Oracle Autonomous Health Framework Fleet Insights User's Guide

F96585-06
April 2025

Oracle Autonomous Health Framework Fleet Insights User's Guide ,

F96585-06

Primary Author: Nirmal Kumar

Contributing Authors: Arjun Upadhyay, Deepak Mecheri , Gareth Chapman , Priyank Mehra , Rishabh Bhardwaj , Sai Chiranjeevi Konapala , Troy Anthony

Contents

Changes in this Release

This preface lists changes in the Oracle Autonomous Health Framework Fleet Insights User's Guide 25.1.0.0.

- Single-Instance Support
  AHF Fleet Insights now supports single-instance systems.
- Event Time in Events Drilldown Tables
  Event analysis and diagnostics have been improved with the introduction of precise timestamps in the Events Drilldown Tables.
- Configurable Session Timeout
  AHF Fleet Insights now offers configurable session timeouts, providing a balance between enhanced security and improved user experience.
- Prioritized Collection Purging
  AHF Fleet Insights now features an improved data purging policy that intelligently prioritizes which collections to retain, ensuring more useful data remains available for longer.
- Support for Custom Installation Temp Directory
  The AHF Fleet Insights installer now supports the `AHFFI_TMP_DIR` environment variable, allowing users to specify a custom directory for storing temporary files during installation.

Single-Instance Support

AHF Fleet Insights now supports single-instance systems.

Many organizations use a mix of clustered and single-instance databases. Previously, AHF Fleet Insights supported only clustered environments.

With this release, AHF Fleet Insights expands its capabilities to include the registration and management of single-instance systems.

To register a single-instance system, use the standard registration command:

```
ahf configuration set --type fleet-insights --user-name <registration_user> --
url <ahffi_app_url>
```

Event Time in Events Drilldown Tables

Event analysis and diagnostics have been improved with the introduction of precise timestamps in the Events Drilldown Tables.

Knowing exactly when an event occurred is essential for diagnosing issues and reconstructing system activity timelines. A new Event Time column has been added to the Events Drilldown Tables, offering detailed timing information for each event. This enhancement significantly improves visibility into system behavior, enabling more accurate diagnostics, auditing, and event correlation.

With this feature, users can more easily identify patterns, understand the sequence of critical events, and gain deeper insights into their system's operational history.

How to View the Event Time:

1. From the Home page, set your desired time range using the filter.
2. Click the Events panel to open the Events page.
3. On the Events page, click any chart or table entry to drill down into a specific event type.
4. The Events Drilldown Table at the bottom of the page now includes the new Event Time column.

Configurable Session Timeout

AHF Fleet Insights now offers configurable session timeouts, providing a balance between enhanced security and improved user experience.

Previously, sessions were limited to a fixed 30-minute timeout, often resulting in users being logged out and needing to re-authenticate. With this update, administrators can now customize session timeout durations based on their organization's security policies and operational requirements—up to a maximum of 24 hours (1440 minutes).

This flexibility ensures uninterrupted access for longer tasks while still allowing organizations to enforce session expiration for security compliance.

How to Set the Session Timeout

You can configure the session timeout either via the command line or the web interface:

- Command Line:

  ```
  ahffi updateproperty -k TIMEOUT -v <minutes>
  ```

- Web Interface:
  1. Click your login name at the top right corner of the Fleet Insights web application.
  2. Select **Admin**.
  3. Go to **Configurations** and set the desired timeout value.

Prioritized Collection Purging

AHF Fleet Insights now features an improved data purging policy that intelligently prioritizes which collections to retain, ensuring more useful data remains available for longer.

Automated purging of older collections is critical for optimizing storage and maintaining system performance. With this enhancement, AHF Fleet Insights refines its approach by assigning higher deletion priority to:

- Older collections
- Collections not actively used by the user interface

This means more recent and relevant data is preserved longer, giving users better access to the information that matters most—especially during troubleshooting or historical analysis.

No configuration is necessary—this enhancement is automatically applied and requires no user action.

Support for Custom Installation Temp Directory

The AHF Fleet Insights installer now supports the `AHFFI_TMP_DIR` environment variable, allowing users to specify a custom directory for storing temporary files during installation.

By default, the installer writes temporary files to the `/tmp` directory. However, this location may not always be suitable—particularly in environments with limited disk space or restrictive permissions.

To address this, users can now redirect temporary file storage to an alternative location by setting the `AHFFI_TMP_DIR` environment variable before running the installer.

Before running the installer, specify a custom temporary directory by exporting `AHFFI_TMP_DIR=<TEMP_DIR_PATH>`.

1

Get Started

- What is AHF Fleet Insights?
  AHF Fleet Insights enables you to efficiently oversee and diagnose a fleet of database systems, ensuring seamless and reliable database services for users. A fleet refers to a collection of database clusters or single-instance systems.
- Prerequisites
  Review the prerequisites to install and use AHF Fleet Insights on various supported platforms.
- Users and Privileges
  Review the list of users and their privileges.
- Supported Platforms
  Review the list of supported platforms.
- Recommended Browsers
  Review the list of recommended browsers.
- Deploy AHF Fleet Insights
  Learn to deploy AHF Fleet Insights.
- Import SSL Certificates
  To import and use custom-SSL certificates other than the default one created during installation, use this procedure.
- Update Properties
  To update a property or a set of properties, use this procedure.
- Diagnose AHF Fleet Insights
  The diagnose tool helps you collect diagnostic data on-demand to debug and maintain AHF Fleet Insights.
- Uninstall AHF Fleet Insights
  Learn to uninstall AHF Fleet Insights.
- Security Best Practices for AHF Fleet Insights
  Review the key security measures to secure the AHF Fleet Insights application, including changing default credentials, managing SSL certificates, enforcing file permissions, and ensuring Nginx FIPS compliance.

1.1 What is AHF Fleet Insights?

AHF Fleet Insights enables you to efficiently oversee and diagnose a fleet of database systems, ensuring seamless and reliable database services for users. A fleet refers to a collection of database clusters or single-instance systems.

Fleet Analytics

AHF Fleet Insights provides an aggregated view of the entire fleet based on various dimensions:

- Topology: Understand the structure of your fleet, including the type of clusters (RAC, ODA, Exadata).

- Server Configurations: Get details on server configurations, such as database versions and hardware models of database and storage servers.
- Insight Dimensions: Analyze insights gathered from different clusters, such as top events, best practice compliance issues, and operating system issues.

These analytics help in:

- Identifying and resolving issues.
- Optimizing performance.
- Improving management and security of the fleet.

Root Cause Analysis

- Observe major issues at the fleet level.
- Drill down to their respective root causes by exploring dashboards.
- Narrow down to specific insight reports as needed.

Diagnostic Data Access

To prevent data loss due to retention period constraints, AHF Fleet Insights:

- Provides a centralized system to store and retain diagnostic insights for an extended period.
- Ensures critical diagnostic information is preserved and accessible when issues arise.

1.2 Prerequisites

Review the prerequisites to install and use AHF Fleet Insights on various supported platforms.

- **Minimum recommended system resources:**
  - 4 Cores
  - 16 GB RAM
  - 4 GB disk space per registered cluster

  A dedicated server is not mandatory, but it would improve performance. Running other applications on the same server could cause interference and impact the performance.
- **Installing necessary software dependencies**
  - Java
    Go to https://www.oracle.com/in/java/technologies/downloads/ and download Java (22 or above).

    For example:

    ```
    sudo yum install https://download.oracle.com/java/23/latest/
    jdk-23_linux-x64_bin.rpm
    ```

  - Instant client and SQL*Plus
    Go to https://www.oracle.com/in/database/technologies/instant-client/linux-x86-64-downloads.html and download the latest version of Basic and SQL*Plus packages for your operating system.

For example if you are running Oracle Linux 8:

```
sudo yum install https://download.oracle.com/otn_software/linux/
instantclient/2340000/oracle-instantclient-
basic-23.4.0.24.05-1.el8.x86_64.rpm
```

```
sudo yum install https://download.oracle.com/otn_software/linux/
instantclient/2340000/oracle-instantclient-
sqlplus-23.4.0.24.05-1.el8.x86_64.rpm
```

For example if you are running Oracle Linux 7:

```
sudo yum install https://download.oracle.com/otn_software/linux/
instantclient/2114000/oracle-instantclient-
basic-21.14.0.0.0-1.x86_64.rpm
```

```
sudo yum install https://download.oracle.com/otn_software/linux/
instantclient/2114000/oracle-instantclient-
sqlplus-21.14.0.0.0-1.x86_64.rpm
```

- **Additional mandatory software dependencies**

> **Note:**
>
> Ensure that the following packages are included in your environment, as they are crucial for a successful installation and the smooth operation of the application.

  - `sudo yum install cronie`

    The command `sudo yum install cronie` installs the `Cronie` package, which provides the `cron` daemon on Linux. This daemon allows users to schedule automated tasks, or "`cron jobs`," to run at specified times, useful for routine maintenance, backups, and other recurring tasks.

  - `sudo yum install iproute`

    The command `sudo yum install iproute` installs the `iproute` package on Linux, which provides network management tools like `ip`. These tools are used to configure and control networking features such as IP addresses, routes, network interfaces, and traffic control, essential for network setup and troubleshooting.

  - `sudo yum install hostname`

    The command `sudo yum install hostname` installs the `hostname` package on Linux, which provides tools to view and set the system's hostname. This is essential for identifying the machine on a network, configuring network settings, and managing server or device names.

- **Fleet Insights Database Schema Owner:**

Create a database user dedicated for AHF Fleet Insights using the `create_db_user.sql` script. This script is included in the installer zip file. The default user name is `AHFFI`. Replace the password placeholder in the script with the actual password you want to set and grant the appropriate privileges.

```
CREATE USER AHFFI IDENTIFIED BY <password> DEFAULT TABLESPACE <tablespace>;
GRANT CREATE SESSION TO AHFFI;
GRANT CONNECT, RESOURCE TO AHFFI;
GRANT CREATE TABLE TO AHFFI;
GRANT INSERT ANY TABLE TO AHFFI;
alter user AHFFI quota unlimited on <tablespace>;
```

For more information about updating the password, refer to ahffi.

- **Database connection string:**
  A valid database connection string to connect to Oracle Database (minimum version 19c).
- **Nginx server port:**
  The Nginx server is used to serve the application, and its port is configured during the AHF Fleet Insights installation. The application will run on the port you specify within the range of 1024 to 49151.

> **Note:**
>
> If Oracle Database 23ai is used as the infrastructure repository database, then it does not require an additional license. For more information, see Special License Rights in the Oracle Database Licensing Information User Manual. Oracle Database 23ai can be downloaded from https://www.oracle.com/uk/database/free/

1.3 Users and Privileges

Review the list of users and their privileges.

- **Fleet Admin:** Responsible for managing the fleet of database systems.
- **DBA:** Responsible for maintaining, troubleshooting, and fixing a specific set of database clusters of the fleet.
- **INSTALL_USER:** Any Linux non-root user can install the application.

> **Note:**
>
> `sudo` privileges are not required for this user to install the application. The installer will fail if run with `root` privileges.

- **User interface users:**
  - **Admin user:** A default user interface admin user `fleet_admin` is created while installing the application. This user will have access to all data across the fleet.
  - **Cluster manager:** Access is restricted to the data collected from the clusters assigned to the user.

- **Generic Client Registration User:** This user is required for registering client clusters for uploading Oracle Trace File Analyzer / Oracle Exachk / Oracle Orachk collections.

1.4 Supported Platforms

Review the list of supported platforms.

AHF Fleet Insights is supported on the following operating systems:

- Oracle Enterprise Linux (OEL)
- Red Hat Enterprise Linux (RHEL)
- Supported architecture: x86_64

1.5 Recommended Browsers

Review the list of recommended browsers.

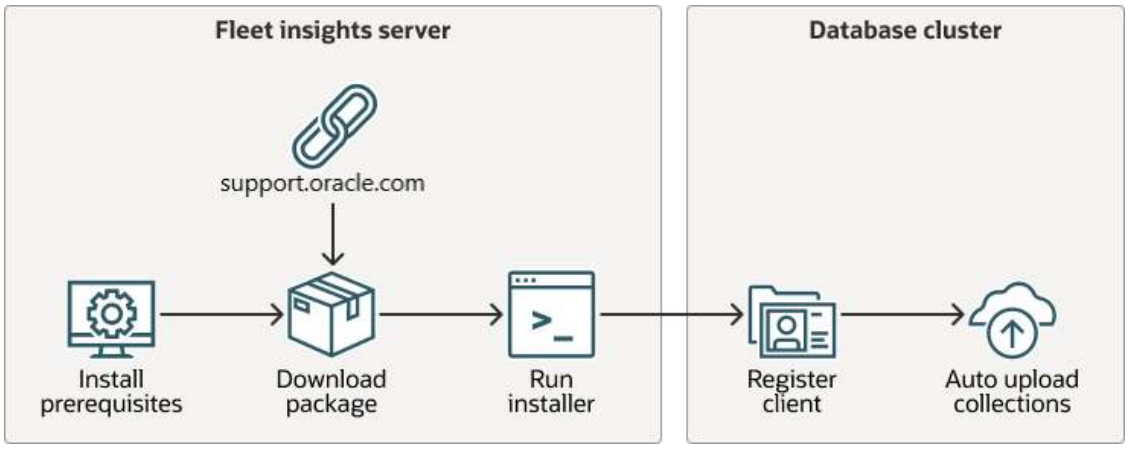
The reports are rendered best in the newest and last 5 prior versions of the following browsers:

- Microsoft Internet Explorer (latest, latest minus 5)
- Microsoft Edge (latest, latest minus 5)
- Google Chrome (latest, latest minus 5)
- Mozilla Firefox (latest, latest minus 5)
- Apple Safari (latest, latest minus 5)

1.6 Deploy AHF Fleet Insights

Learn to deploy AHF Fleet Insights.

Figure 1-1 AHF Fleet Insights deployment process



Deploying AHF Fleet Insights involves the following steps:

1. Install all the Prerequisites.
2. Download the AHF Fleet Insights package `AHFFI-LINUX_v24.2.0.zip`.

3. Run the AHF Fleet Insights installer `ahf_fleet_setup`.
4. Register client clusters to the AHF Fleet Insights server.
5. Set up automatic collection upload from the registered clusters to the AHF Fleet Insights server.

- Install and Patch AHF Fleet Insights
  Learn to install and patch AHF Fleet Insights on various supported platforms.
- Create Generic Registration User
  To create a generic registration user if it was not created during installation, follow these steps:
- Register Client Clusters to AHF Fleet Insights Server
  To automatically upload Oracle Exachk, Oracle Orachk, and Oracle Trace File Analyzer collections to the AHF Fleet Insights server, register AHF client clusters with the AHF Fleet Insights server. AHF Fleet Insights then processes these data collections to provide an organized and insightful summary.
- Deregister Client Clusters from AHF Fleet Insights Server
  Deregister AHF client clusters from the AHF Fleet Insights server to prevent them from automatically uploading Oracle Exachk, Oracle Orachk, and Oracle Trace File Analyzer collections.

1.6.1 Install and Patch AHF Fleet Insights

Learn to install and patch AHF Fleet Insights on various supported platforms.

> **Note:**
>
> - Any Linux non-root user can install AHF Fleet Insights.
> - A self-signed SSL certificate (**Key type**: RSA, **key length**: 4096) is dynamically created during install time for securing HTTPS connection.
>   You have an option to substitute the default certificate with your own through the command-line interface. For more information, see ahffi.
> - The default port for installation is 5005, unless specified by the user. The valid port range is 1024 to 49151. If the specified port is not available, the AHF Fleet Insights application will fail to install.

1. Download AHF Fleet Insights binary `AHFFI-LINUX_v25.1.0.zip` from My Oracle Support note 3043060.1.
2. Unzip `AHFFI-LINUX_v25.1.0.zip`.

   ```
   unzip AHFFI-LINUX_v25.1.0.zip
   ```

   Find the following files in the unzipped directory.

   - `README.txt`: Contains commands to validate the binary, setup prerequisites, and install Fleet Insights application.
   - `ahf_fleet_setup_onprem.dat`, `oracle-ahffi.pub`: Files to verify the digital signature of the binary.

- `ahf_fleet_setup_onprem.zip`: Installer zip.

