

Hitachi Ops Center Analyzer viewpoint 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 viewpoint. 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	10.0.0-00	Create a new entry	09/25/2019
2	10.0.1-00	Modified	12/03/2019
3	10.1.0-00	Modified	02/14/2020
4	10.5.0-00	Modified	09/24/2020
5	10.5.1-00	Support Viewpoint installer.	11/24/2020
6	10.7.0-00	The diag command specification is changed to support RHEL/OL8.	06/21/2021
7	10.8.0-01	Added sequence diagram for ETL processing (Host/VM/Switch).	10/18/2021
8	10.8.1-00	Added procedure to change the password of a truststore. Added certificate verification settings into the diag data.	01/24/2022
9	11.0.0-00	Added NetworkManager settings into the diag data. Added a troubleshooting information to Failure Examples. Modified log file of API Gateway in the diag data.	12/25/2023
10	11.0.1-00	Added troubleshooting information for cases where a user enters a password that does not meet the requirements in the config-cert command.	03/26/2024
10	11.0.2-00	Removed troubleshooting information for cases where a user enters a password that does not meet the requirements in the config-cert command.	06/10/2024
11	11.0.4-00	Modified the name of the ETL log files to include file numbers	03/31/2025

Contents

1	Overview	2
1.1	Scope of this document	2
1.2	Glossary	3
1.3	Required knowledge	3
1.4	Related documents	3
2	Troubleshooting Procedure	3
3	Collecting Troubleshooting Information	4
3.1	Information required for troubleshooting	4
3.1.1	Deploying Viewpoint OVF	4
3.1.2	Installing Viewpoint	4
3.1.3	After deploying Viewpoint OVF or installing Viewpoint	4
3.2	Information collection method	5
3.2.1	Hitachi Ops Center Analyzer viewpoint	5
3.2.2	Analyzer, Detail View, Probe, and RAID Agent	7
4	Viewpoint system details	7
4.1	Components of Viewpoint	7
4.2	Sequence of major processing	8
4.2.1	Log in to Viewpoint Webconsole	8
4.2.2	Show reports	9
4.2.3	ETL processing	10
4.2.4	Launch Analyzer	11
4.2.5	Global search	12
5	Failure Examples	13
5.1	Viewpoint GUI does not show Storage System instances properly without any error messages	13
5.1.1	Viewpoint GUI does not show <i>any</i> Storage System instances	14
5.1.2	Viewpoint GUI shows Storage System instances, but status of Storage System instances are <i>Unknown</i> - Case (a)	15
5.2	The status of Analyzer viewpoint shows "Unknown" on Common Services screen.	16
6	Appendices	17
6.1	Forcibly uninstalling Viewpoint	17
6.2	How to change the password of the truststore which is initialized by config-cert command	18

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	Viewpoint	Hitachi Ops Center Analyzer viewpoint
2	Analyzer	Hitachi Ops Center Analyzer (former HIAA:Hitachi Infrastructure Analytics Advisor)
3	Detail View	Hitachi Ops Center Analyzer Detail View (former HDCA:Hitachi Data Center Analytics)
4	HTnM	Hitachi Tuning Manager

1.3 Required knowledge

- Knowledge of VMware
- Knowledge of operating systems (Linux)
- Knowledge of file systems
- Knowledge of browsers (Chrome, Firefox)
- Knowledge of SANs
- Knowledge of storage devices

1.4 Related documents

- Manuals of Analyzer/Detail View
- Hitachi Ops Center Analyzer viewpoint Log Analysis Guide
- Troubleshooting guide and Log Analytics Guide of Hitachi Ops Center Analyzer
- Troubleshooting guide and Log Analytics Guide of HTnM

2 Troubleshooting Procedure

Fig. 2.1 shows flow of Viewpoint troubleshooting.

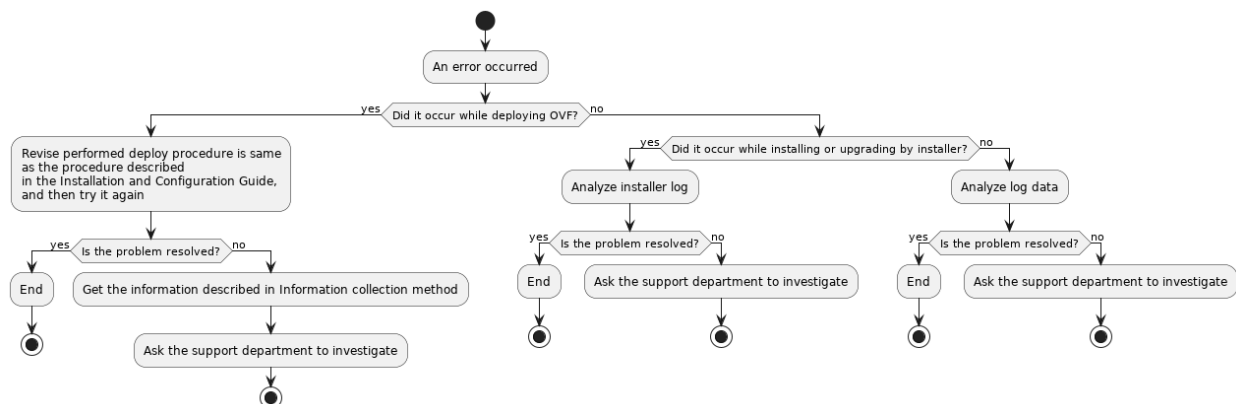


Fig. 2.1: Flow of troubleshooting

3 Collecting Troubleshooting Information

3.1 Information required for troubleshooting

3.1.1 Deploying Viewpoint OVF

If an error occurred while deploying the OVF, you need to collect troubleshooting information.

