager is displayed. Select **Import the certificate to the connector from destination** and click **Next**. (If you select **Do not import the certificate to connector from destination**, the connector installation will end.) The certificate is imported and the **Add connector Summary** window is displayed.

## Complete Installation and Configuration

1 Review the **Add Connector Summary** and click **Next**. If the summary is incorrect, click **Previous** to make changes.

2 The wizard now prompts you to choose whether you want to run the SmartConnector as a stand-alone process or as a service. If you choose to run the connector as a stand-alone process, select **Leave as a standalone application**, click **Next**, and continue with step 5.

3 If you chose to run the connector as a service, with **Install as a service** selected, click **Next**. The wizard prompts you to define service parameters. Enter values for **Service Internal Name** and **Service Display Name** and select **Yes** or **No** for **Start the service automatically**. The **Install Service Summary** window is displayed when you click **Next**.

4 Click **Next** on the summary window.

5 To complete the installation, choose **Exit** and Click **Next**.

For some SmartConnectors, a system restart is required before the configuration settings you made take effect. If a **System Restart** window is displayed, read the information and initiate the system restart operation.

Save any work on your computer or desktop and shut down any other running applications (including the ArcSight Console, if it is running), then shut down the system.

For instructions about upgrading the connector or modifying parameters, see the *SmartConnector User Guide*.

# Run the SmartConnector

SmartConnectors can be installed and run in stand-alone mode, on Windows platforms as a Windows service, or on UNIX platforms as a UNIX daemon, depending upon the platform supported. On Windows platforms, SmartConnectors also can be run using shortcuts and optional Start menu entries.

If the connector is installed in stand-alone mode, it must be started manually and is not automatically active when a host is restarted. If installed as a service or daemon, the connector runs automatically when the host is restarted. For information about connectors running as services or daemons, see the *ArcSight SmartConnector User Guide*.

To run all SmartConnectors installed in stand-alone mode on a particular host, open a command window, go to `$ARCSIGHT_HOME\current\bin` and run: `arcsight connectors`

To view the SmartConnector log, read the file `$ARCSIGHT_HOME\current\logs\agent.log`; to stop all SmartConnectors, enter `Ctrl+C` in the command window.

# Device Event Mapping to ArcSight Fields

The following section lists the mappings of ArcSight data fields to the device's specific event definitions. See the *ArcSight Console User's Guide* for more information about the ArcSight data fields.

## Mappings to ArcSight ESM Fields

| ArcSight ESM Field | Device-Specific Field |
|---|---|
| Application Protocol | protocol |
| Destination Address | serverIp |
| Destination User Name | ownerSid or the user name from translating ownerSid |
| Device Custom String 1 | userSid |
| Device Custom String 2 | share |
| Device Custom String 3 | flag (0x0=CEPP_FLAG_NONE, 0x1=CEPP_FLAG_PREEVENT, 0x2=CEPP_FLAG_POSTEVENT_SUCCESS, 0x4=CEPP_FLAG_POSTEVENT_FAILURE) |
| Device Custom String 4 | ntStatus |
| Device Custom String 5 | desiredAccess |
| Device Custom String 6 | relativePath or the decoded encodedRelativePath |
| Device Event Class ID | event |
| Device Host Name | server |
| Device Product | 'Celerra' |
| Device Receipt Time | timestamp |
| Device Vendor | 'EMC' |
| File Path | path or the decoded encodePath |
| File Size | fileSize |
| Message | createDispo |
| Name | 0x0=EVENT_UNKNOWN, 0x1=EVENT_FILE_OPEN_NOACCESS, 0x2=EVENT_FILE_OPEN_READ, 0x4=EVENT_FILE_OPEN_WRITE, 0x8=EVENT_FILE_CREATE, 0x10=EVENT_FILE_RENAME, 0x20=EVENT_FILE_DELETE, 0x40=EVENT_FILE_CLOSE, 0x80=EVENT_FILE_CLOSE_MODIFIED, 0x100=EVENT_FILE_SET_ACL, 0x200=EVENT_FILE_READ, 0x400=EVENT_FILE_WRITE, 0x800=EVENT_FILE_SET_SEC, 0x10000=EVENT_DIR_CREATE, 0x20000=EVENT_DIR_RENAME, 0x40000=EVENT_DIR_DELETE, 0x80000=EVENT_DIR_SET_ACL, 0x100000=EVENT_DIR_OPEN, 0x200000=EVENT_DIR_CLOSE, 0x400000=EVENT_DIR_SET_SEC, 0x80000000=EVENT_ADMIN_RESYNC |
| Source Address | clientIp |
| Source User Name | userSid or the user name from translating userSid |

# Troubleshooting

**Why is the connector not receiving any events?**

From the Celerra Network Server side, execute the `server_cepp server_2 -pool -info` command. Ensure the server state is **ONLINE** for the connector to receive events. See the detail that follows.

```
[nasadmin@n103-h194 ~]$ server_cepp server_2 -service -start
server_2 : done
[nasadmin@n103-h194 ~]$ server_cepp server_2 -pool -info
server_2 :
pool_name  = cepapool
server_required = No
access_checks_ignored = 0
req_timeout = 1000ms
retry_timeout = 250ms
pre_events =
post_events =
OpenFileNoAccess,OpenFileRead,OpenFileWrite,CreateFile,CreateDir,DeleteFi
le,DeleteDir,CloseModified,CloseUnmodified,RenameFile,RenameDir,SetAclFil
e,SetAclDir,OpenDir,CloseDir
post_err_events =
OpenFileNoAccess,OpenFileRead,OpenFileWrite,CreateFile,CreateDir,DeleteFi
le,DeleteDir,CloseModified,CloseUnmodified,RenameFile,RenameDir,SetAclFil
e,SetAclDir,OpenDir,CloseDir
CEPP Servers: IP = 10.0.100.213, state = ONLINE, rpc = ONC-RPC version 4,
cava version = 4.6.5, nt status = SUCCESS, server name = 10.0.100.213
[nasadmin@n103-h194 ~]$
```

If the state is **OFFLINE**:

- Verify that the network is available and that the EMC VNXe Series Storage Systems facility is running on the Celerra Event Enabler (CEE) server.
- Verify that pool members are configured. Run the server_cepp [mover_name] -pool -info command to display configuration for the pool.
- Verify that the CEE Framework service is running using the Windows Services Control Manager.
- Verify the network integrity between the Data Mover and the EMC VNXe Series Storage Systems server.

If the state is **ONLINE**, everything is ready.

If the state is **ERROR_CEPP_INTERFACE**, verify that the vendor's application is running and communicating with the EMC VNXe Series Storage Systems facility.

If the state is **ERROR_CEPP_NOT_FOUND**, ensure that the EMC VNXe Series Storage Systems facility has registered with the specified vendor software. Verify that a consumer application is registered and running.

- Run the `server_cepp [movername] -service -info` command to display CEPP properties and the list of configured pools.
- Run the `server_cepp [movername] -pool -info` command to display the pool configuration.

- View the Windows Event Log for any errors.
- Verify the Registry to ensure the ENDPOINT has been specified correctly for the third party vendor. Registration cannot happen until you have specified the correct ENDPOINT.

**What do I do if the connector fails to start the binary ceppserver.exe on the connector machine?**

If you receive the following errors, download vcredist_x86.exe and install Visual C++ Redistributable Package, which must be executed on the target system as a prerequisite to installation of the application.

- This application has failed to start because the application configuration is incorrect. Reinstalling application may fix this problem.
- The system cannot execute the specified program.

This package installs and registers all Visual C++ libraries:

http://www.microsoft.com/en-us/download/details.aspx?id=30679#