



**IBM**

Cloud Insights

NetApp  
March 27, 2023

This PDF was generated from [https://docs.netapp.com/us-en/cloudinsights/task\\_dc\\_ibm\\_cleversafe.html](https://docs.netapp.com/us-en/cloudinsights/task_dc_ibm_cleversafe.html) on March 27, 2023. Always check docs.netapp.com for the latest.

# Table of Contents

- IBM ..... 1
  - IBM Cleversafe data collector ..... 1
  - IBM CS data collector ..... 2
  - IBM System Storage DS8000 Series data collector ..... 3
  - Configuring the IBM PowerVM data collector ..... 5
  - Configuring the IBM SAN Volume Controller data collector ..... 6
  - Configuring the IBM XIV/A9000 data collector ..... 8

# IBM

## IBM Cleversafe data collector

Cloud Insights uses this data collector to discover inventory and performance data for IBM Cleversafe storage systems.



IBM Cleversafe is metered at a different Raw TB to Managed Unit rate. Every 40 TB of unformatted IBM Cleversafe capacity is charged as 1 [Managed Unit \(MU\)](#).

### Terminology

Cloud Insights acquires the following inventory information from the IBM Cleversafe 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 |
|-------------------|---------------------|
| Storage Pool      | Storage Pool        |
| Container         | Internal Volume     |
| Container         | File Share          |
| NFS Share         | Share               |

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

### Requirements

- The external data services IP address for the cluster
- Administrator user name and password
- Port 9440

### Configuration

| Field                   | Description  |
|-------------------------|--|
| Manager IP or host name | IP address or hostname of management node                                  |
| User name               | Username for the user account with super user or system administrator role |
| Password                | Password for the user account with super user or system administrator role |

### Advanced configuration

| Field                         | Description                       |
|-------------------------------|-----------------------------------|
| Inventory poll interval (min) | Interval between inventory polls. |

| Field                         | Description              |
|-------------------------------|--------------------------|
| HTTP Connection Timeout (sec) | HTTP timeout in seconds. |

## Troubleshooting

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

## IBM CS data collector

Cloud Insights uses this data collector to discover inventory and performance data for IBM CS storage systems.

## Terminology

Cloud Insights acquires the following inventory information from the IBM CS 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 |
|-------------------|---------------------|
| Storage Pool      | Storage Pool        |
| Container         | Internal Volume     |
| Container         | File Share          |
| NFS Share         | Share               |

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

## Requirements

- The external data services IP address for the cluster
- Administrator user name and password
- Port 9440

## Configuration

| Field                     | Description   |
|---------------------------|---|
| Prism External IP Address | The external data services IP address for the cluster |
| User name                 | User name for the Admin account                       |
| Password                  | Password for the Admin account                        |

## Advanced configuration

| Field                          | Description  |
|--------------------------------|--|
| TCP port                       | TCP Port used to connect to the IBM CS array. The default is 9440. |
| Inventory poll interval (min)  | Interval between inventory polls. The default is 60 minutes.       |
| Performance poll interval(sec) | Interval between performance polls. The default is 300 seconds.    |

## Troubleshooting

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

## IBM System Storage DS8000 Series data collector

The IBM DS (CLI) data collector supports inventory and performance data acquisition for DS6xxx and DS8xxx devices.

DS3xxx, DS4xxx, and DS5xxx devices are supported by the [NetApp E-Series data collector](#). You should refer to the Cloud Insights support matrix for supported models and firmware versions.

## Terminology

Cloud Insights acquires the following inventory information from the IBM DS 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 |
|----------------------------|---------------------|
| Disk Drive Module          | Disk                |
| Storage Image              | Storage             |
| Extent Pool                | Storage Node        |
| Fixed Block Volume         | Volume              |
| Host FC Initiator (Mapped) | Volume Mask         |

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

## Requirements

You need the following to configure this data collector:

- IP address of each DS array
- Read-only username and password on each DS array
- Third-party software installed on the Cloud Insights AU: IBM *dscli*
- Access validation: Run *dscli* commands using the username and password
- Port requirements: 80, 443, & 1750

## Configuration

| Field                        | Description  |
|------------------------------|--|
| DS Storage                   | IP address or fully-qualified domain name of the DS device |
| User Name                    | User name for the DS CLI                                   |
| Password                     | Password for the DS CLI                                    |
| <i>dscli</i> executable path | Full path to the <i>dscli</i> executable                   |