1. Error/Event that occurred (Screenshots can be used)
2. All input/selected parameters in vCenter screen (Screenshots can be used)
3. Version of vCenter and ESXi

3.1.2 Installing Viewpoint

If an error occurred while installing Viewpoint 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. Data collected by Viewpoint diag command if the command exists and works.
5. If the diag command cannot be used, the following information and configuration are required:
 - OS (distribution and version)
 - Log files of Viewpoint if the directory exists. See also Viewpoint Log Analysis Guide.
 - The result of following commands:
 - ps aux
 - lsof -i -P

3.1.3 After deploying Viewpoint OVF or installing Viewpoint

If an error occurred after deploying the OVF or installing Viewpoint, you need to collect troubleshooting information when it occurs.

1. Error/Event that occurred (Screenshots can be used if an error occurs in GUI)
2. Details of performed user operations
3. Time of occurrence
4. Data center name and device name of the storage system where the error occurred
5. Browser information
 - OS (including service pack)
 - Web browser type and version (including service pack)
6. Data collected by Viewpoint diag command
7. Required information that is described in Ops Center Common Services guide
8. Required information that is described in Analyzer Troubleshooting guide

9. System configuration (Product version, OS, IP address, etc.):
 - Viewpoint
 - Ops Center Common Services
 - Analyzer
 - Analyzer Detail View
 - Analyzer Probe
 - RAID Agent
10. Performed operations or configuration changes related to the problem
11. If an error occurs during CLI execution, following information is also required.
 - CLI name
 - Arguments and standard out/error.

3.2 Information collection method

3.2.1 Hitachi Ops Center Analyzer viewpoint

Overview

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

Prerequisites

- Login the Viewpoint host with *root* privilege

Procedure

Execute the following command:

```
/opt/hitachi/analyzer_viewpoint/bin/diag
```

Collected log files are achieved as *diagnostic-data.yyyyMMDD-HH:mm:ss.tgz* (e.g. *diagnostic-data.20190924-052749.tgz*) in the current directory.

Structure of diagnostic data

Table 3.1 shows structure of diagnostic data. Please see Viewpoint Log Analysis Guide for details about Viewpoint internal components.

Table 3.1: Structure of diagnostic data

#	Category	Directory	Collected files
1	Viewpoint logs and config	/log/apigw/	Logs of Viewpoint API Gateway
2	Viewpoint logs and config	/log/api-proxy/	Logs of API proxy
3	Viewpoint logs and config	/log/cli/	Logs of Viewpoint CLIs
4	Viewpoint logs and config	/log/etl/	Logs of Viewpoint ETL
5	Viewpoint logs and config	/log/iaa-launcher/	Logs of Viewpoint Analyzer launcher
6	Viewpoint logs and config	/log/influxdb/	Logs of Viewpoint database
7	Viewpoint logs and config	/log/installer/	Logs of installer. If the environment is deployed or upgraded by OVF, this directory is empty.
8	Viewpoint logs and config	/log/inventory/	Logs of inventory manager
9	Viewpoint logs and config	/log/webconsole/	Logs of Viewpoint webconsole
10	Viewpoint logs and config	/log/license-manager/	Logs of Viewpoint license manager
11	Viewpoint logs and config	/productdata/system/	Product data of Viewpoint (e.g. Version information)
12	Viewpoint logs and config	/systemdata/apigw/	Configuration files for API Gateway
13	Viewpoint logs and config	/systemdata/etl/	Configuration files for ETL
14	Viewpoint logs and config	/systemdata/system/	Configuration files for Viewpoint components. The files contain : <ul style="list-style-type: none"> • Common Services URL which manages the Viewpoint • Port number of Hitachi Ops Center Analyzer viewpoint • IP address of Hitachi Ops Center Analyzer viewpoint • Host name of Hitachi Ops Center Analyzer viewpoint if a user configures Hitachi Ops Center Analyzer viewpoint to use host name • Certificate verification status and registered certificates of Hitachi Ops Center Analyzer viewpoint
15	Viewpoint logs and config	/system-data/webconsole/	Configuration files for webconsole
16	Common Services	/ops-center-common-service/	Logs of Common Services which is installed on the Viewpoint host. This logs exist only when the diag data is collected on the Viewpoint OVF or Common Services is installed with the default install path on the Viewpoint host.
17	OS logs and config	/config/chrony/	Logs of chrony service. The directory is empty by default configuration. The logs of chrony are recorded in /log/messages/
18	OS logs and config	/config/network/	Copy of /etc/sysconfig/network-scripts/ifcfg-*
19	OS logs and config	/config/network-manager/	Copy of /etc/NetworkManager/NetworkManager.conf
20	OS logs and config	/config/network-manager/system-connections/	Copy of /etc/NetworkManager/system-connections/*.nmconnection
21	OS logs and config	/config/resolv/	Copy of /etc/resolv.conf
22	OS logs and config	/config/yum/	Copy of /etc/yum.conf and /etc/yum.repos.d
23	OS logs and config	/log/crash/	Copy of /var/crash

continues on next page

Table 3.1 – continued from previous page

24	OS logs and config	/log/sa/	Copy of <i>/var/log/sa</i>
25	OS logs and config	/log/secure/	Copy of <i>/var/log/secure*</i>
26	OS logs and config	/log/messages/	Copy of <i>/var/log/messages*</i>
27	OS logs and config	/systeminfo/	Host configuration (e.g. memory, disks, cpu, etc)
28	OS logs and config	/systemstat/	System statistics at the time when a user executes <i>diag</i>

How to check the environment is deployed by the OVF or installed by the installer.

