

# Hitachi Ops Center Analyzer Virtual Storage Software Agent Troubleshooting Guide

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## Preface

The purpose of this document is to let on-site personnel and support staff know how to identify issues and isolate the cause when troubleshooting Hitachi Ops Center Analyzer Virtual Storage Software Agent. We hope that this document help ease the burden on personnel and allow them to respond to and resolve issues in a timely manner.

## Revision History

No.	Product Version	Description	Date
1	10.6.0-00	Create a new document	01/28/2021
2	10.8.3-00	Added the section "Analyzer API to acquire performance data of VSSB returns error with http status code 401"	07/04/2022
3	11.0.0-00	- Change the section 4.2 "Analyzer API to acquire performance data of VSSB returns error with http status code 401" to "In the Analyzer probe server, the Hitachi VSS block Storage probe indicates "Processing Delay"" to add typical causes. - Added the section 4.3 "Analyzer and Detail view cannot display volumes belonging to a VPS"	12/25/2023

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## 1 Overview

### 1.1 Scope of this document

ITPD, CTSC/ESC/APSC, Hitachi Vantara

## 1.2 Glossary

#	Acronym or abbreviation	Full name or meaning
1	VirtualStorageSoftware Agent	Hitachi Ops Center Analyzer Virtual Storage Software Agent
2	Analyzer	Hitachi Ops Center Analyzer (former HIAA:Hitachi Infrastructure Analytics Advisor)
3	VSSB	Hitachi Virtual Storage Software Block
4	vROps plugin	Hitachi Infrastructure Management Pack for VMware vRealize Operations
5	Detail view	Hitachi Ops Center Analyzer detail view
6	Analyzer probe	Hitachi Ops Center Analyzer probe

## 1.3 Required knowledge

- Knowledge of operating systems (Linux)
- Knowledge of SANs
- Knowledge of storage devices

## 1.4 Related documents

- Hitachi Ops Center Analyzer Installation and Configuration Guide
- Hitachi Ops Center Analyzer User Guide
- Hitachi Ops Center Analyzer Virtual Storage Software Agent Log Analysis Guide

## 2 Troubleshooting Procedure

Fig. 2.1 shows flow of VirtualStorageSoftware Agent troubleshooting.

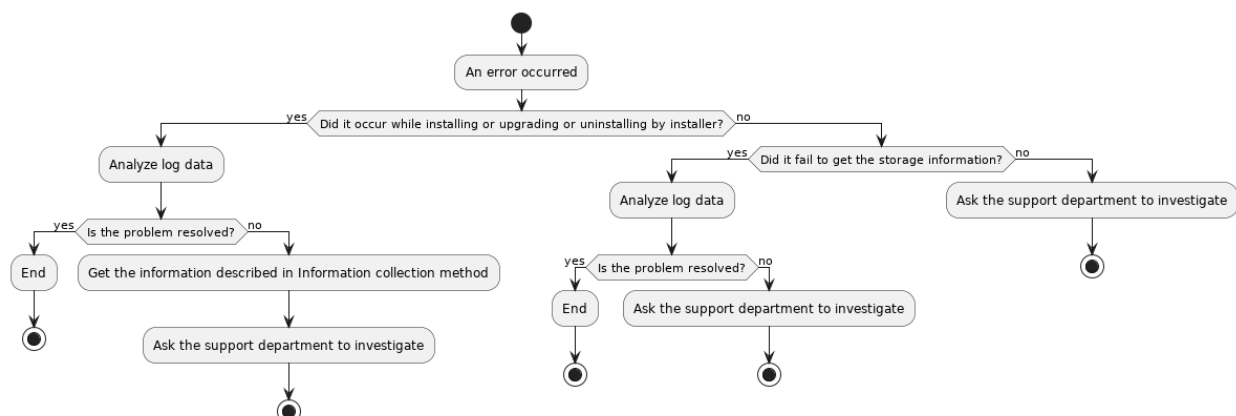


Fig. 2.1: Flow of troubleshooting

## 3 Collecting Troubleshooting Information

### 3.1 Information required for troubleshooting

#### 3.1.1 Installing VirtualStorageSoftware Agent

If an error occurred while installing VirtualStorageSoftware Agent by the installer, you need to collect troubleshooting information.