3. Validate the installer binary using the command mentioned in the `README.txt` file.
4. Unzip `ahf_fleet_setup_onprem.zip`.
   Find the following files in the unzipped directory.
   - `ahf_fleet_setup`: Installer binary.
   - `connectstring.txt`: A template for the database connection string. You can modify this file as needed and pass it as an argument during installation.
   - `create_db_user.sql`: This SQL script creates a new database user (with a default username of AHFFI) and grants the necessary privileges. The user is required to replace the password placeholder with a secure password.
   - `properties.txt`: A template for configuration properties. You can modify this file and pass it as an argument during installation when using the `-quiet` mode.
   - `version.json`: Contains version info. DO NOT edit this file.
   - `installer_utils.sh`: Utility file for the installer. DO NOT edit this file.
5. During installation, you will be prompted to enable or disable ClamAV, open-source antivirus engine used for detecting trojans, viruses, malware, and other malicious threats to sanitize collections. Download ClamAV from https://www.clamav.net/ and set it up.

   > **Caution:**
   >
   > Enabling ClamAV is optional, but doing so will result in increased processing time.

6. To install AHF Fleet Insights, run:

   ```
   ./ahf_fleet_setup -loc <install loc>
   ```

   > **Note:**
   >
   > By default, the AHFFI installer uses `/tmp` as the staging location during installation. If you prefer to use a different location, you can set the `AHFFI_TMP_DIR` environment variable to the desired path before running the installer.

7. To install AHF Fleet Insights in quiet mode with the property file, run:

   ```
   ./ahf_fleet_setup -quiet <properties file>
   ```

8. To patch AHF Fleet Insights, run:

   ```
   ./ahf_fleet_setup
   ```

For more information about install options, see ahf_fleet_setup.

Properties

Mandatory properties

- `INSTALL_DIR/<install loc>`: Installation directory must be present and accessible by the install user.
- `DB_HOST`: Database hostname.
- `DB_PORT`: Database port.
- `DB_SERVICE`: Database service name.
- `DB_USER`: Database username.
- `DB_PASSWORD`: Database password.
- `INSTANT_CLIENT`: Path to instant client.
- `JAVA_HOME`: Path to Java home.

Optional properties

- `WEBAPP_PORT`: The port on which the application will run (must be within the range of 1024 - 49151). This port must be open to allow the AHF Client to register successfully.
- `DB_WALLET`: DB wallet path if the connection requires it.
- `GENERIC_REGISTRATION_USER`: The API admin username (can be created from the unified command-line interface as well).
- `GENERIC_REGISTRATION_PASSWORD`: The API admin user password. The API admin user password. It must be at least 8 characters long and include at least one numeric digit, one special character, and one uppercase letter.
- `CLAMSCAN`: Path to `clamscan`. If mentioned, collections will be scanned for infected files. Note that scanning for infected files would increase the collection processing time.

> **Note:**
>
> - If both `GENERIC_REGISTRATION_USER` and `GENERIC_REGISTRATION_PASSWORD` are provided, the generic registration user will be created automatically at the end of a successful installation.
> - Sensitive data like passwords are removed from the properties file and other files once installation is successfully completed.

Example 1-1 Property file

```
# Mandatory
INSTALL_DIR=/scratch/ahfs_local/install_test
DB_HOST=<your hostname.domainname>
DB_PORT=1555
DB_SERVICE=<your DB service URL>
DB_USER=ahffi_testuser
DB_PASSWORD=*******
INSTANT_CLIENT=/usr/lib/oracle/23/client64
JAVA_HOME=/usr/lib/jvm/jdk-23.0.2-oracle-x64

# Optional
WEBAPP_PORT=5000
DB_WALLET=
```

```
GENERIC_REGISTRATION_USER=
GENERIC_REGISTRATION_PASSWORD=
```

1.6.2 Create Generic Registration User

To create a generic registration user if it was not created during installation, follow these steps:

> **Note:**
>
> The generic registration user can be created either during installation or after the installation is complete.

To create a generic registration user, run:

1. `cd <install_dir>`
2. `./ahffi create-generic-user <user name>`

Enter the password when prompted.

> **Note:**
>
> The password must be at least 8 characters long and include at least one numeric digit, one special character, and one uppercase letter.

Example 1-2 Registration user

```
./ahffi create-generic-user admin
Generic registration password:
Enter generic registration password again
Generic registration password:

Generic registration user admin created
```

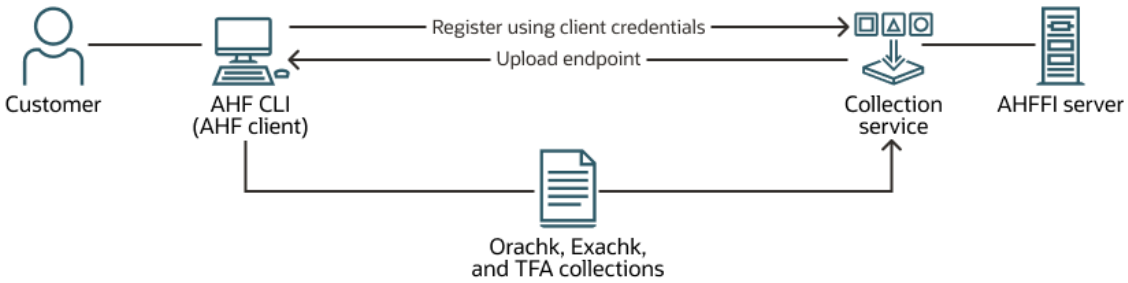
Related Topics

- ahffi
  Use the `ahffi` command to manage AHF Fleet Insights.

1.6.3 Register Client Clusters to AHF Fleet Insights Server

To automatically upload Oracle Exachk, Oracle Orachk, and Oracle Trace File Analyzer collections to the AHF Fleet Insights server, register AHF client clusters with the AHF Fleet Insights server. AHF Fleet Insights then processes these data collections to provide an organized and insightful summary.

Figure 1-2 Register AHFFI Clients



> **Note:**
>
> - Ensure that the port where AHF Fleet Insights is set up on the server is open, allowing the AHF client to register successfully.
> - AHF Fleet Insights web application port must be exposed and accessible by the AHF Client system.
> - AHF Client must be running AHF 24.9 or above.
> - AHF Client must be running on a cluster.
> - If you are a Platinum customer and AHF collections/data are being uploaded to the Platinum Gateway, please do not change the upload configurations for the Platinum user.
> - To upload results to AHF Fleet Insights, you can configure the upload as the root user. AHF is capable of uploading data to multiple endpoints.

1. To fetch the registration command, run `ahffi info` from the install directory:

   ```
   ./ahffi info
   Application URL : https://demo.oracle.system.com:5000/ahfservice
   Registration command : ahf configuration set --type fleet-insights --user-
   name <generic_registration_user> --url https://demo.oracle.system.com:5000
   ```

   To create generic registration user, see Create Generic Registration User.

2. To register client clusters to AHF Fleet Insights server tool, run the registration command as `root` on the AHF Client:

   ```
   ahf configuration set --type fleet-insights --user-name
   <generic_registration_user> --url https://demo.oracle.system.com:5000
   ```

   > **Note:**
   >
   > Replace the registration user name placeholder.

After successful registration, registered client clusters will automatically upload collections to AHF Fleet Insights. Oracle Trace File Analyzer collections with Insights can also be accessed directly from the AHF Fleet Insights web interface.

1.6.4 Deregister Client Clusters from AHF Fleet Insights Server

Deregister AHF client clusters from the AHF Fleet Insights server to prevent them from automatically uploading Oracle Exachk, Oracle Orachk, and Oracle Trace File Analyzer collections.

1. To deregister a client cluster from the AHF Fleet Insights server, run the following command with `root` privileges on the AHF Client.

```
ahf configuration unset --type fleet-insights
Successfully deregistered.
```

1.7 Import SSL Certificates

To import and use custom-SSL certificates other than the default one created during installation, use this procedure.

> **Note:**
>
> A self-signed SSL certificate (**Key type:** RSA, **key length:** 4096) is dynamically created during install time for securing HTTPS connection.
> You have an option to substitute the default certificate with your own through the command-line interface. For more information, see ahffi.

To import SSL certificates, run:

```
./ahffi importcert -cert <cert file> -key <key file>
```

The application restarts automatically after you import custom SSL certificates.

Example 1-3 Import SSL certificates

```
./ahffi importcert -cert /scratch/certs/ahf.crt -key /scratch/certs/ahf.key
2023-08-14 09:44:18 UTC: [testnode] [2832363] [UPDATE_PROPERTIES] [INFO] Path
to the input properties file provided as : /scratch/ahfs_local/install_test/
ahf_service.properties.1692006258
2023-08-14 09:44:22 UTC: [testnode] [2832363] [UPDATE_PROPERTIES] [INFO]
nginx: the configuration file /scratch/ahfs_local/install_test/ahf_service/
third_party/nginx/conf/ahfs_nginx_with_ssl.conf syntax is ok
2023-08-14 09:44:22 UTC: [testnode] [2832363] [UPDATE_PROPERTIES] [INFO]
nginx: configuration file /scratch/ahfs_local/install_test/ahf_service/
third_party/nginx/conf/ahfs_nginx_with_ssl.conf test is successful
Restarting the application...
2023-08-14 09:44:23 UTC: [testnode] [2833231] [MANAGE_APP] [INFO] Component
chosen as all
2023-08-14 09:44:23 UTC: [testnode] [2833231] [MANAGE_APP] [INFO] Action
chosen as restart
```

```
2023-08-14 09:44:23 UTC: [testnode] [2833231] [MANAGE_APP] [INFO]
Successfully removed job(s) for all from crontab
2023-08-14 09:44:28 UTC: [testnode] [2833231] [MANAGE_APP] [INFO] Killed the
existing Fleet Insights processes
2023-08-14 09:44:32 UTC: [testnode] [2833231] [MANAGE_APP] [INFO] Killed the
existing collection processing engine processes
2023-08-14 09:44:33 UTC: [testnode] [2833231] [MANAGE_APP] [INFO] Killed the
existing ahf_service processes for component(s): all.
2023-08-14 09:44:33 UTC: [testnode] [2833231] [MANAGE_APP] [INFO] Starting
Fleet Insights
2023-08-14 09:44:37 UTC: [testnode] [2833231] [MANAGE_APP] [INFO] Started
Fleet Insights successfully
2023-08-14 09:44:37 UTC: [testnode] [2833231] [MANAGE_APP] [INFO] The path to
manage_app.log is /scratch/ahfs_local/install_test/ahf_service/log/
manage_app.log
2023-08-14 09:44:37 UTC: [testnode] [2833231] [MANAGE_APP] [INFO] The path to
nginx access.log is /scratch/ahfs_local/install_test/ahf_service/third_party/
nginx/logs/access.log
2023-08-14 09:44:37 UTC: [testnode] [2833231] [MANAGE_APP] [INFO] Starting
the collection processing engine
2023-08-14 09:44:38 UTC: [testnode] [2833231] [MANAGE_APP] [INFO] Collection
processing engine is running
2023-08-14 09:44:38 UTC: [testnode] [2833231] [MANAGE_APP] [INFO] Started the
collection processing engine successfully
2023-08-14 09:44:38 UTC: [testnode] [2833231] [MANAGE_APP] [INFO]
Successfully added job(s) for all from crontab
2023-08-14 09:44:38 UTC: [testnode] [2833231] [MANAGE_APP] [INFO] Started the
ahf_service processes for component(s): all.
Successfully imported the certificates
```

Related Topics

- ahffi
  Use the `ahffi` command to manage AHF Fleet Insights.

1.8 Update Properties

To update a property or a set of properties, use this procedure.

> **Note:**
>
> You might need to restart the application for some updates to take effect.

To update a property, run:

```
./ahffi updateproperty -k <key> -v <value>
```

Set of keys that can updated:

- DB_HOST=
- DB_PORT=
- DB_SERVICE=

- DB_USER=
- DB_PASSWORD=
- WEBAPP_PORT=
- DB_WALLET=
- INSTANT_CLIENT=<*path*>
- JAVA_HOME= <*path*>
- CLAMSCAN= <*path to clamscan folder*>
- LOG_RETENTION
  The number of days a log file will be retained after its last edited date.
- MAX_COLLECTION_DIR_SIZE
  Maximum size (GB) for the collections directory. If exceeded, old collections will be deleted.
- CLIENT_KEY_EXPIRY_IN_DAYS
  Client needs to reset password after this (in days) expiry.
- GRACE_PERIOD_IN_DAYS
  Client must reset password before the grace period (in days) ends after expiry to avoid getting deregistered.
- COLLECTION_UPLOAD_LIMIT
  Total collection(s) size (GB) that can be uploaded in an hour.

To update a set of properties, run:

```
./ahffi updateproperty -p <property file>
```

Add a list of properties you want to update to a text file and then use that text file to update the properties.

For example:

```
DB_HOST="<your hostname.domainname>"
DB_PORT="1555"
DB_SERVICE="<your DB service URL>"
DB_USER="ahffi_testuser"
DB_PASSWORD="*******"
JAVA_HOME="/usr/lib/jvm/java-11-openjdk-11.0.19.0.7-4.0.1.el8.x86_64"
INSTANT_CLIENT="/usr/lib/oracle/21/client64"
```

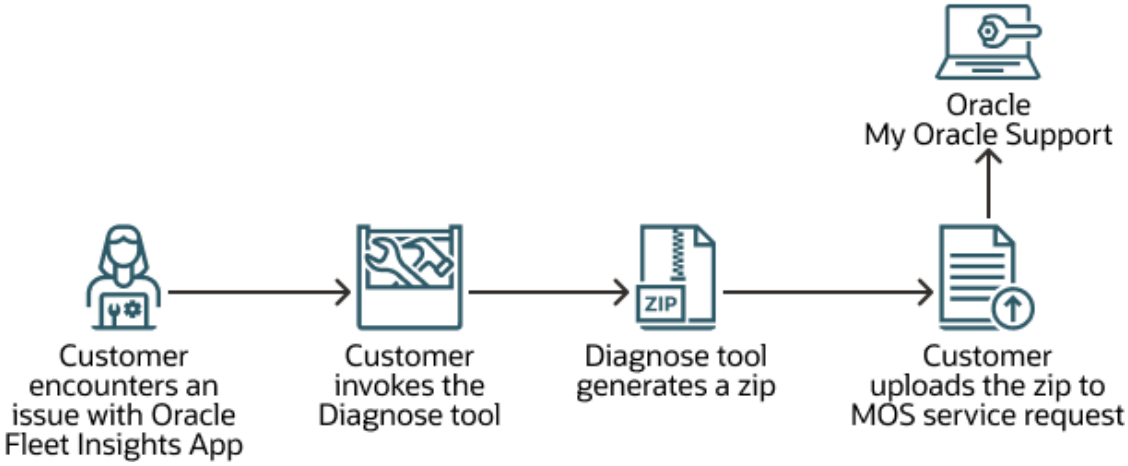
Related Topics

- Install and Patch AHF Fleet Insights
  Learn to install and patch AHF Fleet Insights on various supported platforms.
- ahf_fleet_setup
  Use the `ahf_fleet_setup` command to install or patch AHF Fleet Insights.

1.9 Diagnose AHF Fleet Insights

The diagnose tool helps you collect diagnostic data on-demand to debug and maintain AHF Fleet Insights.

Figure 1-3 Diagnose AHF Fleet Insights



This diagnostic data includes:

- Application logs
- Processing engine logs
- Operating system related details (disk space, #process, and so on)
- Nginx configuration file and logs
- Source environment and properties file
- Plugin logs
- Individual processing stage logs

You can run the diagnostic component through the command-line interface.

- `./ahffi diagnose`

  Collects application logs and creates a zip file that can be used to diagnose errors in the Fleet Insights application.

- `./ahffi diagnose --collection <collection_id>`

  Includes additional collection-specific logs (logs generated while processing the collection) along with all of the above logs.

1.10 Uninstall AHF Fleet Insights

Learn to uninstall AHF Fleet Insights.

Uninstall options:

- `-q`: Uninstalls the application in [q]uiet mode (no prompts, default options are to keep backup).
- `-qc`: Uninstalls the application in [q]uiet mode and [c]leanup all AHF Fleet Insights related files and database entries in quite mode.