If the diag data contains the following file, the environment is deployed by OVF.

```
/productdata/system/.ovf_build
```

If the environment is deployed by the OVF and upgraded by the installer, both the *.ovf_build* file and logs of installer exist.

3.2.2 Analyzer, Detail View, Probe, and RAID Agent

See the Troubleshooting guide of Analyzer.

4 Viewpoint system details

4.1 Components of Viewpoint

Fig. 4.1 and Table 4.1 show internal components of Viewpoint. (This section is the same as the Components of Viewpoint of Log Analysis guide.)

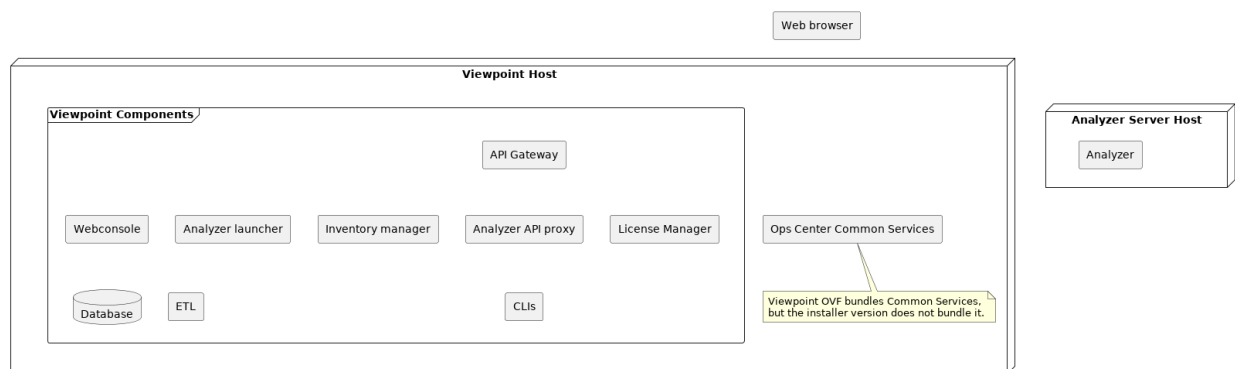


Fig. 4.1: Internal components of Viewpoint

Table 4.1: Description of Viewpoint components

#	Component	Description
1	API Gateway	It takes all API calls from clients (e.g. web browser), then dispatches them to the appropriate components from the following components. <ul style="list-style-type: none"> • Webconsole • Analyzer launcher • Analyzer API proxy • Inventory manager • Ops Center Common Services Only if Common Services which is bundled in the Viewpoint OVF is used, the API Gateway dispatches requests to the Common Services. Even if the both Common Services and Viewpoint installer version are installed on the same host, the API Gateway does not dispatch requests to the Common Services.
2	Webconsole	Reporting component. It reads data from the database and shows reports (e.g. charts)
3	Analyzer launcher	Component for Analyzer E2E Launch feature. It resolves the direct link url of Analyzer E2E by accessing Inventory manager and Analyzer API.
4	Analyzer API proxy	Component for Search feature and Analyzer launcher and Inventory manager proxy feature. It gets search result by accessing Inventory manager and Analyzer API. It also proxies the Analyzer launcher API and the Inventory manager API and returns the API execution results.
5	Inventory manager	Component for getting data centers and Analyzer instances. It gets data centers and Analyzer instances by accessing Ops Center Common Services.
6	Database	Stores all data for reporting
7	ETL	Component for generating data for reporting. It generates data by accessing Ops Center Common Services, Inventory manager and Analyzer API.
8	CLIs	CLI to configure Viewpoint. (e.g. It registers Viewpoint to Ops Center Common Services)
9	License Manager	Component for managing a Viewpoint license.

4.2 Sequence of major processing

4.2.1 Log in to Viewpoint Webconsole

Fig. 4.2 shows sequence diagram for login.