1. Error/Event that occurred (Copy of the console log or screenshots of the console can be used)
2. Details of performed user operations
3. Time of occurrence
4. OS (distribution and version)
5. Data collected by the command described in *Information collection method* Information collection method.

#### 3.1.2 After installing VirtualStorageSoftware Agent

If an error occurred after installing VirtualStorageSoftware Agent, you need to collect troubleshooting information when it occurs.

1. Error/Event that occurred (Copy of the console log or screenshots of the console can be used)
2. Details of performed user operations
3. Time of occurrence
4. System configuration (Product version, OS, IP address, etc.):
  - Analyzer
  - VirtualStorageSoftware Agent
  - VSSB
5. If an error occurs during CLI execution, following information is also required.
  - CLI name
  - Arguments and standard out/error.
6. Data collected by the command described in *Information collection method* Information collection method.

### 3.2 Information collection method

#### 3.2.1 Overview

The log files, system configurations, and other information for VirtualStorageSoftware Agent troubleshooting can be collected from the VirtualStorageSoftware Agent host.

### 3.2.2 Prerequisites

- Login the VirtualStorageSoftware Agent host with *root* privilege

### 3.2.3 Procedure

Execute the following command:

```
rpm -qa > rpm_list.txt && ps aux > ps_aux.txt && lsof -i -P > lsof_i_P.txt && tar -cvzf agent_diag.tar.gz /opt/hitachi/
↪VirtualStorageSoftwareAgent /var/log/hitachi/VirtualStorageSoftwareAgent ./rpm_list.txt ./ps_aux.txt ./lsof_i_P.txt
```

Collected log files are achieved as agent\_diag.tar.gz in the current directory.

### 3.2.4 Structure of diagnostic data

Table 3.1 shows structure of diagnostic data. Please see VirtualStorageSoftware Agent Log Analysis Guide for details about log data.

Table 3.1: Structure of diagnostic data

#	Directory	Collected files
1	/opt/hitachi/VirtualStorageSoftwareAgent/	Configuration files for VirtualStorageSoftware Agent
2	/var/log/hitachi/VirtualStorageSoftwareAgent/installer/	install log for VirtualStorageSoftware Agent
3	/var/log/hitachi/VirtualStorageSoftwareAgent/log/	Log for VirtualStorageSoftware Agent

## 4 Failure Examples

### 4.1 Analyzer API to acquire performance data of VSSB returns error with http status code 404

In the case, API client calls API to acquire performance data of an VirtualStorageSoftware Agent instance which is not managed by Analyzer server. The typical causes are:

- API client request is not correct (e.g. misspelled instance name).
- Analyzer server fail to refresh VirtualStorageSoftware Agent instance list.

In the log file of Analyzer server, the managed VirtualStorageSoftware Agent instance list is stored in *\Analytics\_log\physical\Analytics\data\database\TnmAgentInstance\tnmAgentInstances*

```
{
  "agentInstances" : [ {
    "agentHostOrIpAddress" : "203.0.113.255",
    "protocol" : "http",
    "port" : 24080,
    "agentHostName" : "host1",
    "agentType" : "VirtualStorageSoftware",
    "instanceName" : "inst1",
    "dataModelVersion" : "0.0",
    "lastUpdateTime" : 1613365532276,
    "target" : {
      "vendor" : "HITACHI",
      "model" : "SS1000",
      "serialNumber" : "057907"
    }
  }
]
}
```

If the managed instance list does not contains the latest VirtualStorageSoftware Agent instances, then Analyzer server might fail to refresh VirtualStorageSoftware Agent instance list. The following procedure shows how to check whether refresh failed or not, and the failure reason.