## Advanced configuration

| Field                           | Description  |
|---------------------------------|--|
| Inventory Poll Interval (min)   | Interval between inventory polls (min). The default is 40.   |
| Storage Display Name            | Name of the IBM DS storage array   |
| Inventory Exclude Devices       | Comma-separated list of device serial numbers to exclude from inventory collection                     |
| Performance Poll Interval (sec) | The default is 300.  |
| Performance Filter Type         | Include: Data collected only from devices on list.<br>Exclude: No data from these devices is collected |
| Performance Filter Device List  | Comma-separated list of device IDs to include or exclude from performance collection                   |

## Troubleshooting

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

### Inventory

| Problem:  | Try this:   |
|---|---|
| Error containing: CMUC00192E, CMUC00191E or CMUC00190E  | <ul style="list-style-type: none"><li>* Verify credentials and IP address entered.</li><li>* Try to communicate with the array through web management console <a href="https://{\$ip}:8452/DS8000/Console">https://{\$ip}:8452/DS8000/Console</a>. Replace the {\$ip} with data collector configured IP.</li></ul>  |
| Error: <ul style="list-style-type: none"><li>* Cannot run program</li><li>* Error executing command</li></ul> | <ul style="list-style-type: none"><li>* From Cloud Insights Acquisition Unit Open a CMD</li><li>* Open CLI.CFG file in CLI's home dir/lib and check property JAVA_INSTALL, edit the value to match your environment</li><li>* Display Java version installed on this machine, typing: "java -version"</li><li>* Ping the IP address of the IBM Storage device specified in CLI command issued.</li><li>* If all the above worked fine then manually run a CLI command</li></ul> |

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

## Configuring the IBM PowerVM data collector

The IBM PowerVM (SSH) data collector is used to collect information about virtual partitions running on IBM POWER hardware instances managed by a hardware management console (HMC).

### Terminology

Cloud Insights acquires inventory information from the virtual partitions running on IBM POWER hardware instances. For each asset type acquired, the most common terminology used for the asset is shown. When viewing or troubleshooting this data collector, keep the following terminology in mind:

| Vendor/Model Term | Cloud Insights Term |
|-------------------|---------------------|
| hdisk             | Virtual Disk        |
| Managed System    | Host                |
| LPAR, VIO Server  | Virtual Machine     |
| Volume Group      | Data Store          |
| Physical Volume   | LUN                 |

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

### Requirements

The following requirements must be met to configure and use this data collector:

- IP address of the Hardware Management Console (HMC)
- User name and password that provide access to Hardware Management Console (HMC) through SSH
- Port requirement SSH-22
- View permission on all management systems and logical partition security domains

The user must also have View permission on HMC configurations and the ability to collect VPD information for the HMC console security grouping. The user must also be allowed Virtual IO Server Command access under the Logical Partition security grouping. It is a best practice to start from a role of an operator and then remove all roles. Read-only users on the HMC do not have privileges to run proxied commands on AIX hosts.

- IBM best practice is to have the devices monitored by two or more HMCs. Be aware that this may cause OnCommand Insight to report duplicated devices, therefore it is highly recommended to add redundant devices to the "Exclude Devices" list in the Advanced Configuration for this data collector.

### Configuration

| Field  | Description  |
|--|--|
| Hardware Management Console (HMC) IP Address | IP address or fully-qualified domain name of the PowerVM Hardware Management Console |
| HMC User                                     | User name for the Hardware Management Console  |
| Password                                     | Password used for the Hardware Management Console                                    |

## Advanced configuration

| Field                         | Description  |
|-------------------------------|--|
| Inventory Poll Interval (min) | Interval between inventory polls. The default is 20 minutes.   |
| SSH Port                      | Port used for SSH to the PowerVM                               |
| Password                      | Password used for the Hardware Management Console              |
| Number of Retries             | Number of inventory retry attempts                             |
| Exclude Devices               | Comma-separated list of device IDs or display names to exclude |

## Troubleshooting

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

## Configuring the IBM SAN Volume Controller data collector

The IBM SAN Volume Controller (SVC) data collector collects inventory and performance data using SSH, supporting a variety of devices that run the SVC operating system.

The list of supported devices includes models such as the SVC, the v7000, the v5000, and the v3700. Refer to the Cloud Insights support matrix for supported models and firmware versions.