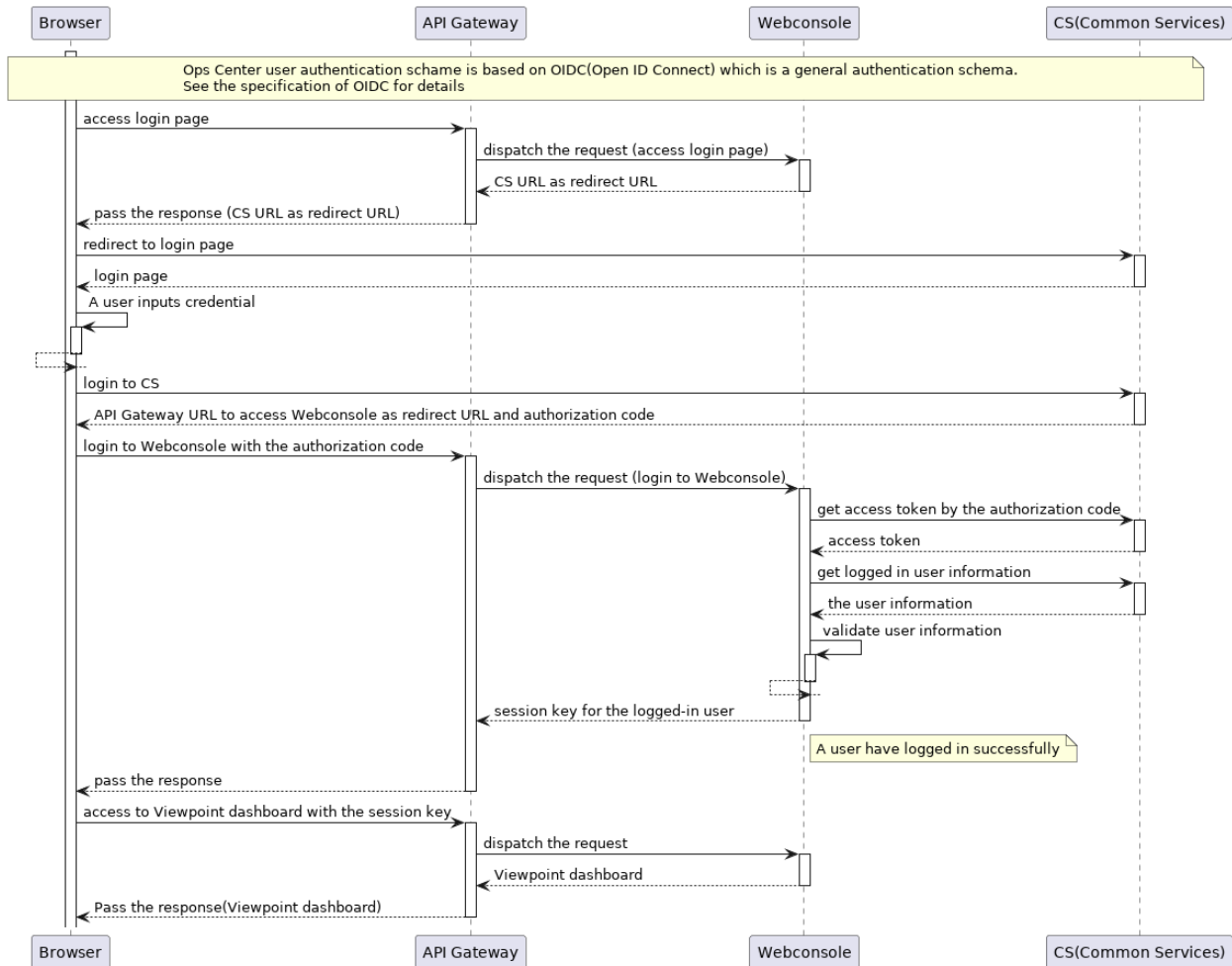


Fig. 4.2: Sequence diagram for login

4.2.2 Show reports

Fig. 4.3 shows sequence diagram for showing reports

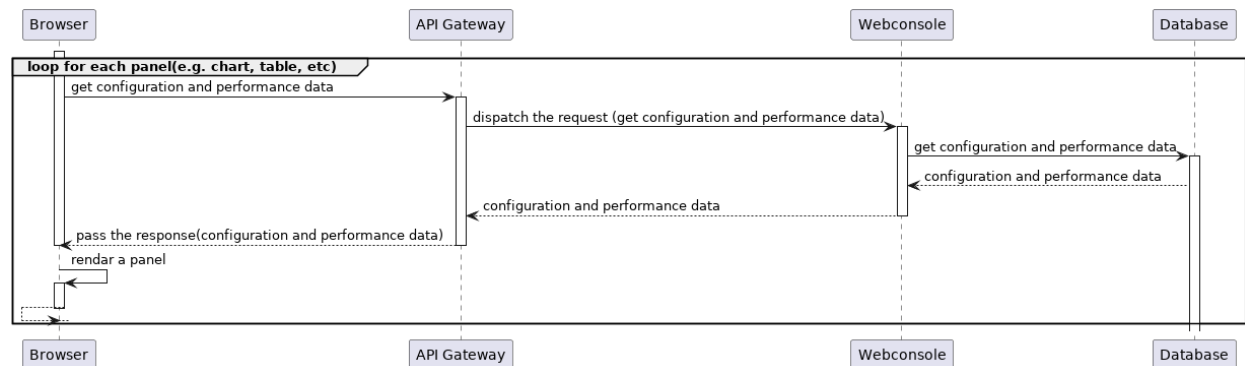


Fig. 4.3: Sequence diagram for showing reports

4.2.3 ETL processing

Fig. 4.4 shows sequence diagram for ETL processing (RAID Agent)