#### 4.1.1 How to check whether refresh failed or not

Analyzer server acquires a list of VirtualStorageSoftware Agent instances from VirtualStorageSoftware Agent server when Analyzer server is restarted or the refresh API(/Analytics/RAIDAgent/v1/services/AgentManager/actions/refresh/invoke) is executed. By default, the refresh API is automatically executed once a day. Therefore, check the Analyzer server log files at first.

1. Find "AgentForVirtualStorageSoftware/v1/services/AgentManager/actions/refresh/invoke" in \Analytics\_log\physical\Analytics\logs\trace\Server[n].log. This log means that Analyzer server try to connect VirtualStorageSoftware Agent.

```
KNAQ10106-I      ApacheCommonsHttpAccessorImpl info: url = [POST http://203.0.113.255:24080/
↪AgentForVirtualStorageSoftware/v1/services/AgentManager/actions/refresh/invoke]
```

2. Check the warning or error message (e.g. KNAQ10175-W) is logged or not. When an warning or error message is logged, Analyzer fails to connet VirtualStorageSoftware Agent.

```
KNAQ10175-W      AgentAccessorSophiaImpl warning: java.net.NoRouteToHostException: No route to host [errno=113,
↪syscall=connect]
```

3. Investigate the cause of the warning or error message and take a action. The main causes are as follows.

Error cause message	errno	Cause and solution
Connection refused	111	<p>The VirtualStorageSoftware Agent may not be running. Use the following command on the VirtualStorageSoftware Agent host to check and start it.</p> <ul style="list-style-type: none"> <li>• Service status check systemctl status virtualstoragesoftware-agent.service</li> <li>• Service start systemctl start virtualstoragesoftware-agent.service</li> </ul> <p>The port is not correct. Check the port is written in \Analytics_log\physical\Analytics\conf\virtualstoragesoftware-access-points.yaml matches the port of VirtualStorageSoftware Agent.</p> <p>The port is blocked by a firewall on the VirtualStorageSoftware Agent host. Check the firewall configuration of the VirtualStorageSoftware Agent host.</p>
No route to host	113	<p>Analyzer server request can not reach the VirtualStorageSoftware Agent host. Check the ip address or host name of the VirtualStorageSoftware Agent host written in \Analytics_log\physical\Analytics\conf\virtualstoragesoftware-access-points.yaml can be reached. If a user uses a host name not ip address, check name resolution works correctly on the Analyzer server host.</p>

### 4.1.2 Checking the connection from VirtualStorageSoftware Agent to VSSB

If there is no problem in checking the connection from Analyzer to VirtualStorageSoftware Agent, follow the procedure below to check whether VirtualStorageSoftware Agent can connect to VSSB.

1. Check if the KNAQ38209-W is logged in the VirtualStorageSoftware Agent host `log(\var\log\hitachi\VirtualStorageSoftwareAgent\log\trace.log)`.

```
ERROR [dw-23] [b2536779-efae-485f-964a-7c35ef36b330] [2021-01-20 18:49:20,624]
↳SophiaAgentInstanceRefresher:fetchSophiaInstances: KNAQ38209-W VirtualStorageSoftware Api connection failed. Please confirm.
↳connection settings. (target=test1, file={1})
```

2. If KNAQ38209-W is logged, the main causes are as follows. Check and take a action.
  - Make sure that VSSB host or IP address can be reached from VirtualStorageSoftware Agent.
  - Make sure that the target VSSB is running.
  - Check whether the specified contents of the following VSSB connection setting file(`\opt\hitachi\VirtualStorageSoftwareAgent\config\access-points.yaml`) on the VirtualStorageSoftware Agent host are correct.

## 4.2 In the Analyzer probe server, the Hitachi VSS block Storage probe indicates "Processing Delay"

Symptoms:

In the Analyzer probe server, the Hitachi VSS block Storage probe indicates "Processing Delay".

The typical causes is:

- (1) The registered password for connecting to VSSB has expired.
- (2) The password of the registered user for connecting to VSSB was changed.
- (3) The registered user for connecting to VSSB became invalid.
- (4) The registered user for connecting to VSSB was deleted.
- (5) The group to which the registered user for connecting to VSSB belongs has insufficient permissions.