- `-qb`: Uninstalls the application in [q]uiet mode and keep a [b]ackup in the database

If you run `./ahffi uninstall` without any options, you will be prompted to enter the following:

```
clean DB object [y/n]
retain backup [y/n]


./ahffi uninstall -qc
Uninstalling AHF service in quiet mode
Database objects will be cleaned as part of this uninstallation
No install directory, considering /scratch/ahfs_local/install_test as the
install directory
Removing installation from /scratch/ahfs_local/install_test/
2023-08-14 10:07:10 UTC: [testnode] [3014990] [UNINSTALL_AHFS] [INFO]
Uninstalling AHF Service
2023-08-14 10:07:10 UTC: [testnode] [3014990] [UNINSTALL_AHFS] [INFO]
Cleaning AHF Service database objects

SQL*Plus: Release 21.0.0.0.0 - Production on Mon Aug 14 10:07:10 2023
Version 21.10.0.0.0

Copyright (c) 1982, 2022, Oracle.  All rights reserved.

Last Successful login time: Mon Aug 14 2023 10:07:10 +00:00

Connected to:
Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production
Version 19.17.0.0.0

SQL>   2    3    4    5    6    7    8    9   10   11   12   13   14   15
16   17   18   19   20   21   22   23   24   25   26   27   28   29   30
31   32   33   34
PL/SQL procedure successfully completed.

SQL> Disconnected from Oracle Database 19c Enterprise Edition Release
19.0.0.0.0 - Production
Version 19.17.0.0.0
2023-08-14 10:07:13 UTC: [testnode] [3014990] [UNINSTALL_AHFS] [INFO]
Stopping all running ahfs processes
2023-08-14 10:07:14 UTC: [testnode] [3015554] [MANAGE_APP] [INFO] Component
chosen as all
2023-08-14 10:07:14 UTC: [testnode] [3015554] [MANAGE_APP] [INFO] Action
chosen as stop
2023-08-14 10:07:14 UTC: [testnode] [3015554] [MANAGE_APP] [INFO]
Successfully removed job(s) for all from crontab
2023-08-14 10:07:20 UTC: [testnode] [3015554] [MANAGE_APP] [INFO] Killed the
existing Fleet Insights processes
2023-08-14 10:07:23 UTC: [testnode] [3015554] [MANAGE_APP] [INFO] Killed the
existing collection processing engine processes
2023-08-14 10:07:24 UTC: [testnode] [3015554] [MANAGE_APP] [INFO] Killed the
existing ahf_service processes for component(s): all.
2023-08-14 10:07:24 UTC: [testnode] [3014990] [UNINSTALL_AHFS] [INFO]
Removing AHF Service backup files
2023-08-14 10:07:24 UTC: [testnode] [3014990] [UNINSTALL_AHFS] [INFO]
Deleting AHF Service application files
```

```
Completing  AHF Service uninstallation
2023-08-14 10:07:26 UTC: [testnode] [3014990] [UNINSTALL_AHFS] [INFO]
Successfully uninstalled AHF service
Successfully uninstalled application
```

Related Topics

- ahf_fleet_setup
  Use the `ahf_fleet_setup` command to install or patch AHF Fleet Insights.
- ahffi
  Use the `ahffi` command to manage AHF Fleet Insights.

1.11 Security Best Practices for AHF Fleet Insights

Review the key security measures to secure the AHF Fleet Insights application, including changing default credentials, managing SSL certificates, enforcing file permissions, and ensuring Nginx FIPS compliance.

Change default user credentials

During installation, a user account is created with a default username and password. Upon first login, the application requires the admin user to change the credentials. The application enforces this password change to secure the UI admin account.

Replace SSL certificates

You can replace expired SSL certificates or use your own custom SSL certificates for the application. The unified CLI offers a simple way to do this using the `importcert` command, allowing you to update certificates seamlessly when needed. For more information, see Import SSL Certificates.

File permissions

All AHF Fleet Insights application files and directories are restricted to the necessary user group, typically just the install user. Files containing credentials are further secured by being set to read-only, ensuring that sensitive information remains protected.

Nginx Configuration

Nginx is configured to allow only FIPS-compliant ciphers as listed on NGINX FIPS Compliance. This configuration is enabled by default, so no additional setup is required.

Passwords

Passwords are not stored in any installation files; they are encrypted and removed from the properties and other files once the installation is successfully completed.

Command Line Interface

Only the installation user can run the CLI commands.

2
Command Line Reference

2.1 ahf_fleet_setup

Use the `ahf_fleet_setup` command to install or patch AHF Fleet Insights.

Syntax

```
ahf_fleet_setup [OPTIONS]
```

Option	Description
`-h, --help`	Prints this help message and exits.
`-loc <path>`	Specifies the installation path (not needed for patching).
`-connect_string <file>`	(optional) Specifies DB connection string as a text file.
`-db_wallet_path <path>`	(optional) Specifies DB wallet path.
`-quiet [<property file>]`	Proceeds with installation/patching in quiet mode.

Example 2-1 Connect string

```
(DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=*****.<host name>.<domain name>)
(PORT=1**5))(CONNECT_DATA=(SERVICE_NAME=*****.<host name>.<domain name>)))
```

Example 2-2 Installation

```
./ahf_fleet_setup -loc <install location>


./ahf_fleet_setup -loc <install location> -connect_string <connect string
file>


./ahf_fleet_setup -loc <install location> -db_wallet_path <db wallet path>


./ahf_fleet_setup -loc <install location> -db_wallet_path <db wallet path> -
connect_string <connect string file>


./ahf_fleet_setup -quiet <properties file>
```

Example 2-3 Patching

```
./ahf_fleet_setup


./ahf_fleet_setup -quiet


./ahf_fleet_setup -quiet <properties file>
```

Not something the user would typically run. Only use case is for when a new version introduces a property that requires user to provide a value.

2.2 ahffi

Use the `ahffi` command to manage AHF Fleet Insights.

A binary with the name `ahffi` will be available in the install location once Fleet Insights installation is successful.

Syntax

```
ahffi [OPTIONS]
```

Option	Description
`-h, --help`	Prints this help message and exits.
`version`	Prints application version info.
`start`	Starts all Fleet Insight processes.
`stop`	Stops all Fleet Insight processes.
`restart`	Restarts all Fleet Insight processes.
`status`	Gets the running status of Fleet Insight processes.

Option	Description
`info`	Prints the app URL and command used to register clients.
`diagnose`	Runs `ahffi` diagnostics.
`create-generic-user <username>`	Creates generic registration user.
`uninstall [-q] [-c] [-b]`	Uninstalls Fleet Insights application. • `-q`: Uninstall the application in [q]uiet mode (no prompts, default options are to keep backup) • `-c`: [c]leanup all AHF Fleet Insights related files and database entries in quite mode • `-b`: keep a [b]ackup in the database Upon successful run, the uninstaller: • Uninstalls the application. • Deletes the metadata file `~/.ahffi` that contains the install location info.
`update-password {db_user|registration_user}`	Updates password for the specified user.
`updateproperty -k <key> -v <value>`	Updates a single application property.
`updateproperty -p <propery file>`	Updates application properties as read from a specified text file.
`importcert -cert <cert file> -key <key file>`	Use this command option to import your own SSL certificates for running the application instead of using the default certificates. Upon successful run: • Imported certificate is copied to the `ahf_install_loc/ahf_service/certs/` directory. • If the certificate already exists, the existing certificate is backed up with `.default` extension. • The `ahf_install_loc/ahf_service/third_party/nginx/conf/ahfs_nginx_with_ssl.conf` file must have correct configuration for certificates. • Application is automatically restarted.

Example 2-4 ahffi restart

```
./ahffi restart
2023-06-26 17:54:11 UTC: [testnode] [180200] [MANAGE_APP] [INFO] The
specified component flag: restart is not valid, using the default value 'all'
2023-06-26 17:54:11 UTC: [testnode] [180200] [MANAGE_APP] [INFO] Component
chosen as all
2023-06-26 17:54:11 UTC: [testnode] [180200] [MANAGE_APP] [INFO] Action
chosen as restart
None of the queried jobs are present in crontab
2023-06-26 17:54:12 UTC: [testnode] [180200] [MANAGE_APP] [INFO] Successfully
removed job(s) for all from crontab
2023-06-26 17:54:17 UTC: [testnode] [180200] [MANAGE_APP] [INFO] Killed the
existing Fleet Insights processes
2023-06-26 17:54:20 UTC: [testnode] [180200] [MANAGE_APP] [INFO] Killed the
```

```
existing collection processing engine processes
2023-06-26 17:54:21 UTC: [testnode] [180200] [MANAGE_APP] [INFO] Killed the
existing ahf_service processes for componet(s): all.
2023-06-26 17:54:21 UTC: [testnode] [180200] [MANAGE_APP] [INFO] Starting
Fleet Insights
2023-06-26 17:54:22 UTC: [testnode] [180200] [MANAGE_APP] [INFO] Started
Fleet Insights successfully
2023-06-26 17:54:22 UTC: [testnode] [180200] [MANAGE_APP] [INFO] The path to
manage_app.log is /scratch/ahfs_local/install_test/ahf_service/log/
manage_app.log
2023-06-26 17:54:23 UTC: [testnode] [180200] [MANAGE_APP] [INFO] The path to
nginx access.log is /scratch/ahfs_local/install_test/ahf_service/third_party/
nginx/logs/access.log
2023-06-26 17:54:23 UTC: [testnode] [180200] [MANAGE_APP] [INFO] Starting the
collection processing engine
2023-06-26 17:54:24 UTC: [testnode] [180200] [MANAGE_APP] [INFO] Collection
processing engine is running
2023-06-26 17:54:24 UTC: [testnode] [180200] [MANAGE_APP] [INFO] Started the
collection processing engine successfully
All jobs are present in crontab
2023-06-26 17:54:25 UTC: [testnode] [180200] [MANAGE_APP] [INFO] Successfully
added job(s) for all from crontab
2023-06-26 17:54:25 UTC: [testnode] [180200] [MANAGE_APP] [INFO] Started the
ahf_service processes for componet(s): all.
```

Example 2-5 ahffi status

```
./ahffi status
2023-06-26 18:11:13 UTC: [testnode] [313565] [MANAGE_APP] [INFO] The
specified component flag: status is not valid, using the default value 'all'
2023-06-26 18:11:13 UTC: [testnode] [313565] [MANAGE_APP] [INFO] Component
chosen as all
2023-06-26 18:11:13 UTC: [testnode] [313565] [MANAGE_APP] [INFO] Action
chosen as status
2023-06-26 18:11:14 UTC: [testnode] [313565] [MANAGE_APP] [INFO] Fleet
Insights is running
2023-06-26 18:11:14 UTC: [testnode] [313565] [MANAGE_APP] [INFO] Collection
processing engine is running
2023-06-26 18:11:14 UTC: [testnode] [313565] [MANAGE_APP] [INFO] Container
Manager isn't enabled in this install
2023-06-26 18:11:14 UTC: [testnode] [313565] [] [INFO] All AHF Service
processes for componet(s): all are running.
```

Example 2-6 ahffi info

```
./ahffi info
Application URL : https://demo.oracle.system.com:5000/ahfservice
Registration command : ahf configuration set --type fleet-insights --user-
name <registration_user> --url https://demo.oracle.system.com:5000
```

Example 2-7 ahffi diagnose

```
./ahffi diagnose
Running diagnose tool
```

```
  adding: testnode.06-26-2023-18-25-33-UTC.ahffi_logs/ (stored 0%)
  adding: testnode.06-26-2023-18-25-33-UTC.ahffi_logs/ahffi_log_files.txt
(deflated 85%)
  adding: testnode.06-26-2023-18-25-33-UTC.ahffi_logs/os_detail_file.txt
(deflated 78%)
  adding: testnode.06-26-2023-18-25-33-UTC.ahffi_logs/wallet_utils.err
(deflated 95%)
...
...
...
  adding: testnode.06-26-2023-18-25-33-UTC.ahffi_logs/consumer_daemon.log.1
(deflated 96%)
  adding: testnode.06-26-2023-18-25-33-UTC.ahffi_logs/consumer_daemon.log
(deflated 96%)
/scratch/ahfs_local/install_test
DIAGNOSE_AHFFI ran successfully
Diagnostic info can be found at /scratch/ahfs_local/collections/collections/
testnode.06-26-2023-18-25-33-UTC.ahffi_logs.zip
```

Example 2-8 ahffi create-generic-user

```
./ahffi create-generic-user admin
Generic registration password:
Enter generic registration password again
Generic registration password:

Generic registration user admin created
```

Example 2-9 ahffi importcert

```
./ahffi importcert -cert /scratch/certs/ahf.crt -key /scratch/certs/ahf.key
2023-08-14 09:44:18 UTC: [testnode] [2832363] [UPDATE_PROPERTIES] [INFO] Path
to the input properties file provided as : /scratch/ahfs_local/install_test/
ahf_service.properties.1692006258
2023-08-14 09:44:22 UTC: [testnode] [2832363] [UPDATE_PROPERTIES] [INFO]
nginx: the configuration file /scratch/ahfs_local/install_test/ahf_service/
third_party/nginx/conf/ahfs_nginx_with_ssl.conf syntax is ok
2023-08-14 09:44:22 UTC: [testnode] [2832363] [UPDATE_PROPERTIES] [INFO]
nginx: configuration file /scratch/ahfs_local/install_test/ahf_service/
third_party/nginx/conf/ahfs_nginx_with_ssl.conf test is successful
Restarting the application...
2023-08-14 09:44:23 UTC: [testnode] [2833231] [MANAGE_APP] [INFO] Component
chosen as all
2023-08-14 09:44:23 UTC: [testnode] [2833231] [MANAGE_APP] [INFO] Action
chosen as restart
2023-08-14 09:44:23 UTC: [testnode] [2833231] [MANAGE_APP] [INFO]
Successfully removed job(s) for all from crontab
2023-08-14 09:44:28 UTC: [testnode] [2833231] [MANAGE_APP] [INFO] Killed the
existing Fleet Insights processes
2023-08-14 09:44:32 UTC: [testnode] [2833231] [MANAGE_APP] [INFO] Killed the
existing collection processing engine processes
2023-08-14 09:44:33 UTC: [testnode] [2833231] [MANAGE_APP] [INFO] Killed the
existing ahf_service processes for component(s): all.
2023-08-14 09:44:33 UTC: [testnode] [2833231] [MANAGE_APP] [INFO] Starting
Fleet Insights
```

```
2023-08-14 09:44:37 UTC: [testnode] [2833231] [MANAGE_APP] [INFO] Started
Fleet Insights successfully
2023-08-14 09:44:37 UTC: [testnode] [2833231] [MANAGE_APP] [INFO] The path to
manage_app.log is /scratch/ahfs_local/install_test/ahf_service/log/
manage_app.log
2023-08-14 09:44:37 UTC: [testnode] [2833231] [MANAGE_APP] [INFO] The path to
nginx access.log is /scratch/ahfs_local/install_test/ahf_service/third_party/
nginx/logs/access.log
2023-08-14 09:44:37 UTC: [testnode] [2833231] [MANAGE_APP] [INFO] Starting
the collection processing engine
2023-08-14 09:44:38 UTC: [testnode] [2833231] [MANAGE_APP] [INFO] Collection
processing engine is running
2023-08-14 09:44:38 UTC: [testnode] [2833231] [MANAGE_APP] [INFO] Started the
collection processing engine successfully
2023-08-14 09:44:38 UTC: [testnode] [2833231] [MANAGE_APP] [INFO]
Successfully added job(s) for all from crontab
2023-08-14 09:44:38 UTC: [testnode] [2833231] [MANAGE_APP] [INFO] Started the
ahf_service processes for component(s): all.
Successfully imported the certificates
```

Example 2-10 ahffi updateproperty

```
./ahffi updateproperty -k WEBAPP_PORT -v 5001
2023-08-14 09:58:36 UTC: [testnode] [2945846] [UPDATE_PROPERTIES] [INFO] Key
of the property to be updated: WEBAPP_PORT
2023-08-14 09:58:36 UTC: [testnode] [2945846] [UPDATE_PROPERTIES] [INFO]
Value of the property to be updated: 5001
2023-08-14 09:58:36 UTC: [testnode] [2945846] [UPDATE_PROPERTIES] [INFO]
Writing the provided key-value pair to /scratch/ahfs_local/install_test/
ahf_service.properties.1692007116
2023-08-14 09:58:39 UTC: [testnode] [2945846] [UPDATE_PROPERTIES] [INFO]
nginx: the configuration file /scratch/ahfs_local/install_test/ahf_service/
third_party/nginx/conf/ahfs_nginx_with_ssl.conf syntax is ok
2023-08-14 09:58:39 UTC: [testnode] [2945846] [UPDATE_PROPERTIES] [INFO]
nginx: configuration file /scratch/ahfs_local/install_test/ahf_service/
third_party/nginx/conf/ahfs_nginx_with_ssl.conf test is successful
```