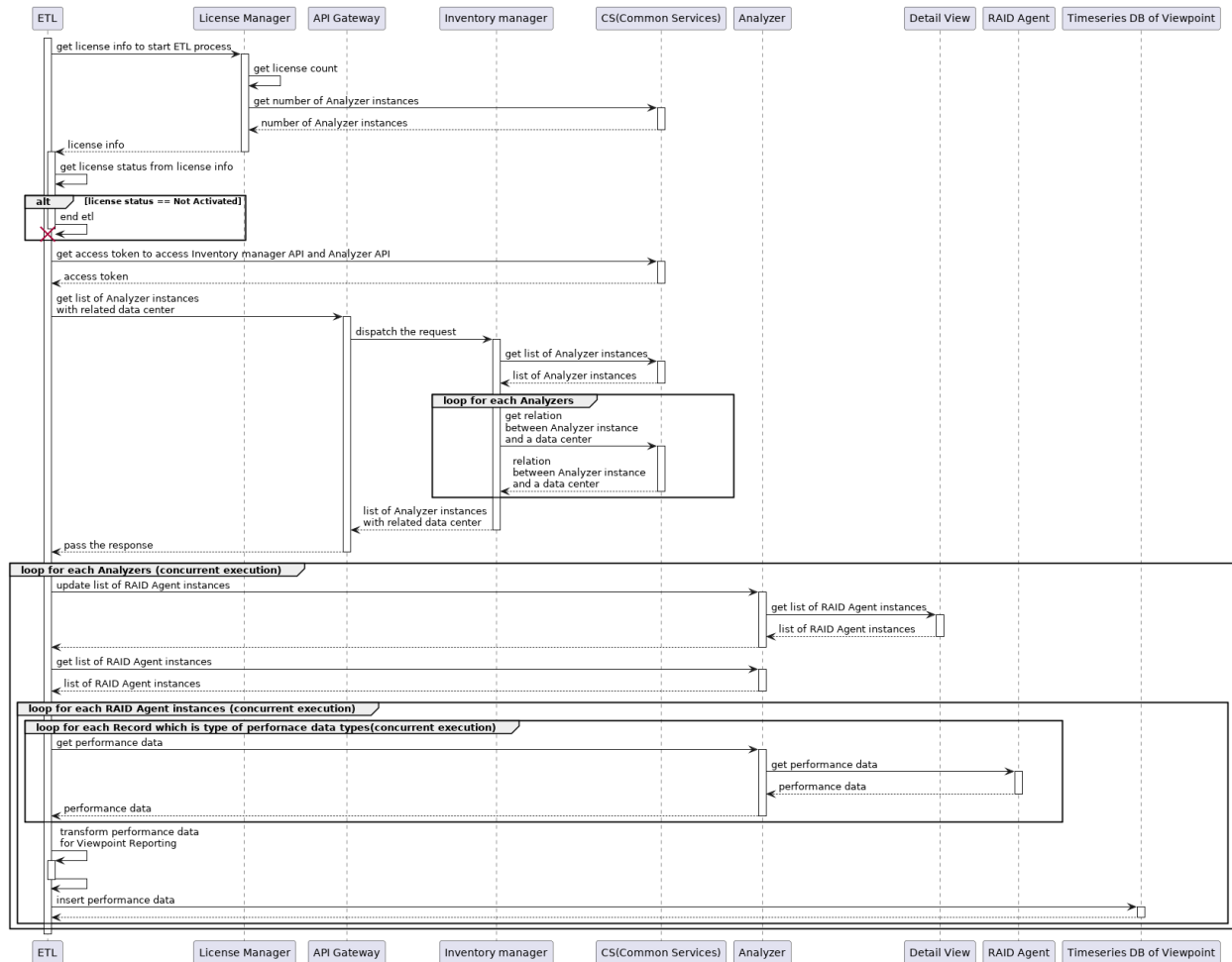


Fig. 4.4: Sequence diagram for ETL processing (RAID Agent)

Fig. 4.5 shows sequence diagram for ETL processing (Host/VM/Switch)