## Terminology

Cloud Insights acquires the following inventory information from the IBM SVC 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 |
|-------------------|---------------------|
| Drive             | Disk                |
| Cluster           | Storage             |
| Node              | Storage Node        |
| Mdisk Group       | Storage Pool        |



| Vendor/Model Term | Cloud Insights Term    |
|-------------------|------------------------|
| Vdisk             | Volume                 |
| Mdisk             | Backend LUNs and paths |

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

## Inventory Requirements

- IP address of each SVC cluster
- Port 22 available
- Read-only user name and password

## Performance Requirements

- SVC Console, which is mandatory for any SVC cluster and required for the SVC discovery foundation package.
- Credentials will require administrative access level only for copying performance files from cluster nodes to the config node.
- Enable data collection by connecting to the SVC cluster by SSH and running: `svctask startstats -interval 1`

Note: Alternatively, enable data collection using the SVC management user interface.

## Configuration

| Field                | Description   |
|----------------------|---|
| Cluster IP Addresses | IP addresses or fully-qualified domain names of the SVC storage |
| Inventory User Name  | User name for the SVC CLI                                       |
| Inventory Password   | Password for the SVC CLI  |

## Advanced configuration

| Field                           | Description   |
|---------------------------------|---|
| Inventory Poll Interval (min)   | Interval between inventory polls. The default is 40 minutes.    |
| Performance Poll Interval (sec) | Interval between performance polls. The default is 300 seconds. |
| To clean up dumped stats files  | Select this checkbox to clean up dumped stats files             |

## Troubleshooting

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

| Problem:   | Try this:   |
|--|---|
| Error: "The command cannot be initiated because it was not run on the configuration node." | The command must be executed on the configuration node. |

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

| Problem:   | Try this:   |
|--|---|
| Error: "The command cannot be initiated because it was not run on the configuration node." | The command must be executed on the configuration node. |

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

## Configuring the IBM XIV/A9000 data collector

IBM XIV and A9000 (CLI) data collector uses the XIV command-line interface to collect inventory data while performance collection is accomplished by making SMI-S calls to the XIV/A9000 array, which runs a SMI-S provider on port 7778.

### Terminology

| Vendor/Model Term | Cloud Insights Term |
|-------------------|---------------------|
| Disk              | Disk                |
| Storage System    | Storage             |
| Storage Pool      | Storage Pool        |
| Volume            | Volume              |

### Requirements

The following requirements must be met to configure and use this data collector:

- Port requirement: TCP port 7778
- Read-only user name and password
- The XIV CLI must be installed on the AU

### Performance requirements

The following are requirements for performance collection:

- SMI-S Agent 1.4 or higher
- SMI-S compatible CIMService running on array. Most XIV arrays have a CIMServer installed by default.
- User login must be provided for the CIMServer. The login must have full read access to the array configuration and properties.
- SMI-S namespace. Default is root/ibm. This is configurable in the CIMServer.

- Port Requirements: 5988 for HTTP, 5989 for HTTPS.
- Refer to the following link on how to create an account for SMI-S performance collection:  
[http://publib.boulder.ibm.com/infocenter/tivihelp/v4r1/index.jsp?topic=%2Fcom.ibm.tpc\\_V41.doc%2Ffqz0\\_t\\_adding\\_cim\\_agent.html](http://publib.boulder.ibm.com/infocenter/tivihelp/v4r1/index.jsp?topic=%2Fcom.ibm.tpc_V41.doc%2Ffqz0_t_adding_cim_agent.html)

## Configuration

| Field                          | Description  |
|--------------------------------|--|
| XIV IP address                 | IP address or fully-qualified domain name of the XIV storage |
| User Name                      | User name for the XIV storage                                |
| Password                       | Password for the XIV storage                                 |
| Full Path to XIV CLI Directory | Full path to the folder containing the XIV CLI               |
| SMI-S Host IP Address          | IP address of the SMI-S host                                 |

## Advanced configuration

| Field                           | Description   |
|---------------------------------|---|
| Inventory Poll Interval (min)   | Interval between inventory polls. The default is 40 minutes.  |
| SMI-S Protocol                  | Protocol used to connect to the SMI-S provider. Also displays the default port.                         |
| Override SMI-S Port             | If blank, use the default port in the Connection Type field, otherwise enter the connection port to use |
| Username                        | User name for the SMI-S Provider Host   |
| Password                        | Password for the SMI-S Provider Host  |
| Performance Poll Interval (sec) | Interval between performance polls. The default is 300 seconds.   |

## Troubleshooting

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

## Copyright information

Copyright © 2023 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.