Example 2-11 Update DB user password

> **Note:**
>
> Before changing the database password, stop the Fleet Insights service.

```
./ahffi update-password db_user
Application needs to be stopped for this action.
Proceed to stop the application? [y/n]: y
2024-06-28 05:34:24 UTC: [testnode] [2746424] [MANAGE_APP] [INFO] Component
chosen as all
2024-06-28 05:34:24 UTC: [testnode] [2746424] [MANAGE_APP] [INFO] Action
chosen as stop
2024-06-28 05:34:25 UTC: [testnode] [2746424] [MANAGE_APP] [INFO]
Successfully removed job(s) for all from crontab
```

```
2024-06-28 05:34:30 UTC: [testnode] [2746424] [MANAGE_APP] [INFO] Killed the
existing Fleet Insights processes
2024-06-28 05:34:33 UTC: [testnode] [2746424] [MANAGE_APP] [INFO] Killed the
existing collection processing engine processes
2024-06-28 05:34:34 UTC: [testnode] [2746424] [MANAGE_APP] [SUCCESS] Killed
the existing ahf_service processes for component(s): all.
Please update your DB with new password and only then proceed by pressing
ENTER...
Enter new DB user password:
Enter new DB user password again:
2024-06-28 05:35:18 UTC: [testnode] [2751047] [UPDATE_PROPERTIES] [INFO] Key
of the property to be updated: DB_PASSWORD
2024-06-28 05:35:21 UTC: [testnode] [2751047] [UPDATE_PROPERTIES] [INFO]
Writing the provided key-value pair to /scratch/ahfs_local/install_test/
ahf_service.properties.1719552921
2024-06-28 05:35:32 UTC: [testnode] [2751047] [UPDATE_PROPERTIES] [INFO]
nginx: the configuration file /scratch/ahfs_local/install_test/ahf_service/
third_party/nginx/conf/ahfs_nginx_with_ssl.conf syntax is ok
2024-06-28 05:35:32 UTC: [testnode] [2751047] [UPDATE_PROPERTIES] [INFO]
nginx: configuration file /scratch/ahfs_local/install_test/ahf_service/
third_party/nginx/conf/ahfs_nginx_with_ssl.conf test is successful
DB password changed. Starting Fleet Insights...
2024-06-28 05:35:36 UTC: [testnode] [2752698] [MANAGE_APP] [INFO] Component
chosen as all
2024-06-28 05:35:36 UTC: [testnode] [2752698] [MANAGE_APP] [INFO] Action
chosen as start
2024-06-28 05:35:36 UTC: [testnode] [2752698] [MANAGE_APP] [INFO] Starting
Fleet Insights
2024-06-28 05:35:41 UTC: [testnode] [2752698] [MANAGE_APP] [INFO] Started
Fleet Insights successfully
2024-06-28 05:35:41 UTC: [testnode] [2752698] [MANAGE_APP] [INFO] The path to
manage_app.log is /scratch/ahfs_local/install_test/ahf_service/log/
manage_app.log
2024-06-28 05:35:41 UTC: [testnode] [2752698] [MANAGE_APP] [INFO] The path to
nginx access.log is /scratch/ahfs_local/install_test/ahf_service/third_party/
nginx/logs/access.log
2024-06-28 05:35:41 UTC: [testnode] [2752698] [MANAGE_APP] [INFO] Starting
the collection processing engine
2024-06-28 05:35:42 UTC: [testnode] [2752698] [MANAGE_APP] [INFO] Collection
processing engine is running
2024-06-28 05:35:43 UTC: [testnode] [2752698] [MANAGE_APP] [INFO] Started the
collection processing engine successfully
2024-06-28 05:35:44 UTC: [testnode] [2752698] [MANAGE_APP] [INFO]
Successfully added job(s) for all from crontab
2024-06-28 05:35:44 UTC: [testnode] [2752698] [MANAGE_APP] [SUCCESS] Started
the ahf_service processes for component(s): all.
```

Example 2-12 ahffi uninstall

```
./ahffi uninstall -qc
Uninstalling AHF service in quiet mode
Database objects will be cleaned as part of this uninstallation
No install directory, considering /scratch/ahfs_local/install_test as the
install directory
Removing installation from /scratch/ahfs_local/install_test/
```

```
2023-08-14 10:07:10 UTC: [testnode] [3014990] [UNINSTALL_AHFS] [INFO]
Uninstalling AHF Service
2023-08-14 10:07:10 UTC: [testnode] [3014990] [UNINSTALL_AHFS] [INFO]
Cleaning AHF Service database objects

SQL*Plus: Release 21.0.0.0.0 - Production on Mon Aug 14 10:07:10 2023
Version 21.10.0.0.0

Copyright (c) 1982, 2022, Oracle.  All rights reserved.

Last Successful login time: Mon Aug 14 2023 10:07:10 +00:00

Connected to:
Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production
Version 19.17.0.0.0

SQL>   2    3    4    5    6    7    8    9   10   11   12   13   14   15
16   17   18   19   20   21   22   23   24   25   26   27   28   29   30
31   32   33   34
PL/SQL procedure successfully completed.

SQL> Disconnected from Oracle Database 19c Enterprise Edition Release
19.0.0.0.0 - Production
Version 19.17.0.0.0
2023-08-14 10:07:13 UTC: [testnode] [3014990] [UNINSTALL_AHFS] [INFO]
Stopping all running ahfs processes
2023-08-14 10:07:14 UTC: [testnode] [3015554] [MANAGE_APP] [INFO] Component
chosen as all
2023-08-14 10:07:14 UTC: [testnode] [3015554] [MANAGE_APP] [INFO] Action
chosen as stop
2023-08-14 10:07:14 UTC: [testnode] [3015554] [MANAGE_APP] [INFO]
Successfully removed job(s) for all from crontab
2023-08-14 10:07:20 UTC: [testnode] [3015554] [MANAGE_APP] [INFO] Killed the
existing Fleet Insights processes
2023-08-14 10:07:23 UTC: [testnode] [3015554] [MANAGE_APP] [INFO] Killed the
existing collection processing engine processes
2023-08-14 10:07:24 UTC: [testnode] [3015554] [MANAGE_APP] [INFO] Killed the
existing ahf_service processes for component(s): all.
2023-08-14 10:07:24 UTC: [testnode] [3014990] [UNINSTALL_AHFS] [INFO]
Removing AHF Service backup files
2023-08-14 10:07:24 UTC: [testnode] [3014990] [UNINSTALL_AHFS] [INFO]
Deleting AHF Service application files
Completing  AHF Service uninstallation
2023-08-14 10:07:26 UTC: [testnode] [3014990] [UNINSTALL_AHFS] [INFO]
Successfully uninstalled AHF service
Successfully uninstalled application
```

3
AHFFI Web Interface

- Get Started with AHF Fleet Insights Web Interface
  AHF Fleet Insights web interface is an intuitive and user-friendly interface making it accessible for both technical and non-technical users.
- Tasks You Can Perform Using AHF Fleet Insights Web Interface
  The use cases are not limited to the ones listed in this section.

3.1 Get Started with AHF Fleet Insights Web Interface

AHF Fleet Insights web interface is an intuitive and user-friendly interface making it accessible for both technical and non-technical users.

Log in to the application

1. To fetch the application URL, go to the install location, and then run:

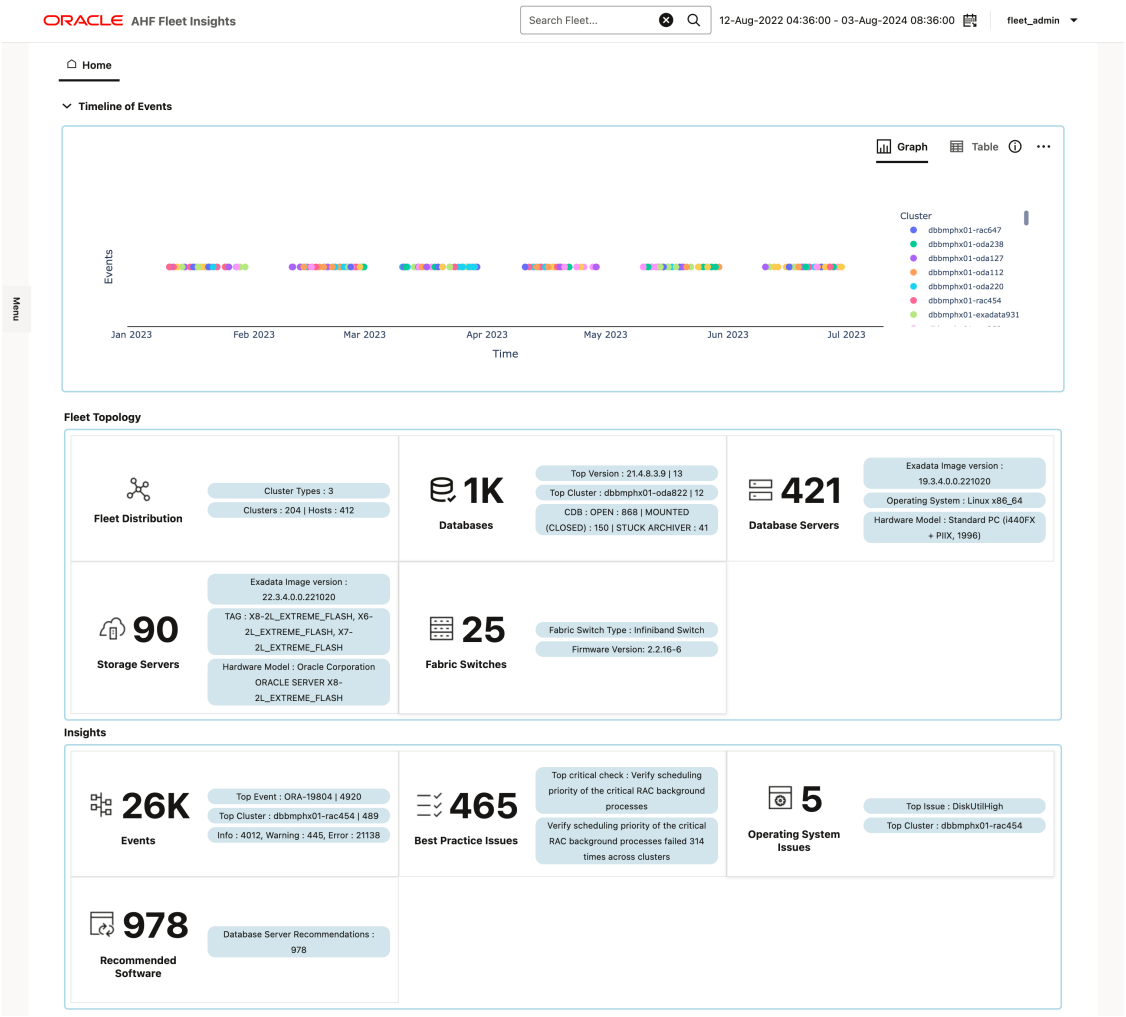
   ```
   ./ahffi info
   ```

2. Open the URL in a recommended browser.
3. Enter the fleet admin credentials in the login screen, and then click **Login**.

> **Note:**
>
> - Default login credentials: `fleet_admin`/`welcome1`
> - During your first login, you will be prompted to update your password.

> **Note:**
>
> If you're unable to view data on the dashboard after successful registration, it may be because, for AHF Fleet Insights (AHFFI), AHF collections are scheduled to run every 5th and 17th hour of the day. The corresponding cluster data will only appear in the Fleet Insights dashboard after the scheduled collection has been completed.
> Alternatively, you can trigger an on-demand collection immediately using the `tfactl diagcollect` command with the `-insights` option on the AHF client. For example:
>
> ```
> tfactl diagcollect -insights -last 4h
> ```

Figure 3-1 AHF Fleet Insights - Home



Home

- **Global search**: Global search and filter: Filter for issues from a specific cluster or system.
- **Global time filter**: Filter for issues that happened during a specific time window.
- **Menu drawer**: Switch between sections.
- **Timeline of events**: Insights reports collected across the fleet.
- **Fleet topology**: Statistics for the complete fleet.
  - **Fleet Distribution**: Provides aggregated statistics for the complete fleet.
  - **Databases**: Provides aggregated information about Oracle Databases running across the fleet.
  - **Database Servers**: Provides aggregated information about database servers across the fleet.
  - **Storage Servers**: Provides aggregated information about storage servers across the fleet.
  - **Fabric Switches**: Provides aggregated information about Network Fabric Switches across the fleet.

- **Insights**: Events occurred, Best Practice issues, operating system issues, and software recommendations.
  - **Events**: Provides details about the events that occurred across the fleet.
  - **Best Practice Issues**: Provides the results of Best Practices Compliance checks across the fleet.
  - **Operating system issues**: Provides details about the metrics collected and a detailed report on operating system anomalies.
  - **Recommended software**: Lists recommended software-supported versions.

3.2 Tasks You Can Perform Using AHF Fleet Insights Web Interface

The use cases are not limited to the ones listed in this section.

- Home
- Fleet Topology
- Insights
- Admin
- File Viewer
- Common User Interface Functionalities

3.2.1 Home

- Keep track of all the Insights reports collected across the fleet
- View the aggregate statistics of a fleet at a glance
- Filter cluster-specific or system-specific issues
- Filter issues that happened during a specific time window
- Move from aggregations to specific Insights report and diagnostic collections

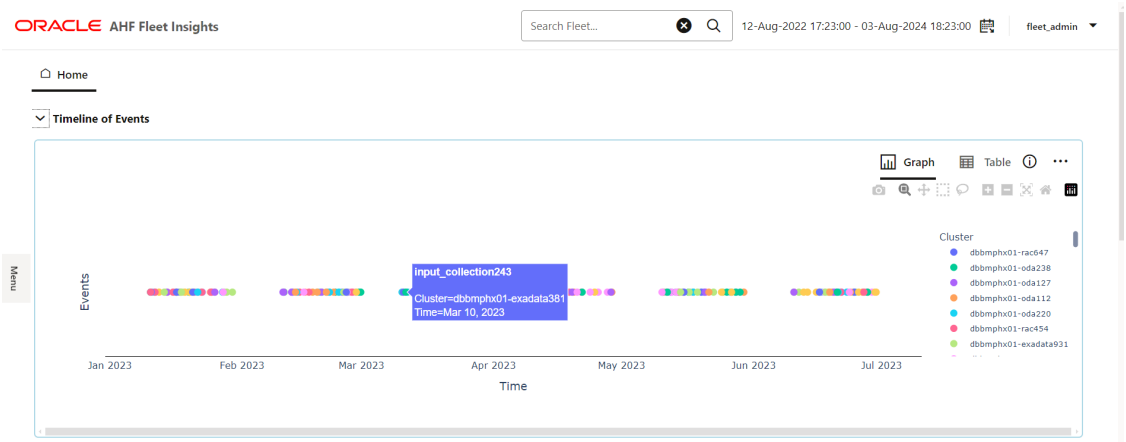
3.2.1.1 Keep track of all the Insights reports collected across the fleet

Purpose:

- **View Report Timelines:** Track the timeline of reports for individual clusters.
- **Monitor Report Frequency:** Observe the frequency of insights reports generated by each cluster.
- **Identify Report Bursts:** Detect any bursts of reports within a short period, which could signal underlying issues.
- **Analyze Noise Levels:** Identify clusters across the fleet that are generating excessive or frequent reports, indicating potential problems.

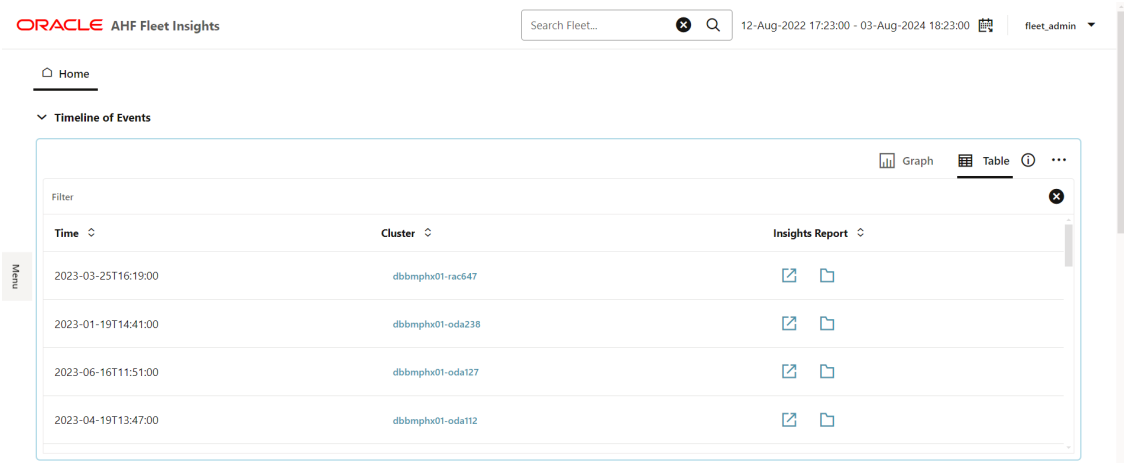
The plot displays the insights reports uploaded from monitored clusters over the selected time period.