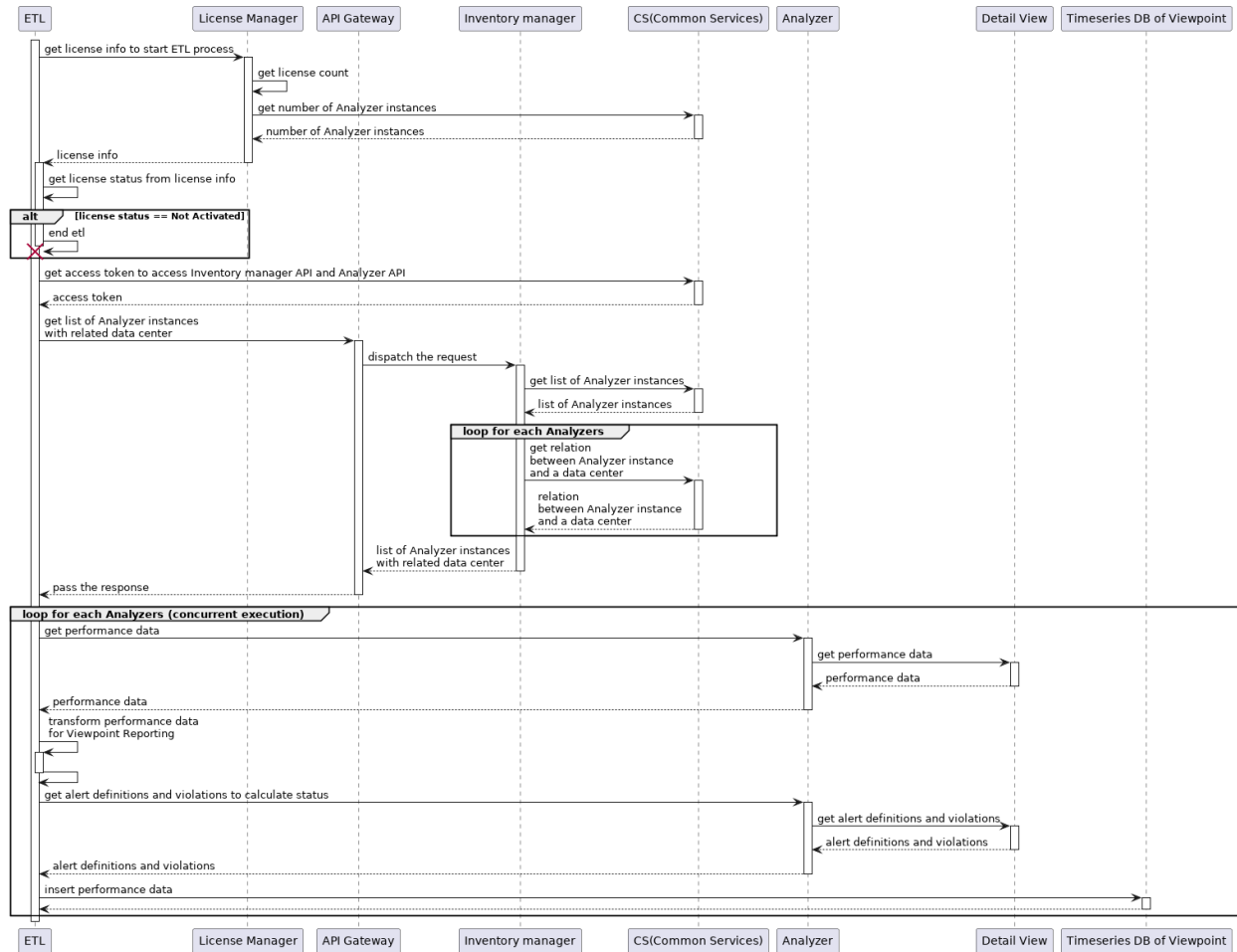


Fig. 4.5: Sequence diagram for ETL processing (Host/VM/Switch)

