



# HP Enterprise

## Cloud Insights

NetApp  
December 19, 2022

# Table of Contents

- HP Enterprise ..... 1
  - HP Enterprise Alletra 9000 / Primera Storage data collector ..... 1
  - HP Enterprise Command View data collector ..... 3
  - HPE Alletra 6000 data collector ..... 7

# HP Enterprise

## HP Enterprise Alletra 9000 / Primera Storage data collector

Cloud Insights uses the HP Enterprise Alletra 9000 / HP Enterprise Primera (previously 3PAR) data collector to discover inventory and performance.

### Terminology

Cloud Insights acquires the following inventory information from this data collector. For each asset type acquired by Cloud Insights, the most common terminology used for this asset is shown. When viewing or troubleshooting this data collector, keep the following terminology in mind:

| Field                     | Description  |
|---------------------------|--------------|
| Physical Disk             | Disk         |
| Storage System            | Storage      |
| Controller Node           | Storage Node |
| Common Provisioning Group | Storage Pool |
| Virtual Volume            | Volume       |

Note: These are common terminology mappings only and might not represent every case for this data collector.

### Requirements

The following are required to configure this data collector:

- IP address or FQDN of the InServ cluster
- For inventory, read-only user name and password to the StoreServ Server
- For performance, read-write user name and password to the StoreServ Server
- Port requirements: 22 (inventory collection), 5988 or 5989 (performance collection) [Note: Performance is supported for StoreServ OS 3.x+]
- For performance collection confirm that SMI-S is enabled by logging into the array via SSH.

### Configuration

| Field              | Description  |
|--------------------|--|
| Storage IP address | Storage IP address or fully-qualified domain name of the StoreServ cluster |
| User Name          | User name for the StoreServ Server   |
| Password           | Password used for the StoreServ Server                                     |
| SMI-S User Name    | User name for the SMI-S Provider Host                                      |
| SMI-S Password     | Password used for the SMI-S Provider Host                                  |

## Advanced configuration

| Field                           | Description  |
|---------------------------------|--|
| Inventory Poll Interval (min)   | Interval between inventory polls. The default is 40 minutes.                                       |
| SMI-S Connectivity              | Protocol used to connect to the SMI-S provider   |
| Override SMI-S Default Port     | If blank, use the default port from SMI-S Connectivity, otherwise enter the connection port to use |
| Performance Poll Interval (sec) | Interval between performance polls. The default is 300 seconds.                                    |

## Troubleshooting

Some things to try if you encounter problems with this data collector:

### Inventory

| Problem:                                     | Try this:  |
|--|--|
| "showsys" command doesn't return any result. | Run "showsys" and "showversion -a" from the command line and check if the version is supported by the array. |

### Performance

| Problem:   | Try this:  |
|--|--|
| Failed to connect or login. Provider initialization failed.          | An all-numeric array name can cause problems with SMI-S server. Try changing the array name.   |
| SMI-S user configured does not have any domain                       | Grant appropriate domain privileges to the configured SMI-S user   |
| Cloud Insights states that it cannot connect/login to SMI-S service. | <p>Confirm there is no firewall between the CI AU and the array that would block the CI AU from making TCP connections to 5988 or 5989.</p> <p>Once that is done, and if you have confirmed there is no firewall, you should SSH to the array, and use the "showcim" command to confirm.</p> <p>Verify that:</p> <ul style="list-style-type: none"><li>* Service is enabled</li><li>* HTTPS is enabled</li><li>* HTTPS port should be 5989</li></ul> <p>If those all are so, you can try to "stopcim" and then a "startcim" to restart the CIM (i.e. SMI-S service).</p> |

Additional information may be found from the [Support](#) page or in the [Data Collector Support Matrix](#).

# HP Enterprise Command View data collector

The HP Enterprise Command View Advanced Edition data collector supports discovering XP and P9500 arrays via Command View Advanced Edition (CVAE) server. Cloud Insights communicates with CVAE using the standard Command View API to collect inventory and performance data.