Figure 3-2 Timeline of Events - Graph



Click a scatter point to access the corresponding insights report

Figure 3-3 Timeline of Events - Table



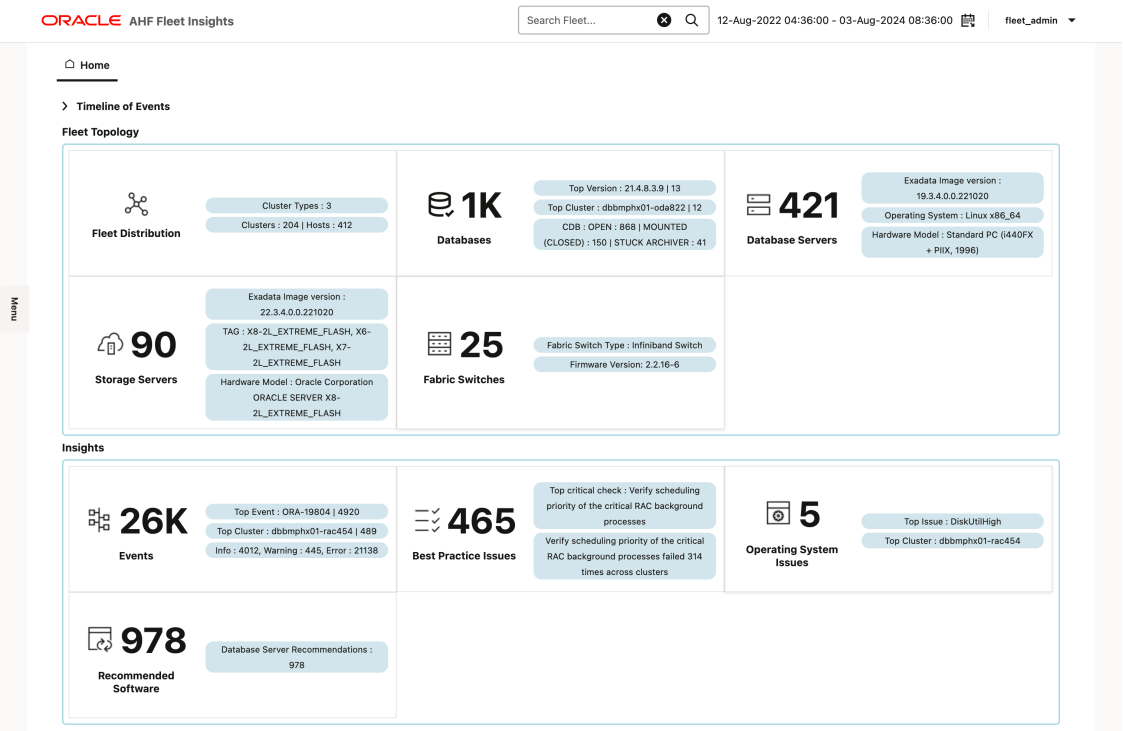
1. Click the name of the cluster to view cluster summary and collection details.
2. Click the file viewer to view files in a collection.

3.2.1.2 View the aggregate statistics of a fleet at a glance

Purpose:

- **Overview of Key Metrics:** Quickly access the most important statistics for the entire fleet from the Home page.
- **Identify Key Areas:** While investigating issues, support engineers can easily identify standout sections.
- **Focus on Potential Causes:** Pinpoint areas that are most promising for discovering the root cause of issues.

Figure 3-4 Aggregate statistics of a fleet

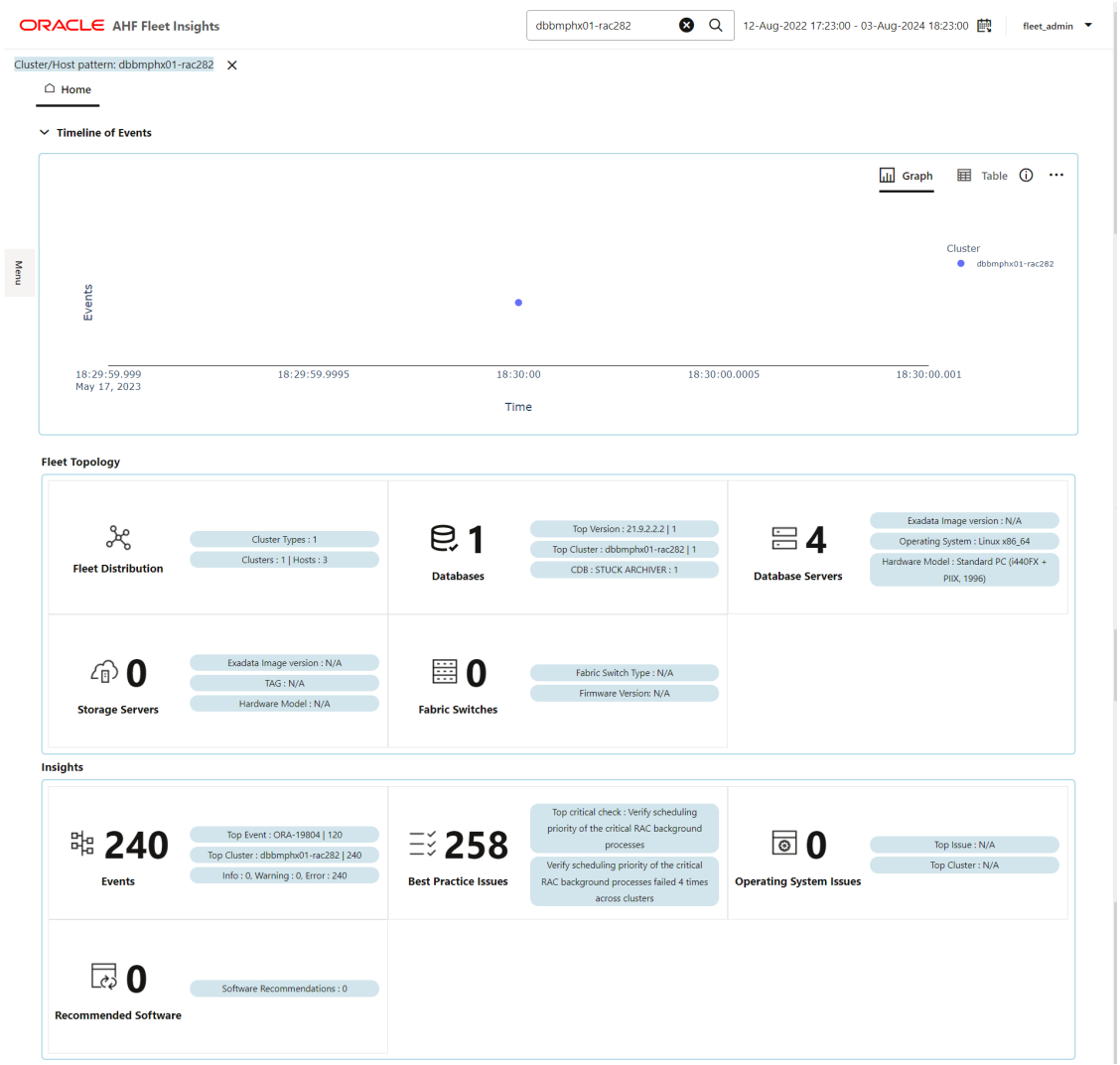


3.2.1.3 Filter cluster-specific or system-specific issues

Purpose:

- **Detailed Insights:** View global-level statistics and aggregates for specific clusters or hosts under investigation.
- **Focused Analysis:** Narrow down the data to focus on issues relevant to particular clusters or systems, enabling targeted troubleshooting and resolution.

Figure 3-5 Filter cluster-specific or system-specific issues



1. In the search field, enter the name of the cluster or host, and then click the search icon.
2. In the resulting Search Results window, click **Apply**.

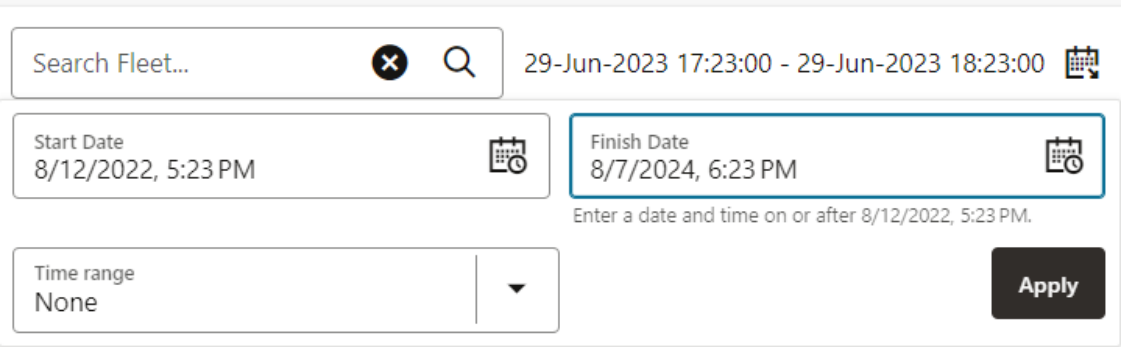
3.2.1.4 Filter issues that happened during a specific time window

Purpose:

- **Customized Analysis:** By default, Fleet Insights displays data for a 4-hour window ending at the last report generation. Adjust the time interval to focus on specific periods of interest.
- **Precise Troubleshooting:** Filter statistics and aggregates to investigate issues that occurred during a defined time frame, enhancing the accuracy of diagnostics and resolutions.

Select a timeframe from the calendar control, and then click **Apply**.

Figure 3-6 Global Time Filter



3.2.1.5 Move from aggregations to specific Insights report and diagnostic collections

Purpose:

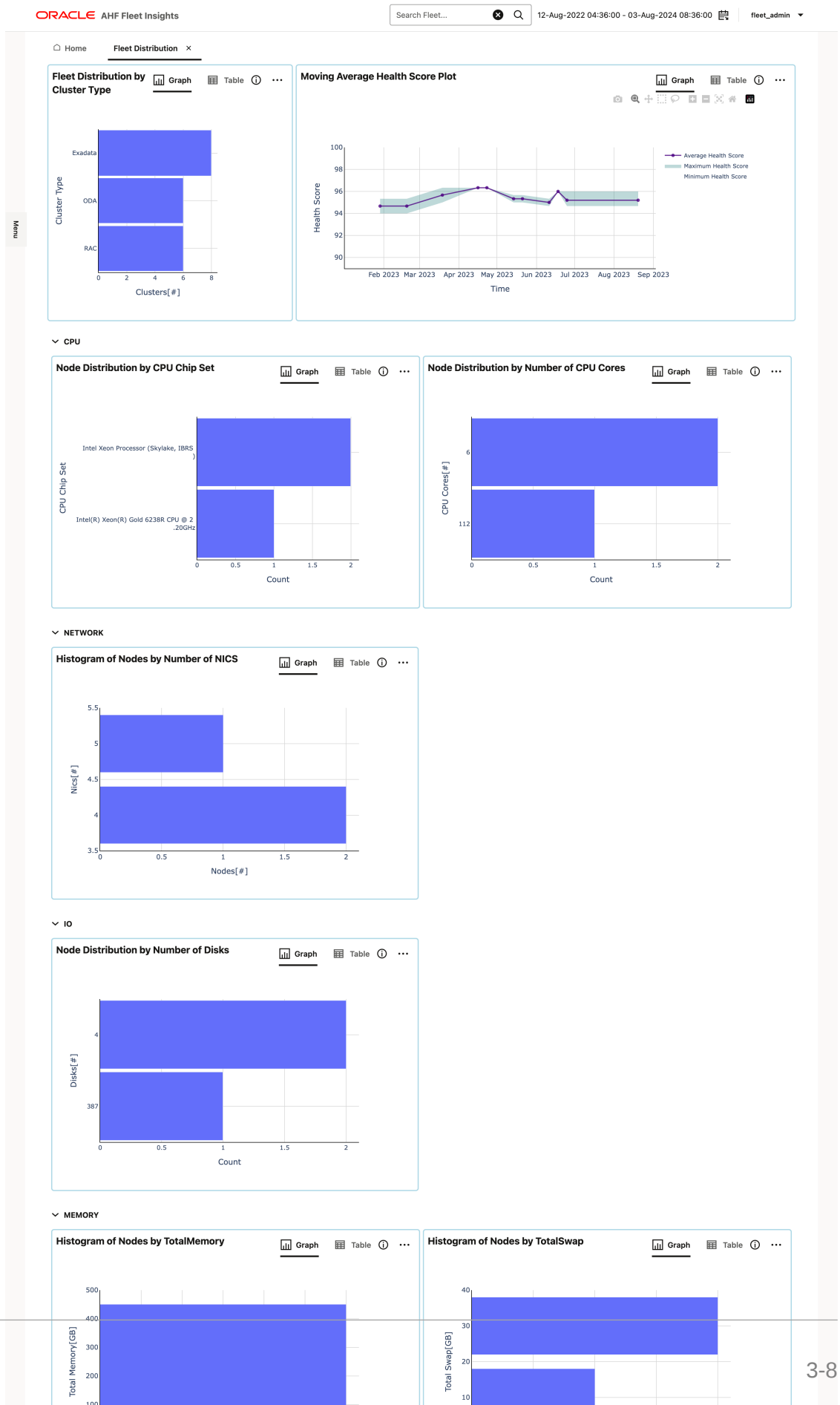
- **Detailed Investigation:** Dive deeper from aggregated data to specific insights reports or diagnostic collections.
- **Root Cause Analysis:** Explore individual records to uncover the underlying causes of issues, allowing for targeted troubleshooting and resolution.

3.2.2 Fleet Topology

- Fleet Distribution
- Databases
- Database Servers
- Storage Servers
- Fabric Switches

3.2.2.1 Fleet Distribution

Figure 3-7 Fleet Distribution



- Observe the distribution of fleet in terms of the type of clusters
- Observe the fleet's compliance health score trend over a period of time
- Observe the distribution of fleet across various system configurations

3.2.2.1.1 Observe the distribution of fleet in terms of the type of clusters

Purpose:

- **Fleet Composition:** Determine the number of systems categorized by type within the fleet.
- **Informed Decisions:** Utilize this distribution to guide decisions related to patching, upgrading, and managing resources based on the type and count of systems.

3.2.2.1.2 Observe the fleet's compliance health score trend over a period of time

Purpose:

- **Health Score Monitoring:** After deploying AHF Fleet Insights and registering client clusters, you will receive a compliance health score for each cluster along with suggested fixes in the Best Practice Issues section.
- **Performance Evaluation:** Track the fleet average health score over time. Ideally, the score should remain constant or improve as you apply recommended patches.
- **Issue Detection:** If the average score begins to decline, this may indicate issues during patching or other problems that require further investigation.

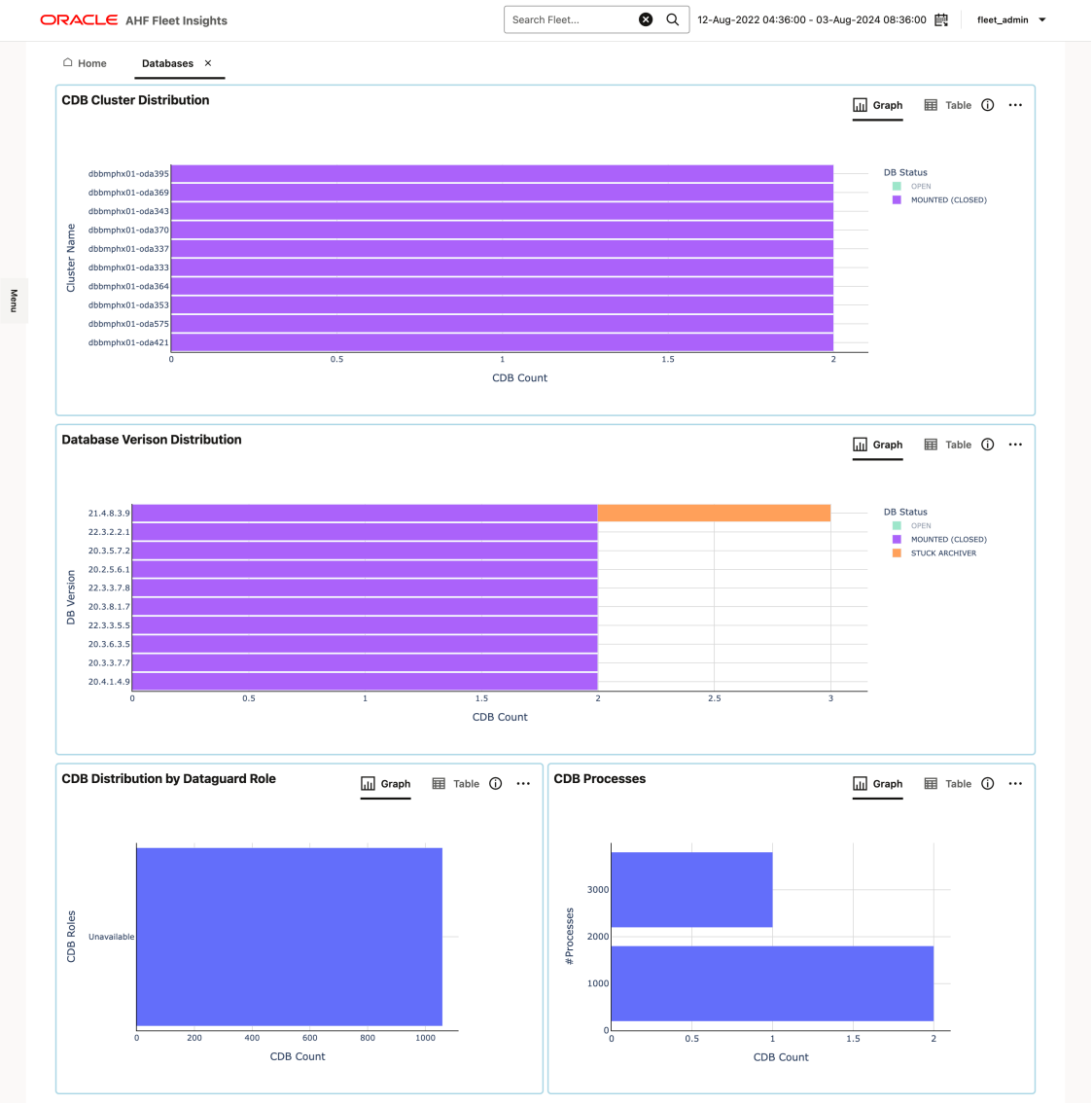
3.2.2.1.3 Observe the distribution of fleet across various system configurations

Purpose:

- **Configuration Overview:** Analyze how your fleet is distributed across different system configurations, as captured by Insights reporting. This includes dimensions such as CPU chipset type, memory size, and other hardware or software configurations.
- **Informed Decisions:** Use this distribution data to make informed decisions about system management, including patching, upgrades, and capacity planning.