4.2.4 Launch Analyzer

Fig. 4.6 shows sequence diagram for launching Analyzer

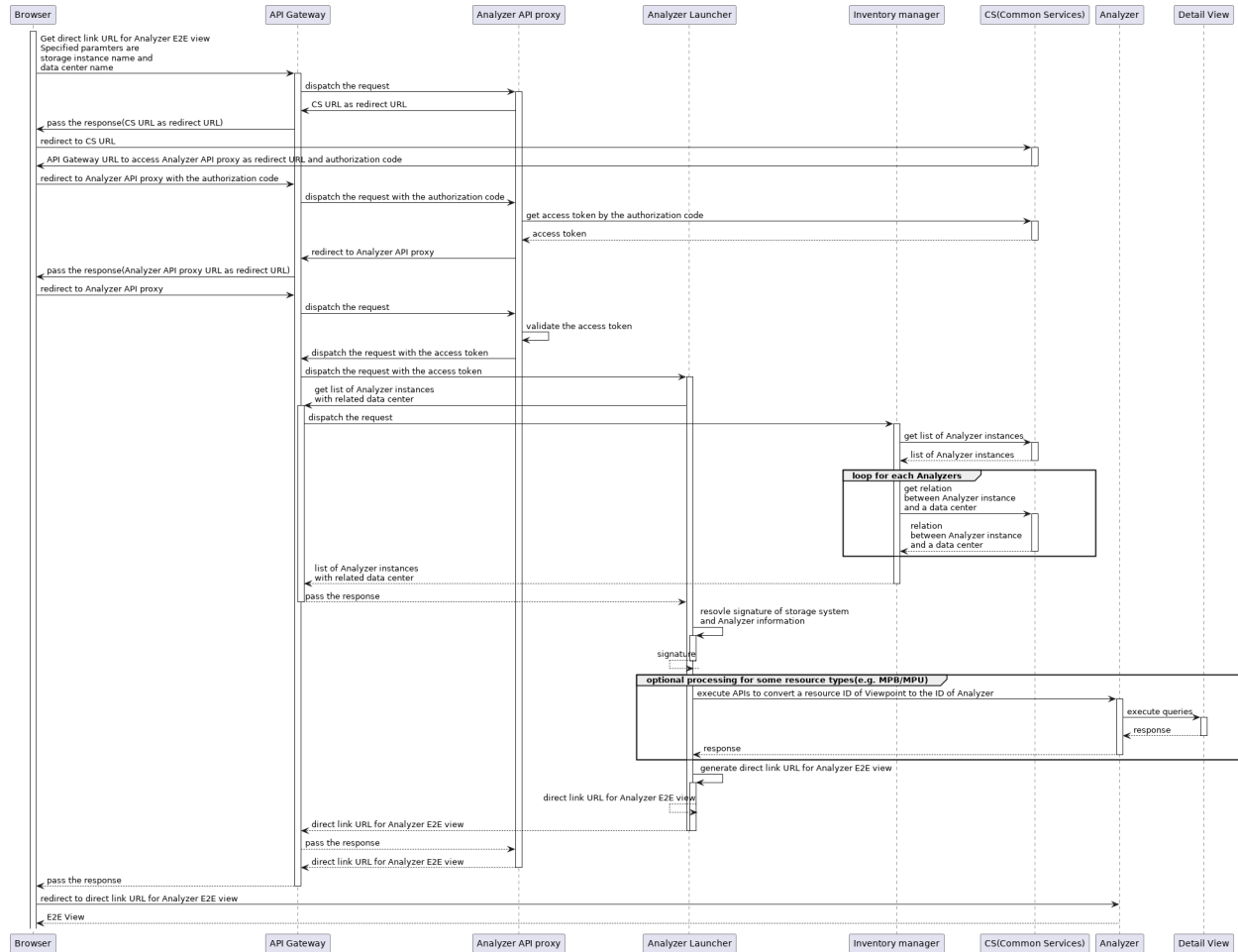


Fig. 4.6: Sequence diagram for launching Analyzer

4.2.5 Global search

Fig. 4.7 shows sequence diagram for global search

Table 5.1: Description of Viewpoint components

#	Typical behavior	Possible causes
1	Viewpoint GUI does not show <i>any</i> Storage System instances	<ul style="list-style-type: none"> • ETL did not run because the virtual machine had been shut-down • ETL fails to access Common Services • ETL fails to access Inventory manager
2	Viewpoint GUI does not show <i>some</i> Storage System instances	<ul style="list-style-type: none"> • ETL fails to access some Analyzer instances. In this case Storage Systems managed by the Analyzer won't be shown.
3	Viewpoint GUI shows Storage System instances, but status of Storage System instances are <i>Unknown</i>	<ul style="list-style-type: none"> • ETL fails to get performance data from some RAID Agent instances because the web service of RAID Agent has been stopped. • RAID Agent fails to collect performance data from a Storage System or has been stopped.

5.1.1 Viewpoint GUI does not show *any* Storage System instances

When a user logs in to Viewpoint, the GUI does not show *any* Storage System instances like Fig. 5.1.

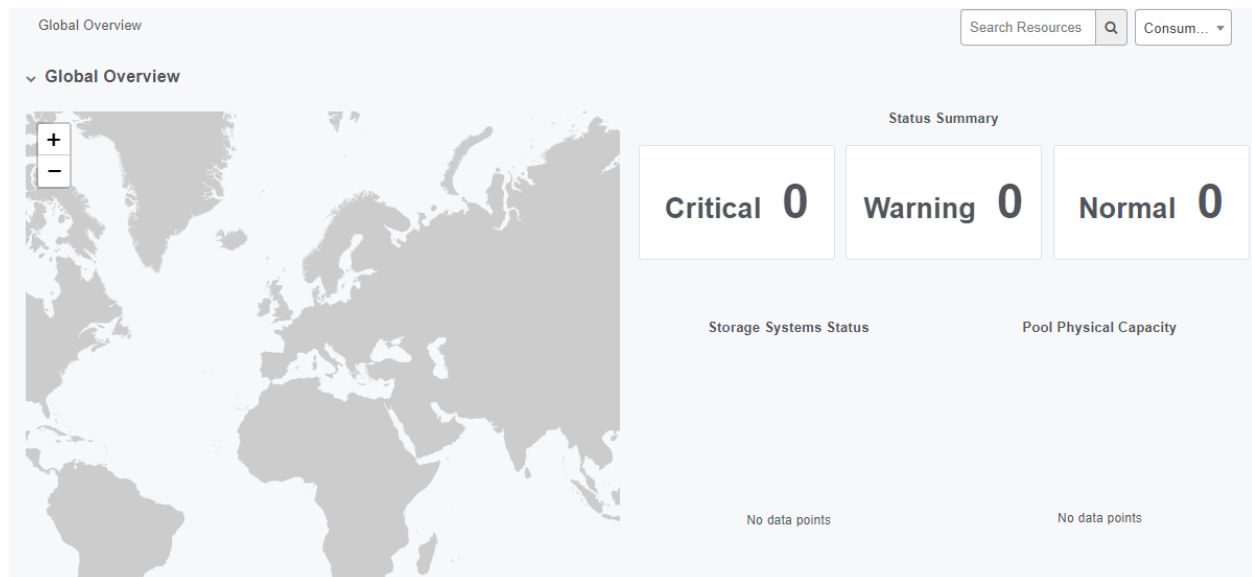


Fig. 5.1: Viewpoint does not show any Storage System instances

In this case, ETL failed probably, so check a log file of ETL. The location of ETL log file is <extracted_diag_dir>/log/etl/.

```
# less ./log/etl/2020_09_25.0.log
2020/09/25 10:49:48.387 [main] ERROR com.hitachi.software.ias.spectre.core.etlctl.iaa.notifier.EtlResultNotifier - KNAQ60011-
↳ E An error occurred communicating with the Common Services. (cause:"400 Bad Request
failed to load payload") Check the network and Common Services status and try again. If the same error occurs, use the data_
↳ collection tool to collect the necessary data, and then contact your system administrator.
```

Note: `./(Current directory)` is a directory which is extracted the diag file.

The log shows *KNAQ60011-E An error occurred communicating with the Common Services*, because Common Services might be stopped at 2020/09/25 10:49:48.387. To confirm that, please see the Common Services Troubleshooting Guide.

5.1.2 Viewpoint GUI shows Storage System instances, but status of Storage System instances are *Unknown* - Case (a)

When a user login to Viewpoint, the GUI shows *Unknown* status like Fig. 5.2..



Fig. 5.2: Viewpoint shows *Unknown* status

The *Storage System Status* panels show instance name of RAID Agent instances and its status. In this example, the status of *VSP_53038* is *Unknown*. In this case, some error occurred during ETL processing or RAID Agent has been failed to collect performance data from a Storage System.

1. Check the logs of ETL

Check the ETL logs whether some error occurred during ETL processing.

```
# cat ./log/etl/2019_09_26.0.log | grep -i -e error -e exception
#
```

In this example, there are no error related to *VSP_53038* in the ETL logs, then RAID Agent probably has been failed to collect performance data from a Storage System.

Note: *./(Current directory)* is a directory which is extracted the diag file.