## Terminology

Cloud Insights acquires the following inventory information from the HP Enterprise Command View data collector. For each asset type acquired by Cloud Insights, the most common terminology used for this asset is shown. When viewing or troubleshooting this data collector, keep the following terminology in mind:

| Vendor/Model Term    | Cloud Insights Term |
|----------------------|---------------------|
| PDEV                 | Disk                |
| Journal Pool         | Disk Group          |
| Storage Array        | Storage             |
| Port Controller      | Storage Node        |
| Array Group, DP Pool | Storage Pool        |
| Logical Unit, LDEV   | Volume              |

Note: These are common terminology mappings only and might not represent every case for this data collector.

## Inventory requirements

You must have the following in order to collect inventory data:

- IP address of the CVAE server
- Read-only user name and password for the CVAE software and peer privileges
- Port requirement: 2001

## Performance requirements

The following requirements must be met in order to collect performance data:

- HDS USP, USP V, and VSP performance
  - Performance Monitor must be licensed.
  - Monitoring switch must be enabled.
  - The Export Tool (Export.exe) must be copied to the Cloud Insights AU and extracted to a location. On CI Linux AUs, ensure "cisys" has read and execute permissions.
  - The Export Tool version must match the microcode version of the target array.
- AMS performance:
  - Performance Monitor must be licensed.

- The Storage Navigator Modular 2 (SNM2) CLI utility be installed on the Cloud Insights AU.
- Network requirements
  - The Export Tools are Java based, and use RMI to speak to the array. These tools may not be firewall-friendly as they may dynamically negotiate source and destination TCP ports on each invocation. Also, different model array's Export Tools may behave differently across the network - consult HPE for your model's requirements

## Configuration

| Field   | Description  |
|---|--|
| Command View Server   | IP address or fully-qualified domain name of the Command View server   |
| User Name   | User name for the Command View server.   |
| Password  | Password used for the Command View server.   |
| Devices - VSP G1000 (R800), VSP (R700), HUS VM (HM700) and USP storages | Device list for VSP G1000 (R800), VSP (R700), HUS VM (HM700) and USP storages. Each storage requires: <ul style="list-style-type: none"> <li>* Array's IP: IP address of the storage</li> <li>* User Name: User name for the storage</li> <li>* Password: Password for the storage</li> <li>* Folder Containing Export Utility JAR Files</li> </ul>  |
| SNM2Devices - WMS/SMS/AMS Storages                                      | Device list for WMS/SMS/AMS storages. Each storage requires: <ul style="list-style-type: none"> <li>* Array's IP: IP address of the storage</li> <li>* Storage Navigator CLI Path: SNM2 CLI path</li> <li>* Account Authentication Valid: Select to choose valid account authentication</li> <li>* User Name: User name for the storage</li> <li>* Password: Password for the storage</li> </ul> |
| Choose Tuning Manager for Performance                                   | Override other performance options   |
| Tuning Manager Host   | IP address or fully-qualified domain name of tuning manager  |
| Tuning Manager Port   | Port used for Tuning Manager   |
| Tuning Manager Username   | User name for Tuning Manager   |
| Tuning Manager Password   | Password for Tuning Manager  |

Note: In HDS USP, USP V, and VSP, any disk can belong to more than one array group.

## Advanced configuration

| Field                    | Description                           |
|--------------------------|---------------------------------------|
| Command View Server Port | Port used for the Command View Server |
| HTTPs Enabled            | Select to enable HTTPs                |

|   |  |
|---|--|
| Inventory Poll Interval (min)                   | Interval between inventory polls. The default is 40.                             |
| Choose 'Exclude' or 'Include' to specify a list | Specify whether to include or exclude the array list below when collecting data. |
| Exclude or Include Devices                      | Comma-separated list of device ID's or array names to include or exclude         |
| Query Host Manager                              | Select to query host manager   |
| Performance Polling Interval (sec)              | Interval between performance polls. The default is 300.                          |

## Troubleshooting

Some things to try if you encounter problems with this data collector:

### Inventory

| Problem:   | Try this:  |
|--|--|
| Error: User does not have enough permission  | Use a different user account that has more privilege or increase the privilege of user account configured in the data collector  |
| Error: Storages list is empty. Either devices are not configured or the user does not have enough permission | <ul style="list-style-type: none"> <li>* Use DeviceManager to check if the devices are configured.</li> <li>* Use a different user account that has more privilege, or increase the privilege of the user account</li> </ul> |
| Error: HDS storage array was not refreshed for some days   | Investigate why this array is not being refreshed in HP CommandView AE.  |

### Performance

| Problem:   | Try this:   |
|--|---|
| Error:<br>* Error executing export utility<br>* Error executing external command | <ul style="list-style-type: none"> <li>* Confirm that Export Utility is installed on the Cloud Insights Acquisition Unit</li> <li>* Confirm that Export Utility location is correct in the data collector configuration</li> <li>* Confirm that the IP of the USP/R600 array is correct in the configuration of the data collector</li> <li>* Confirm that the User name and password are correct in the configuration of the data collector</li> <li>* Confirm that Export Utility version is compatible with storage array micro code version</li> <li>* From the Cloud Insights Acquisition Unit, open a CMD prompt and do the following:               <ul style="list-style-type: none"> <li>- Change the directory to the configured installation directory</li> <li>- Try to make a connection with the configured storage array by executing batch file runWin.bat</li> </ul> </li> </ul> |

| <b>Problem:</b>  | <b>Try this:</b>  |
|--|---|
| Error: Export tool login failed for target IP  | <ul style="list-style-type: none"> <li>* Confirm that username/password is correct</li> <li>* Create a user ID mainly for this HDS data collector</li> <li>* Confirm that no other data collectors are configured to acquire this array</li> </ul>  |
| Error: Export tools logged "Unable to get time range for monitoring".  | <ul style="list-style-type: none"> <li>* Confirm performance monitoring is enabled on the array.</li> <li>* Try invoking the export tools outside of Cloud Insights to confirm the problem lies outside of Cloud Insights.</li> </ul>   |
| Error:<br>* Configuration error: Storage Array not supported by Export Utility<br>* Configuration error: Storage Array not supported by Storage Navigator Modular CLI              | <ul style="list-style-type: none"> <li>* Configure only supported storage arrays.</li> <li>* Use "Filter Device List" to exclude unsupported storage arrays.</li> </ul>   |
| Error:<br>* Error executing external command<br>* Configuration error: Storage Array not reported by Inventory<br>* Configuration error: export folder does not contains jar files | <ul style="list-style-type: none"> <li>* Check Export utility location.</li> <li>* Check if Storage Array in question is configured in Command View server</li> <li>* Set Performance poll interval as multiple of 60 seconds.</li> </ul>   |
| Error:<br>* Error Storage navigator CLI<br>* Error executing auperform command<br>* Error executing external command   | <ul style="list-style-type: none"> <li>* Confirm that Storage Navigator Modular CLI is installed on the Cloud Insights Acquisition Unit</li> <li>* Confirm that Storage Navigator Modular CLI location is correct in the data collector configuration</li> <li>* Confirm that the IP of the WMS/SMS/SMS array is correct in the configuration of the data collector</li> <li>* Confirm that Storage Navigator Modular CLI version is compatible with micro code version of storage array configured in the data collector</li> <li>* From the Cloud Insights Acquisition Unit, open a CMD prompt and do the following:               <ul style="list-style-type: none"> <li>- Change the directory to the configured installation directory</li> <li>- Try to make a connection with the configured storage array by executing following command "auunitref.exe"</li> </ul> </li> </ul> |
| Error: Configuration error: Storage Array not reported by Inventory  | Check if Storage Array in question is configured in Command View server   |



| Problem:   | Try this:   |
|--|---|
| Error:<br>* No Array is registered with the Storage Navigator Modular 2 CLI<br>* Array is not registered with the Storage Navigator Modular 2 CLI<br>* Configuration error: Storage Array not registered with StorageNavigator Modular CLI | * Open Command prompt and change directory to the configured path<br>* Run the command "set=STONAVM_HOME=."<br>* Run the command "auunitref"<br>* Confirm that the command output contains details of the array with IP<br>* If the output does not contain the array details then register the array with Storage Navigator CLI:<br>- Open Command prompt and change directory to the configured path<br>- Run the command "set=STONAVM_HOME=."<br>- Run command "auunitaddauto -ip \${ip}". Replace \${ip} with real IP |

Additional information may be found from the [Support](#) page or in the [Data Collector Support Matrix](#).