3.2.2.2 Databases

Figure 3-8 Databases



- Observe the distribution of databases across the fleet
- Find what versions of databases are extensively used across the fleet

3.2.2.2.1 Observe the distribution of databases across the fleet

Purpose:

- **Database Status Overview:** Determine how databases are distributed across your fleet, including their operational statuses (online, unavailable, etc.).
- **Identify Issues:** Assess which databases or clusters may require attention based on their current status and distribution.
- **Informed Decision-Making:** Use this information to prioritize actions such as maintenance, troubleshooting, or resource reallocation to ensure optimal performance and availability.

3.2.2.2.2 Find what versions of databases are extensively used across the fleet

Purpose:

- **Version Analysis:** Assess which database versions are most prevalent to guide decisions on prioritizing upgrades or patching efforts.
- **Strategic Planning:** Use the version distribution information to align upgrade strategies with fleet-wide requirements and ensure compatibility and performance.

3.2.2.3 Database Servers

Figure 3-9 Database Servers

- Know the distribution of fleet across various database server configurations
- Identify the most commonly used operating system/version across your database servers
- Identify the most common range of memory sizes across your database servers

3.2.2.3.1 Know the distribution of fleet across various database server configurations

Purpose: Understand the distribution of your fleet across different configurations of database servers, such as Exadata Image Version and Hardware Model Distribution. This insight helps in making informed decisions about:

- **Patch and Bug Prioritization:** Target updates and fixes based on the configuration spread within your fleet.
- **Capacity Planning:** Assess current capacity and plan for future needs according to the distribution.
- **Fault Tolerance:** Identify potential vulnerabilities and enhance fault tolerance across configurations.
- **Resource Allocation:** Optimize resource distribution based on the configuration details of your servers.

3.2.2.3.2 Identify the most commonly used operating system/version across your database servers

Purpose:

- **Optimize Performance:** Ensure consistency in the operating system environment to streamline performance tuning and troubleshooting.
- **Enhance System Management:** Standardize configurations across your fleet to simplify management tasks and improve security by addressing specific vulnerabilities related to common operating systems and versions.

3.2.2.3.3 Identify the most common range of memory sizes across your database servers

Purpose:

- **Performance Optimization:** Ensure that memory resources are appropriately allocated to meet the performance requirements of your database operations.
- **Troubleshooting:** Address performance issues by analyzing memory usage patterns and adjusting configurations as needed.
- **Cost Management:** Manage costs by aligning memory allocations with your performance needs and avoiding over-provisioning.

3.2.2.4 Storage Servers

Figure 3-10 Storage Servers

- Know the distribution of fleet across various storage server configurations

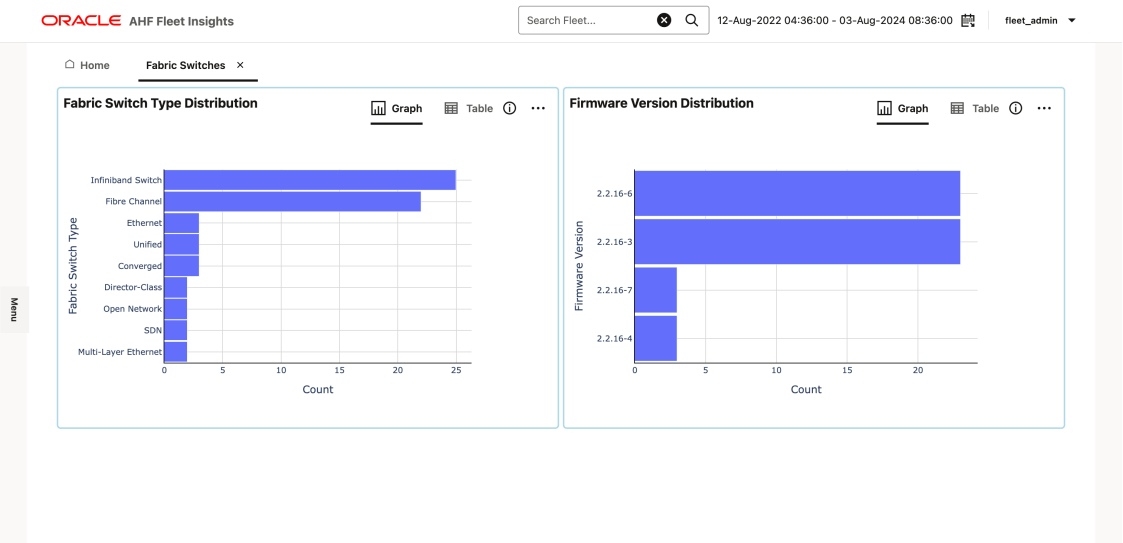
3.2.2.4.1 Know the distribution of fleet across various storage server configurations

Purpose:

- **Understand Configuration Distribution:** Gain insight into how your fleet is distributed across various storage server configurations, such as Exadata Image Version and Hardware Model Distribution.
- **Make Informed Decisions:** Use this information for patch and bug prioritization, capacity planning, fault tolerance, and resource allocation, ensuring that your maintenance and planning strategies are aligned with your infrastructure's configuration.

3.2.2.5 Fabric Switches

Figure 3-11 Fabric Switches



- Know the distribution of fleet across various fabric switch configurations

3.2.2.5.1 Know the distribution of fleet across various fabric switch configurations

Purpose:

- **Understand Configuration Distribution:** Gain insight into how your fleet is distributed across various fabric switch configurations, such as Switch Type and Firmware Version.
- **Optimize Performance and Troubleshoot Issues:** Use this information to optimize performance, streamline troubleshooting, and ensure that your fabric switch configurations are effectively managed.

3.2.3 Insights

- Events
- Best Practice Issues
- Operating System Issues
- Recommended Software

3.2.3.1 Events

Figure 3-12 Events

Event Name	Event Type	Event Component	Cluster Count	Host Count	DB Count
ORA-07445	ERROR	RDBMS	194	300	3
ORA-04031	ERROR	RDBMS	194	300	3
ORA-00600	ERROR	RDBMS	194	300	3
ORA-27302	ERROR	RDBMS	41	73	1
ORA-27301	ERROR	RDBMS	41	73	1
ORA-27300	ERROR	RDBMS	41	73	1
ORA-19809	ERROR	RDBMS	41	82	1
ORA-19804	ERROR	RDBMS	41	82	1
Incident details	INFO	RDBMS	194	300	3
Pluggable Database Opened	INFO	RDBMS	81	108	2
Shutting down instance	INFO	RDBMS	116	212	2

3.2.3.1.1 Identify databases with the highest number of error events

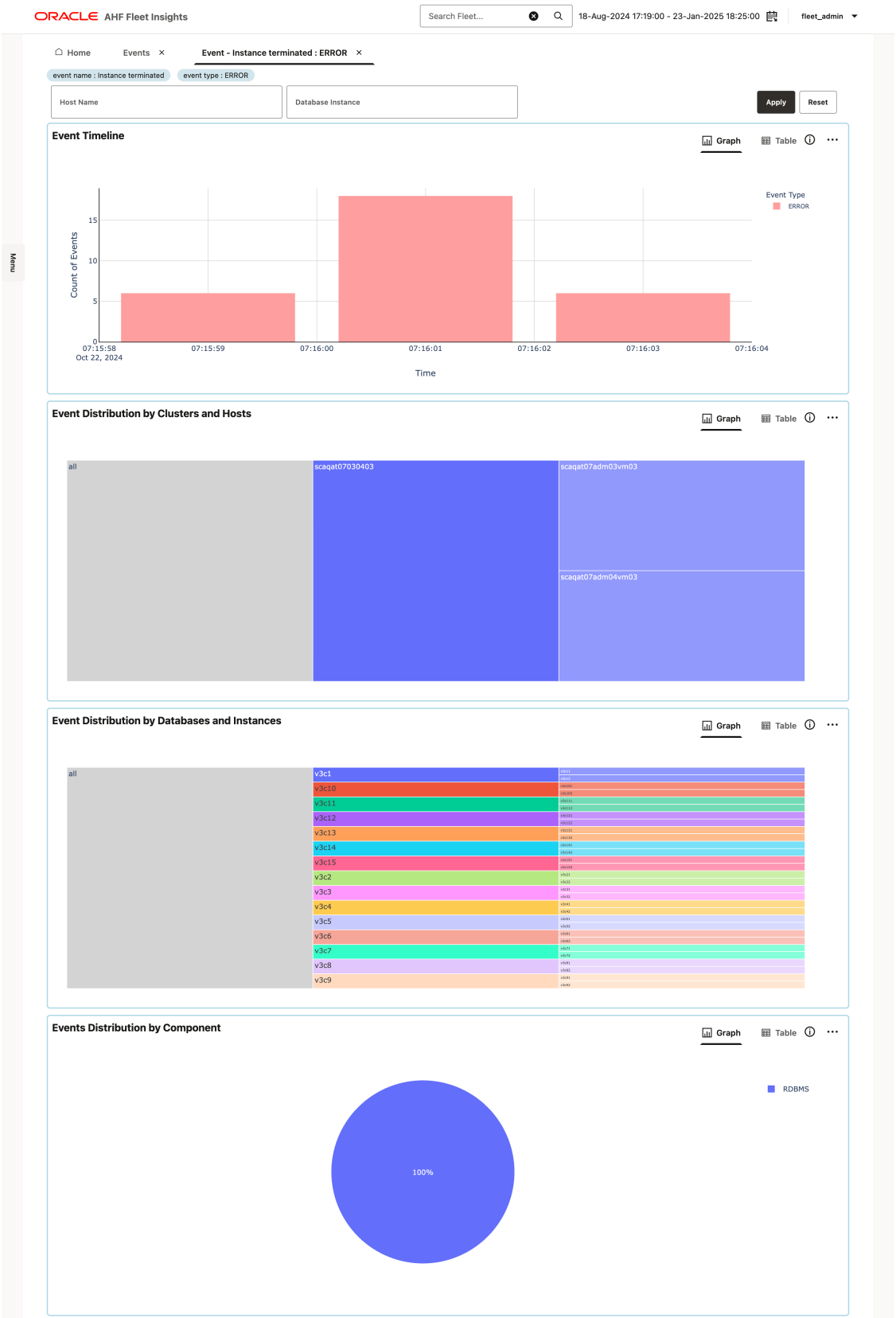
Purpose: Identify the databases having the maximum number of error events.

3.2.3.1.2 Identify clusters with the highest number of error events

Purpose: Identify the clusters having the maximum number of error events.

3.2.3.1.3 Drill-down flow

Figure 3-13 Events drill-down flow



- Investigate a specific error event
- Find the most recent events across the fleet
- Identify anomalies among certain clusters/hosts

3.2.3.1.3.1 Investigate a specific error event

Purpose:

- Find the error that occurred the most and apply it as a filter.
- In the drill-down page, check if there is a spike of occurrence of this event on the timeline chart.
- Filter the hosts on which this event occurred the most.
- Filter the databases on which this event occurred the most.
- Once the filters are applied, pinpoint the insight reports which can be used to further investigate the event.

3.2.3.1.3.2 Find the most recent events across the fleet

Purpose:

- Observe if the new issues occur after a system update.
- Filter by time.
- Monitor events between the last system update and now.

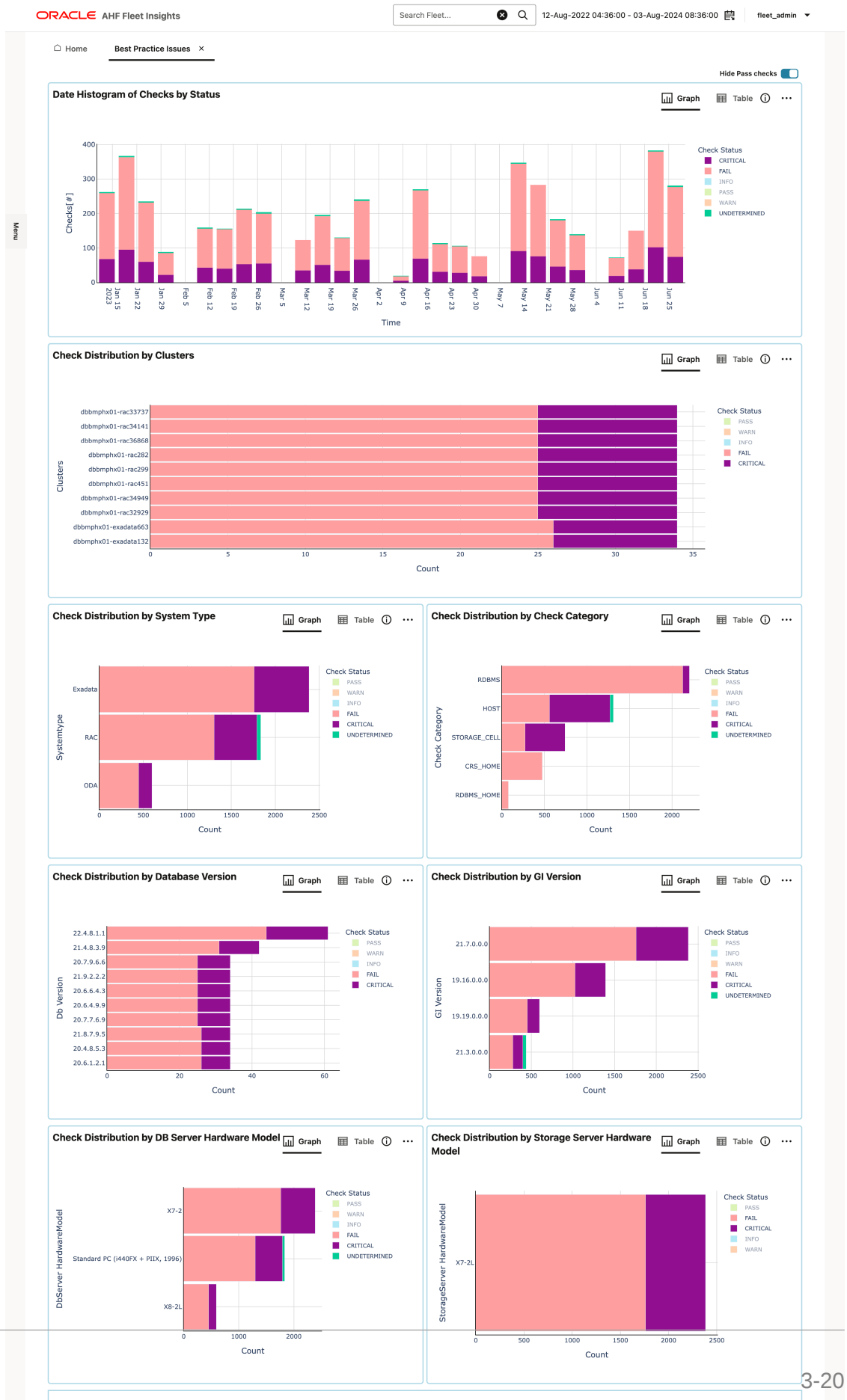
3.2.3.1.3.3 Identify anomalies among certain clusters/hosts

Purpose:

- Analyze if it is more prevalent on certain clusters/hosts.
- Analyze if it is more prevalent on certain databases.
- Filter and go to the corresponding insight report for more granular analysis.