2. Check the logs of RAID Agent

Check the RAID Agent logs whether the RAID Agent instance collect performance data successfully.

```
# less ./agtd.agtras/localhost/VSP_53038/jpctdchkinst.log
KAVF18800-I The verification of the agent instance settings will now start. (instance name=VSP_53038)
[Instance parameters]
Access Type : Command-Device and SVP
Serial No : 53038
Command Device File Name : /dev/disk/by-id/wwn-XXXXXXXXXXXXXXXXX
Unassigned Open Volume Monitoring : Y
Mainframe Volume Monitoring : Y
SVP IP Address or Host Name : YYYYYYYYYY
Storage User ID for SVP : ZZZZZZZZZZZ
Details of storage model : VSP
SVP Port No : 1099
Java VM Heap Memory setting Method : by maximum number of LDEVs
Maximum number of LDEVs : 4000
[Check result]
KAVF18837-I The instance is configured so that performance data is collected without using a REST-API connection.
KAVF18817-E An error was found during verification of the collection of performance data by using a command device.
KAVF18851-E An attempt to access the device set by the agent instance parameter has failed. (parameter name=Command Device,
↪File Name, parameter value=/dev/disk/by-id/wwn-XXXXXXXXXXXXXXXXX)
KAVF18818-E An error was found during verification of the collection of performance data over a TCP/IP connection.
KAVF18822-E An attempt to login to the storage system has failed. (user=ZZZZZZZZZZ)
KAVF18801-I The verification of the agent instance settings will now end.
```

Note: *./(Current directory)* is a directory which is extracted a tar.gz file collected by **jpccras**.

In this example, the RAID Agent instance configuration was not correct, then please ask a user to revise the configuration. See the Troubleshooting Guide of Tuning Manager for details.

5.2 The status of Analyzer viewpoint shows "Unknown" on Common Services screen.

When a user specifies a host name of Common Services to *setupcommonservice*, communication with Common Services might fail and the following behaviors might occur:

- On the Products window of Ops Center Portal, Analyzer viewpoint status shows "Unknown"
- In Analyzer viewpoint license GUI, "No data for table" is displayed in the Current Licenses area
- Analyzer and Analyzer Detail View launch fails from Analyzer viewpoint GUI
- Analyzer viewpoint GUI "Search Resources" fails
- Unable to collect performance data

This behavior may also occur after the upgrade.

In these cases, the following steps may resolve the issue: Edit the hosts file so that the Common Services can be accessed by using its host name. If Analyzer viewpoint was installed by using the OVF, edit the hosts file by running the edit-hosts command, which is stored in the `/opt/hitachi/analyzer_viewpoint/bin` directory.

This setting should be set even if Common Services and Analyzer viewpoint are installed on the same host.

6 Appendices

6.1 Forcibly uninstalling Viewpoint

If the results of the investigation by the support department indicate that a forced uninstallation is required, remove Viewpoint 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 Viewpoint host.
- root privilege is required to perform the procedure.

1. Stop Viewpoint service if the service exists.

```
systemctl stop analyzer-viewpoint.target
```

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

2. Remove Viewpoint internal components.

```
rpm -qa | grep analyzer_viewpoint_ | xargs -p rpm -evh --nodeps
```

This command shows the RPMs which will be removed.

Confirm that the shown packages are Viewpoint internal RPMs, then press **y** to continue.

If the shown packages contain any package which is not Viewpoint internal RPMs, then press **n** to cancel and manually remove Viewpoint internal RPMs one by one.

Viewpoint internal RPMs:

- analyzer_viewpoint_orion_cs_util-X.Y.Z-0.x86_64
- analyzer_viewpoint_apigw-X.Y.Z-0.x86_64
- analyzer_viewpoint_etl-X.Y.Z-0.noarch
- analyzer_viewpoint_api_proxy-X.Y.Z-0.x86_64
- analyzer_viewpoint_product-X.Y.Z-0.x86_64
- analyzer_viewpoint_base-X.Y.Z-0.x86_64
- analyzer_viewpoint_metrics_db-X.Y.Z-0.x86_64
- analyzer_viewpoint_iaa_launcher-X.Y.Z-0.x86_64
- analyzer_viewpoint_inventory-X.Y.Z-0.x86_64
- analyzer_viewpoint_license_manager-X.Y.Z-0.x86_64

- analyzer_viewpoint_webconsole-X.Y.Z-1.x86_64

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

3. Remove directories and files of Viewpoint

```
rm -rf /opt/hitachi/analyzer_viewpoint
rm -rf /var/opt/hitachi/analyzer_viewpoint
rm -rf /var/log/hitachi/analyzer_viewpoint
rm -rf /etc/systemd/system/analyzer-viewpoint-webconsole.service.d
rm -f /etc/logrotate.d/analyzer-viewpoint-webconsole
```

4. Delete OS users created by Viewpoint

```
userdel -r analyzer
userdel rattlesnake
```

Note: If the user does not exist, the userdel command fails. You can ignore the error in that case.

6.2 How to change the password of the truststore which is initialized by config-cert command

If user forgot the password, it can be reset by the following procedure. The registered certificates will be kept when the user reset the password.

1. Remove the truststore of the Analyzer Viewpoint.

```
rm -f /var/opt/hitachi/analyzer_viewpoint/etl/trust/truststore
```

2. Recreate a truststore with registered certificates.

```
/opt/hitachi/analyzer_viewpoint/bin/config-cert --sync
```

Note: You can enter a new password when you run the command.