### 4.2.1 How to check the cause of the error

Check the error messages output to the file `"/var/log/hitachi/VirtualStorageSoftwareAgent/log/trace.log"`.

- (1) If an error message like the following is output, the registered password for connecting to VSSB has expired.

```
KNAQ38202-E Target systems api error.(error detail=KARS20012-E User authentication failed.) Change your own password. For
↳details, see the Operation Guide.
```

- (2) If an error message like the following is output, typical causes are the following:

- The password of the registered user for connecting to VSSB was changed.
- The registered user for connecting to VSSB became invalid.
- The registered user for connecting to VSSB was deleted.

```
KNAQ38202-E Target systems api error.(error detail=KARS20011-E User authentication failed.) For Basic authentication, specify
↳the correct user ID and password, or enable the account if the account is invalid. If the account is locked, do so after
↳the account is unlocked. For session authentication, specify the correct token. If the session is invalid, do so after you
↳regenerate a session.
```



- (3) If an error message like the following is output, the group to which the registered user for connecting to VSSB belongs has insufficient permissions.

KNAQ38202-E Target systems api error.(error detail=KARS20008-E The request could not be executed.) Verify the role setting.

#### 4.2.2 How to resolve the problem

- (1) If the registered password for connecting to VSSB has expired: The registered password for connecting to VSSB might have expired. Please try to log in to VSSB with the registered credential. If the login failed, refer to the *Changing your own password* section of the *Hitachi Virtual Storage Software Block System Administrator Guide*.
- (2) If the password of the registered user for connecting to VSSB was changed: Run the "instancesetup" command with the "--update" option and register the post-change password in the VirtualStorageSoftware Agent instance.
- (3) If the registered user for connecting to VSSB became invalid: Enable the user in VSSB.
- (4) If the registered user for connecting to VSSB was deleted: Run the "instancesetup" command with the "--update" option and register a valid user and password in the VirtualStorageSoftware Agent instance.
- (5) If the group to which the registered user for connecting to VSSB belongs has insufficient permissions: Refer to the *Setting up Virtual Storage Software Agent* section in the *Hitachi Ops Center Analyzer Installation and Configuration Guide*, and grant the required permissions to the group.

After doing (1) to (5), restart the VirtualStorageSoftware Agent service and verify that the problem has been solved.

### 4.3 Analyzer and Detail view cannot display volumes belonging to a VPS

Symptoms:

Even though a multi-tenancy configuration is used in VSSB and one or more volumes belonging to a VPS were created, Analyzer and the Detail view do not display the volumes belonging to the VPS.

A typical cause is:

- The group to which the registered user for connecting to VSSB belongs has insufficient permissions required for obtaining information about a volume belonging to a VPS.

How to resolve the problem:

- Verify that the group has the permissions required for a multi-tenancy configuration, as described in the *Setting up Virtual Storage Software Agent* section in the *Hitachi Ops Center Analyzer Installation and Configuration Guide*. If the permissions are insufficient, grant the required permissions to the group.

After changing the permissions, restart the VirtualStorageSoftware Agent service and verify that the problem has been solved.

## 5 Appendices

### 5.1 Internal component diagram and process flow

Fig. 5.1 shows internal component diagram and process flow.