3.2.3.2 Best Practice Issues

Figure 3-14 Best Practice issues



- Identify critical issues across clusters
- Identify critical issues across database server hardware models
- Drill-down flow

3.2.3.2.1 Identify critical issues across clusters

Purpose: Find the top cluster having more number of best practice issues. Within the check distribution by cluster plot, select the top cluster as filter.

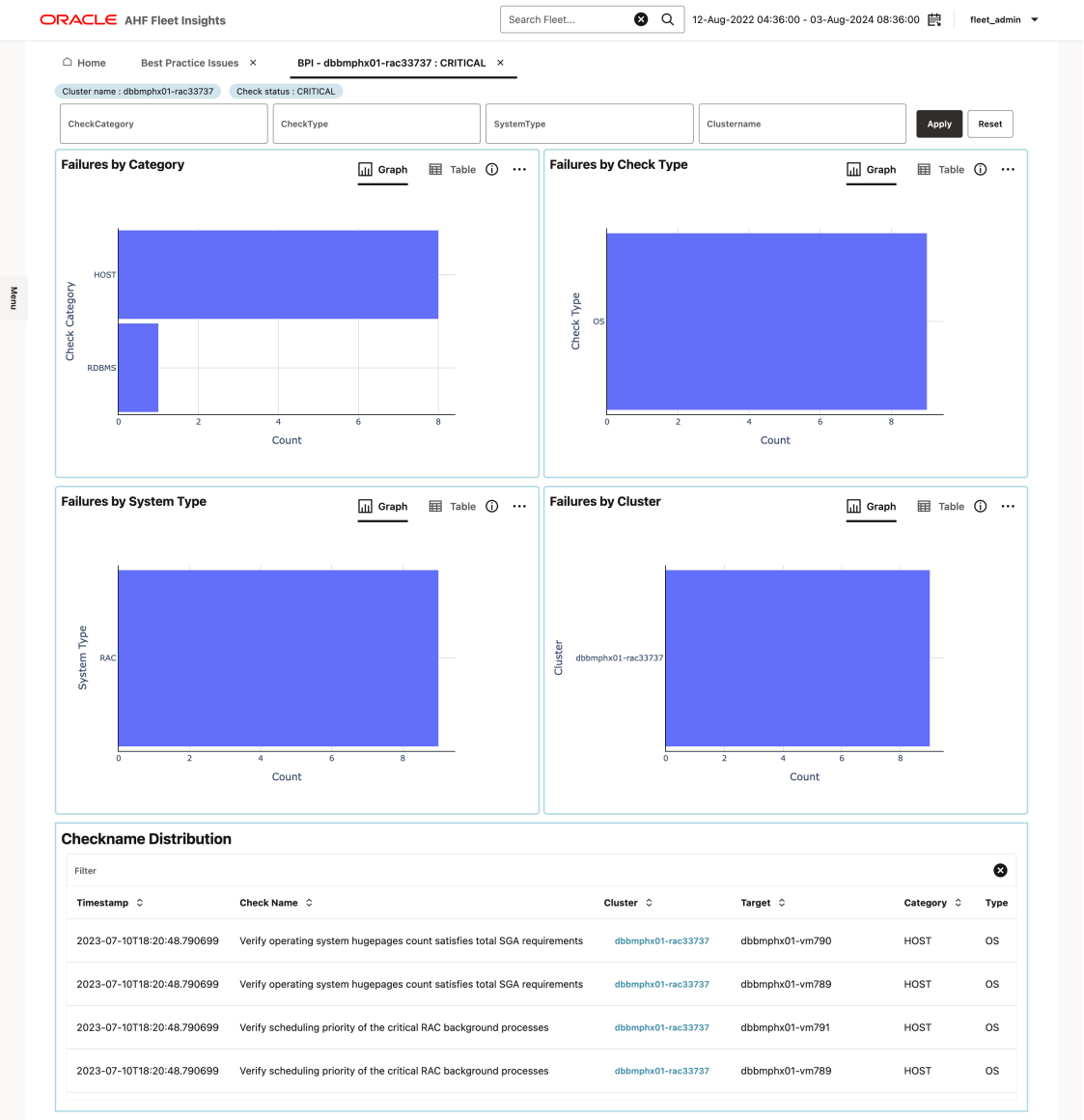
3.2.3.2.2 Identify critical issues across database server hardware models

Purpose:

- Identify the top database server hardware model having more number of best practice issues.
- Filter for the top database server hardware and go on to the next stage of analysis.

3.2.3.2.3 Drill-down flow

Figure 3-15 Best Practice issues drill-down flow



- Identify critical issues in a specific cluster
- Find the distribution of issues on a specific database server hardware model

3.2.3.2.3.1 Identify critical issues in a specific cluster

Audience: DBA

Purpose:

- Select a cluster with more critical checks. Further drill-down is made based on check type, category, system type, and so on. Once the filters are applied on the drill down page, you will end up with a few particular checks.
- Explore the insights report or diagnostic collection for a particular record or drill-down to discover the root cause of an issue.

3.2.3.2.3.2 Find the distribution of issues on a specific database server hardware model

Audience:

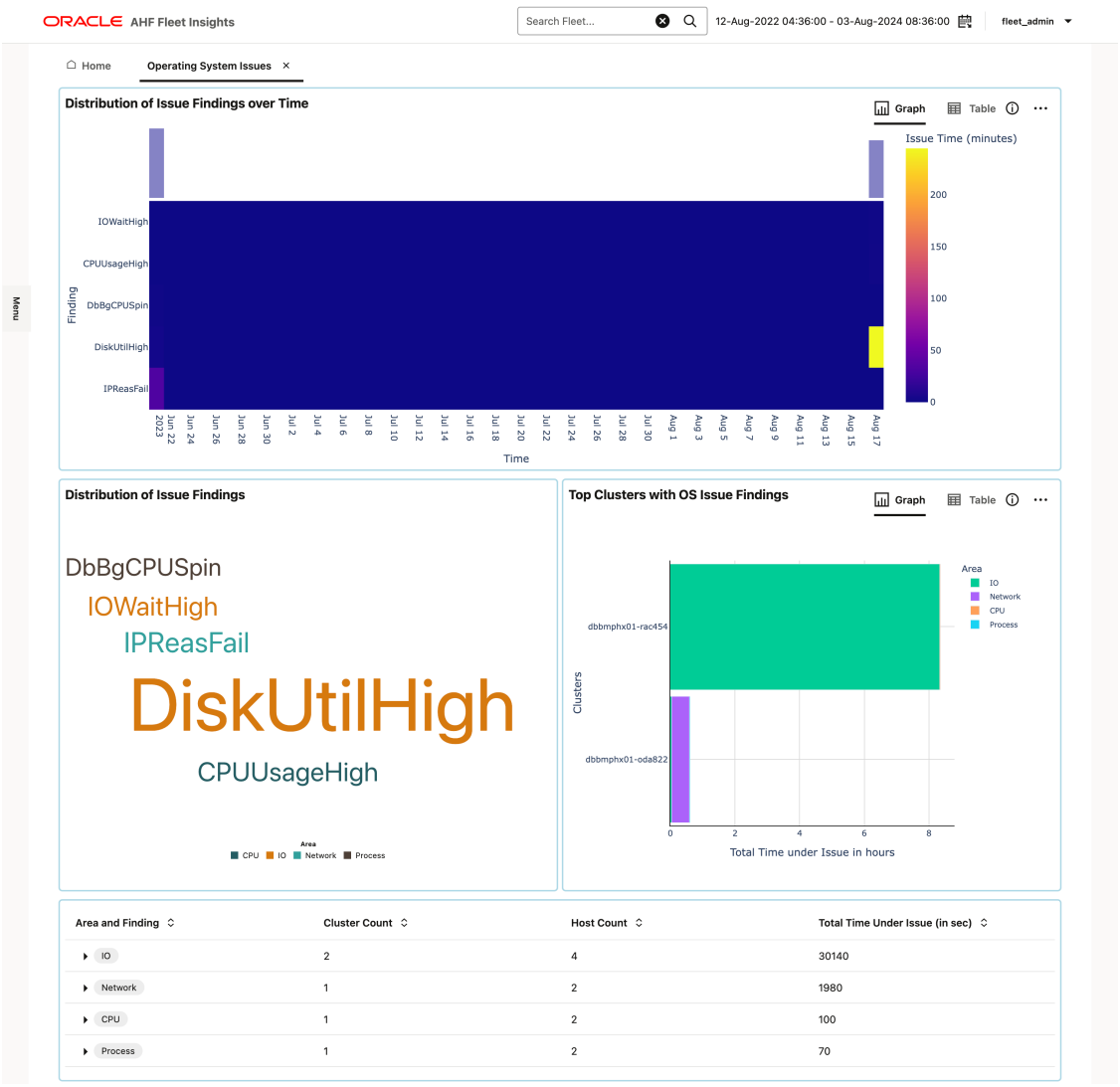
- Fleet admin
- DBA

Purpose:

- Select a database server hardware model with more critical checks. Further drill-down is made based on check type, category, system type, and so on. Once the filters are applied on the drill down page, you will end up with a few particular checks.
- Explore the insights report or diagnostic collection for a particular record or drill-down to discover the root cause of an issue.

3.2.3.3 Operating System Issues

Figure 3-16 Operating system issues



- Identify prominent operating system issues in a given period
- Identify which cluster has been most impacted by operating system issues
- Identify if there was a spike in operating system issues reported during a specific timeframe

3.2.3.3.1 Identify prominent operating system issues in a given period

Purpose: Determine which operating system issues have experienced a significant increase in reports and identify the specific time period during which these spikes occurred.

3.2.3.3.2 Identify which cluster has been most impacted by operating system issues

Purpose: Select the most impacted cluster as a Fleet manager and then drill-down for further analysis. And, as a DBA, you can investigate a particular cluster.

3.2.3.3.3 Identify if there was a spike in operating system issues reported during a specific timeframe

Purpose:

- Within the drill-down page, check the timeline to see if there were any spikes for operating system issues in that particular cluster.
- Identify the host that is most impacted by the operating system issues.
- Finally, go to an Insights report, which would take you to the **OS Issues** section of the Insights report to facilitate more granular analysis.

Drill-down flow

1. Investigate a particular operating system issue.
2. Select the time range where there is a spike in operating system issues.
3. Apply cluster and host filters.
4. Once the filters are applied, pinpoint the insight reports, which can be used to investigate the issue further.

3.2.3.4 Recommended Software

Figure 3-17 Recommended software

- Identify recommended software version to improve the compliance of your fleet

3.2.3.4.1 Identify recommended software version to improve the compliance of your fleet

Purpose:

- Review the MAA-based software recommendations.
- Get a visual representations of what versions were found across the fleet and to what version to update.
- Identify what systems to target first for patch upgrades to get maximum benefits.

3.2.4 Admin

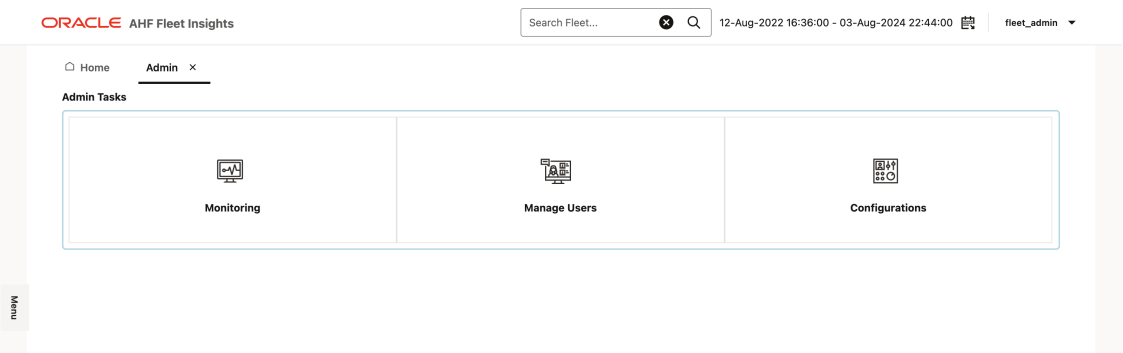
> **Note:**
>
> Only Fleet Admin can perform the following administrative tasks.

- Open Admin dashboard
- Monitoring
- Manage users
- Configurations

3.2.4.1 Open Admin dashboard

Click the drop-down list at the upper-right corner and select **Admin**.

Figure 3-18 Admin dashboard



- **Monitoring**: Enables you to keep track of whether the collections being uploaded are getting processed successfully.
- **Manage Users**: Fleet admin can create new users and assign roles and restrict data access.
- **Configurations**: A single window for the fleet admin to view values across the fleet and reconfigure them when required.

3.2.4.2 Monitoring

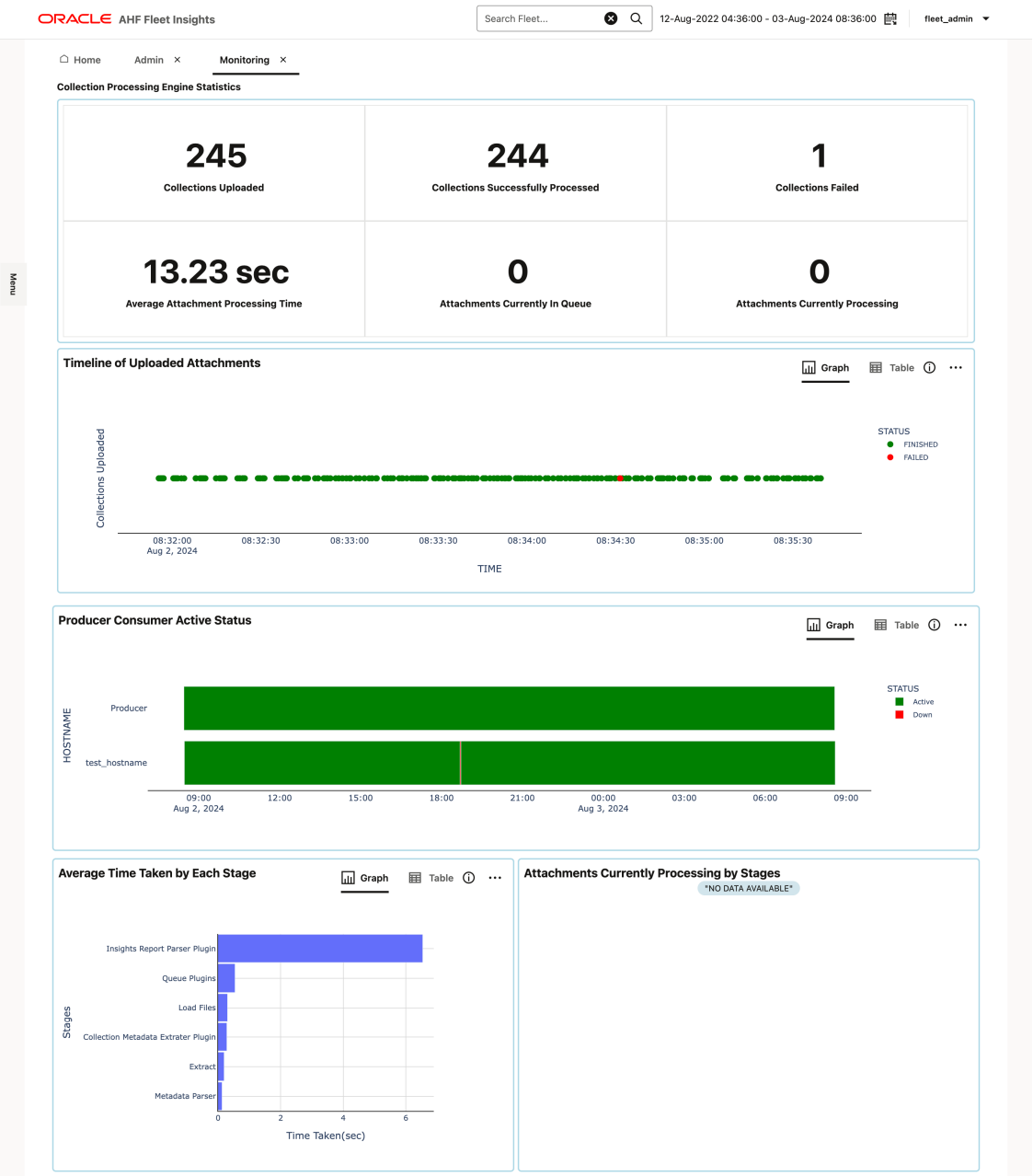
- Keep track of the performance of Fleet Insights application
- Find why was there a failure in processing the collections

3.2.4.2.1 Keep track of the performance of Fleet Insights application

Purpose:

- Check if the collections being uploaded getting processed successfully by the Fleet Insights application.
- Review various stats such as the following for a given time period:
  - Number of collections uploaded
  - Number of collections successfully processed
  - Number of failures
  - Average time to process a collection

Figure 3-19 Track Fleet Insights application performance



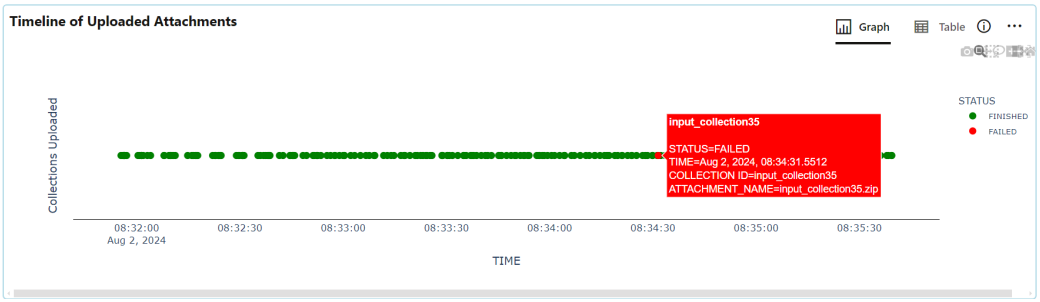
3.2.4.2.2 Find why was there a failure in processing the collections

Purpose:

- Search or filter for failed collections.
- Open collection specific drill-down page to check at what stage of processing there was a failure.
- Open logs to see why there was a failure.