## HPE Alletra 6000 data collector

The HP Enterprise Alletra 6000 (previously Nimble) data collector supports inventory and performance data for Alletra 6000 storage arrays.

### Terminology

Cloud Insights acquires the following inventory information from this collector. For each asset type acquired by Cloud Insights, the most common terminology used for this asset is shown. When viewing or troubleshooting this data collector, keep the following terminology in mind:

| Vendor/Model Term       | Cloud Insights Term |
|-------------------------|---------------------|
| Array                   | Storage             |
| Disk                    | Disk                |
| Volume                  | Volume              |
| Pool                    | Storage Pool        |
| Initiator               | Storage Host Alias  |
| Controller              | Storage Node        |
| Fibre Channel Interface | Controller          |

Note: These are common terminology mappings only and might not represent every case for this data collector.

### Requirements

You must have the following in order to collect inventory and configuration data from the storage array:

- The array must be installed and configured, and reachable from the client through its fully qualified domain name (FQDN) or array management IP address.

- The array must be running NimbleOS 2.3.x or later.
- You must have a valid user name and password to the array with at least "Operator" level role. The "Guest" role does not have sufficient access to understand initiator configurations.
- Port 5392 must be open on the array.

You must have the following in order to collect performance data from the storage array:

- The array must be running NimbleOS 4.0.0 or later
- The array must have volumes configured. The only performance API NimbleOS has is for volumes, and any statistics Cloud Insights reports are derived from the statistics on volumes

## Configuration

| Field                       | Description  |
|-----------------------------|--|
| Array Management IP Address | Fully qualified domain name (FQDN) or array management IP address. |
| User Name                   | User name for the array  |
| Password                    | Password for the array   |

## Advanced configuration

| Field                         | Description  |
|-------------------------------|--|
| Port                          | Port used by Nimble REST API. The default is 5392.           |
| Inventory Poll Interval (min) | Interval between inventory polls. The default is 60 minutes. |

Note: The default performance poll interval is 300 seconds and can not be changed. This is the only interval supported by HPE Alletra 6000.

## Copyright information

Copyright © 2022 NetApp, Inc. All Rights Reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means—graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system—without prior written permission of the copyright owner.

Software derived from copyrighted NetApp material is subject to the following license and disclaimer:

THIS SOFTWARE IS PROVIDED BY NETAPP “AS IS” AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL NETAPP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

NetApp reserves the right to change any products described herein at any time, and without notice. NetApp assumes no responsibility or liability arising from the use of products described herein, except as expressly agreed to in writing by NetApp. The use or purchase of this product does not convey a license under any patent rights, trademark rights, or any other intellectual property rights of NetApp.

The product described in this manual may be protected by one or more U.S. patents, foreign patents, or pending applications.

LIMITED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (b)(3) of the Rights in Technical Data -Noncommercial Items at DFARS 252.227-7013 (FEB 2014) and FAR 52.227-19 (DEC 2007).

Data contained herein pertains to a commercial product and/or commercial service (as defined in FAR 2.101) and is proprietary to NetApp, Inc. All NetApp technical data and computer software provided under this Agreement is commercial in nature and developed solely at private expense. The U.S. Government has a non-exclusive, non-transferrable, nonsublicensable, worldwide, limited irrevocable license to use the Data only in connection with and in support of the U.S. Government contract under which the Data was delivered. Except as provided herein, the Data may not be used, disclosed, reproduced, modified, performed, or displayed without the prior written approval of NetApp, Inc. United States Government license rights for the Department of Defense are limited to those rights identified in DFARS clause 252.227-7015(b) (FEB 2014).

## Trademark information

NETAPP, the NETAPP logo, and the marks listed at <http://www.netapp.com/TM> are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.