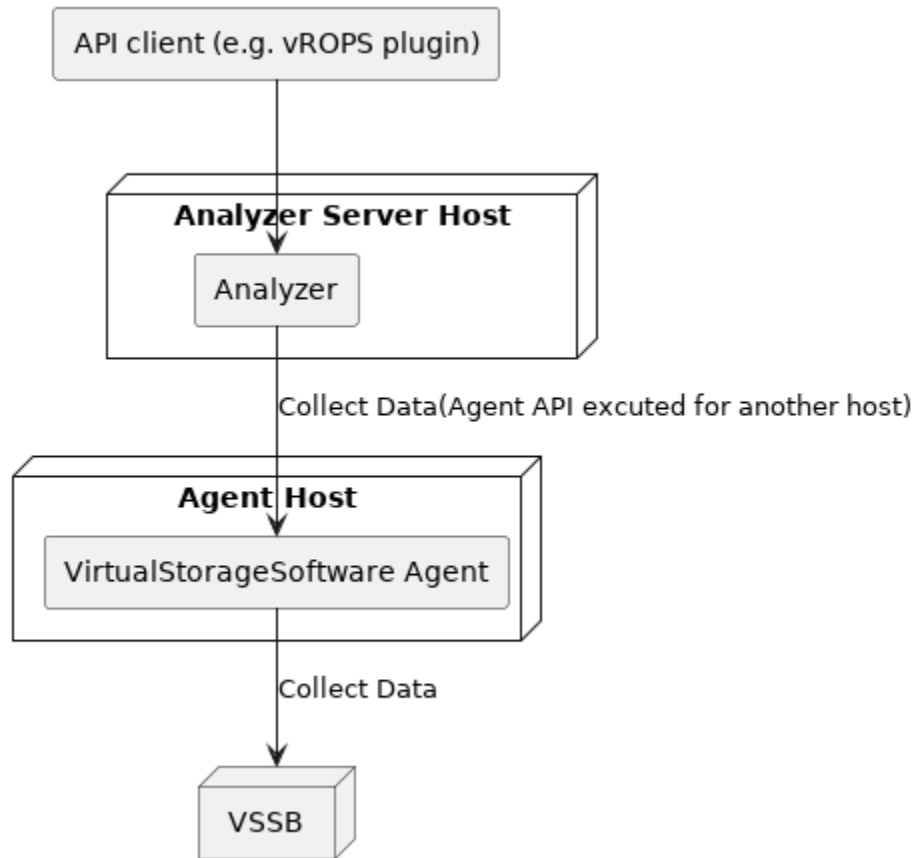


Fig. 5.1: Internal component diagram and process flow

Note for system configuration:

- Analyzer and VirtualStorageSoftware Agent can be installed on a same host.

## 5.2 Forcibly uninstalling VirtualStorageSoftware Agent

If the results of the investigation by the support department indicate that a forced uninstallation is required, remove VirtualStorageSoftware Agent by the following procedure.

### Note:

- The person who performs this task must have administrator-level knowledge for the operating systems concerned. Exercise caution when performing these tasks, so as not to affect other system environments.

### Before you begin:

- Login to VirtualStorageSoftware Agent host.
- root privilege is required to perform the procedure.

1. Stop VirtualStorageSoftware Agent services if the service exists.

```
systemctl stop virtualstoragesoftware-agent.service
```

Note: If the service does not exist, the systemctl command fails. You can skip this step in that case.

## 2. Uninstall VirtualStorageSoftware Agent package

```
rpm -e --nodeps VirtualStorageSoftwareAgent-X.Y.Z-0.x86_64
```

Note: X.Y.Z is an internal version of the components, so the version does not match VirtualStorageSoftware Agent version.

## 3. Remove directories and files of VirtualStorageSoftware Agent

```
rm -rf /opt/hitachi/VirtualStorageSoftwareAgent
```

## 4. Uninstall OSS included (Optional)

The VirtualStorageSoftware Agent installer installs the bundled OSS (see the list of included packages below). If other P.P. does not use the OSS bundled with VirtualStorageSoftware Agent, uninstall it if necessary. Since the bundled OSS is installed with rpm, it can be uninstalled with the rpm command as in step 2.

Table 5.1: List of bundled OSS

#	bundled OSS package name
1	java-1.8.0-amazon-corretto-devel-1.8.0_xxxxxxx.x86_64.rpm

Note: In the environment where other java is installed, it is necessary to add it to alternatives in advance.

```
alternatives --install /usr/bin/java java /usr/lib/jvm/java-1.8.0-amazon-corretto/jre/bin/java X
alternatives --install /usr/bin/javac javac /usr/lib/jvm/java-1.8.0-amazon-corretto/bin/javac X
```

X : Number to add