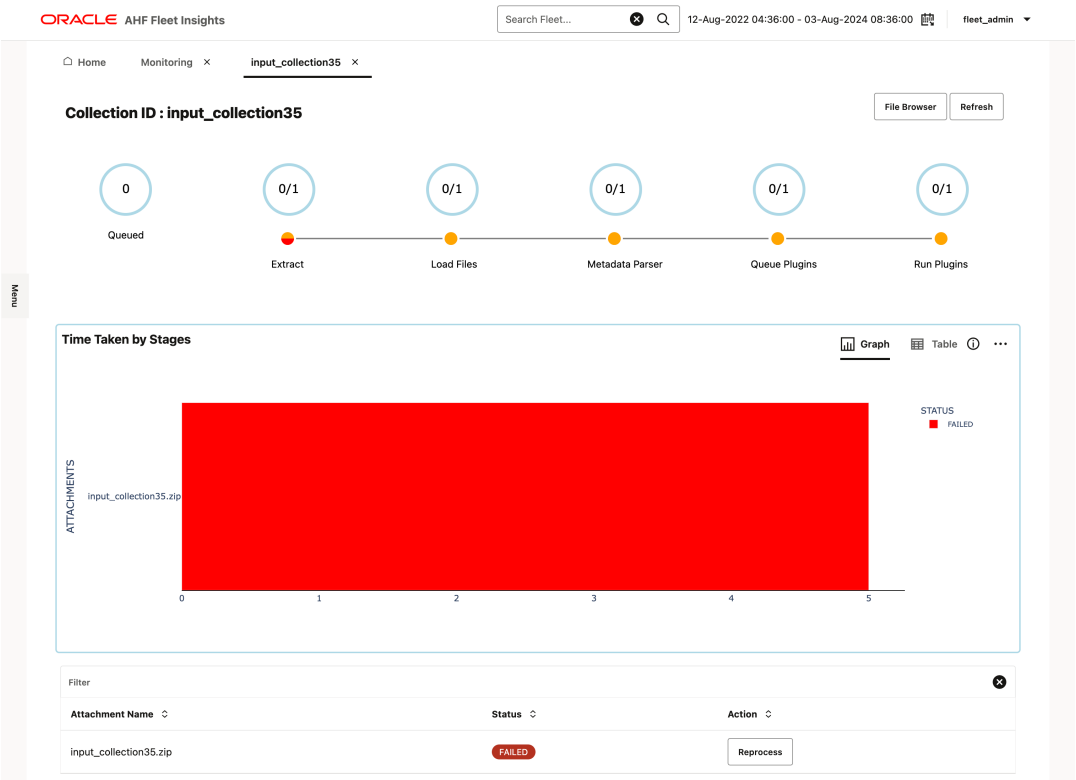
1. Hover the mouse pointer over the failed collections in the **Timeline of Uploaded Collections** section.

Figure 3-20 Timeline of Uploaded Attachments



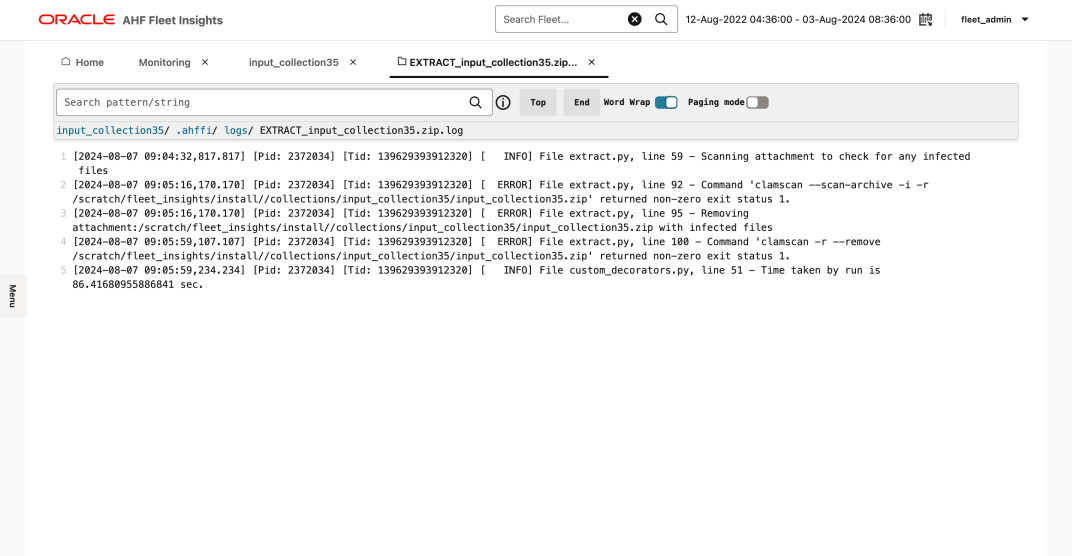
2. Click the scatter points to view details.

Figure 3-21 View collection upload timeline



3. Under **Action**, click **Reprocess** to upload the collection again.
4. In the **Time Taken by Stages** section, click the red bar of the failed attachment to view logs.

Figure 3-22 View failed collection upload logs



3.2.4.3 Manage users

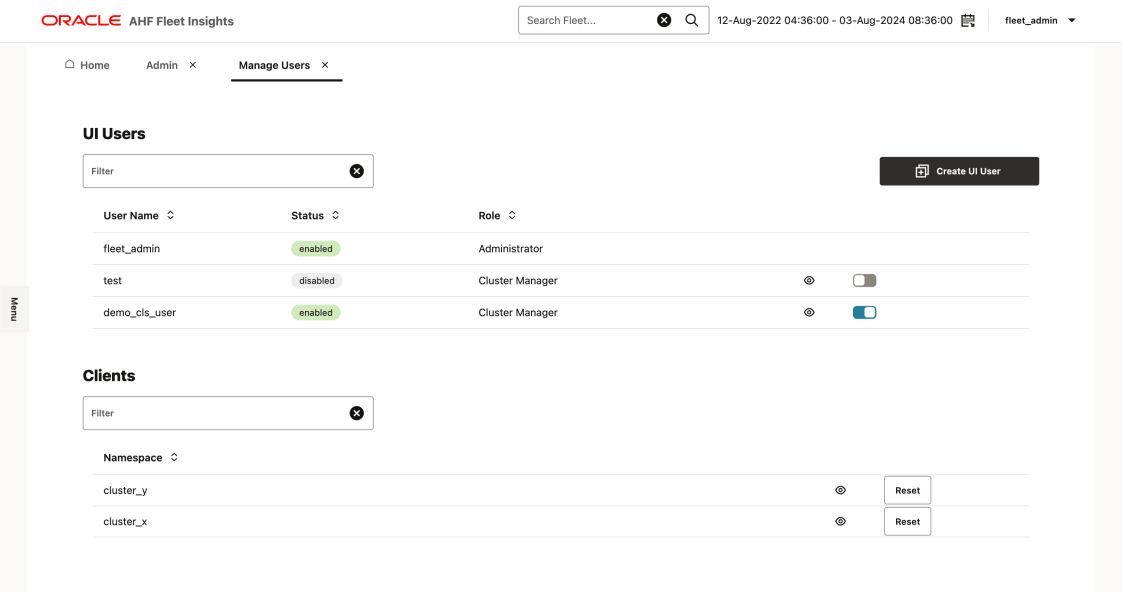
- Manage users as a fleet manager

3.2.4.3.1 Manage users as a fleet manager

Purpose:

- Create user interface users and assign them specific and limited roles and data access.
- Enable or disable cluster managers.
- Restrict cluster managers to their assigned clusters.
- Remove (reset) clients.

Figure 3-23 Manage users



To create a UI user

1. Click **Create UI User**.
2. In the resulting page, enter user name and password, and then select a role (Administrator, Cluster Manager).
3. If you choose to assign Cluster Manager role, **Cluster Access** field is displayed.
4. Click and select the clusters from the list you want to assign to the user.
5. Click **Save**.

To restrict cluster managers to their assigned clusters

1. Slide the toggle button to enable or disable the cluster manager.
2. Click the view icon to the list of cluster assigned to the cluster manager.
3. In the resulting page, click **Edit**, and then add or remove clusters from the list.
4. Click **Save**.

To remove clients

1. Filter the user you want to remove.
2. Click **Reset**.

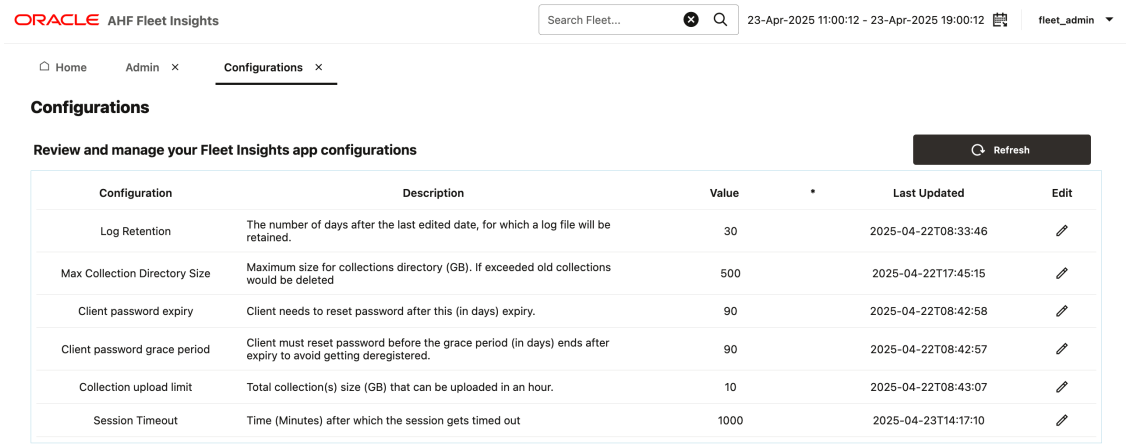
3.2.4.4 Configurations

- View Fleet Insights configurations details

3.2.4.4.1 View Fleet Insights configurations details

Purpose: View Fleet Insights configuration details and reconfigure the values when needed.

Figure 3-24 AHF Fleet Insights configuration parameters



1. Click the edit icon of the parameter you want to reconfigure.
2. Enter a new value and then click the tick mark to save the changes.

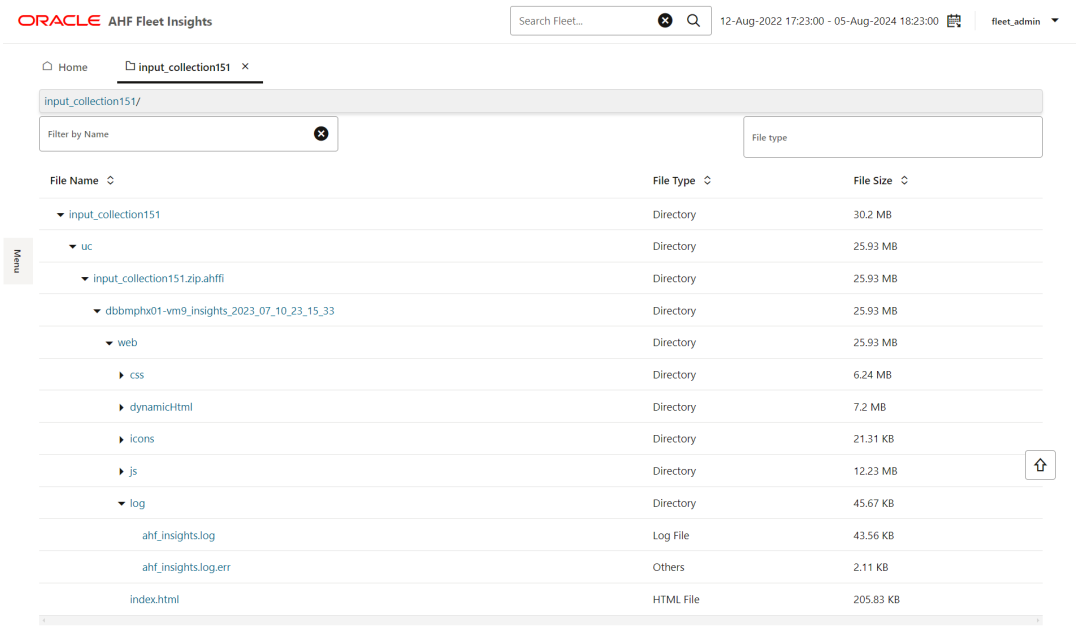
3.2.5 File Viewer

View Files in a Collection: The **Table** view on the **Timeline of Events** and each drill-down page in the **Fleet Topology** and **Insights** sections include a file viewer for accessing files within a collection. You can filter the files by name or type for easier navigation.

The file viewer is available beyond the mentioned pages or sections. You'll find it accessible when you drill down through various other pages or sections.

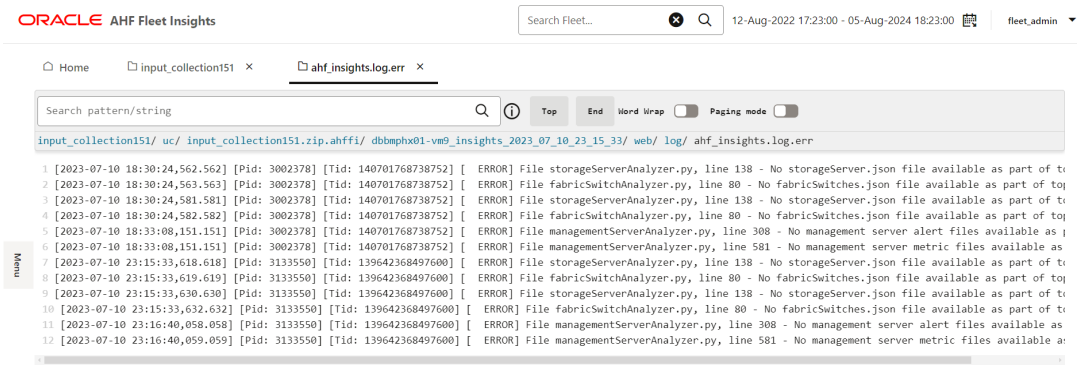
1. Click **Table** to view the collections details in tabular format.
2. Click the file viewer icon of an Insights Report.
3. Expand the tree and locate an error event that you want to investigate.

Figure 3-25 File viewer



4. Click the error log to open and check the cause of the error.

Figure 3-26 Error event log



3.2.6 Common User Interface Functionalities

- **Collapsible Menu Drawer:** Navigate to any section from any page using the collapsible menu drawer.
- **Help Page:** Access answers to FAQs on the help page.
  Click the drop-down list at the upper-right corner and select **Help**.
- **Update User Interface Login Password:** Update your user interface login password easily.
  Click the drop-down list at the upper-right corner and select **Update Password**.

Figure 3-27 Menu drawer

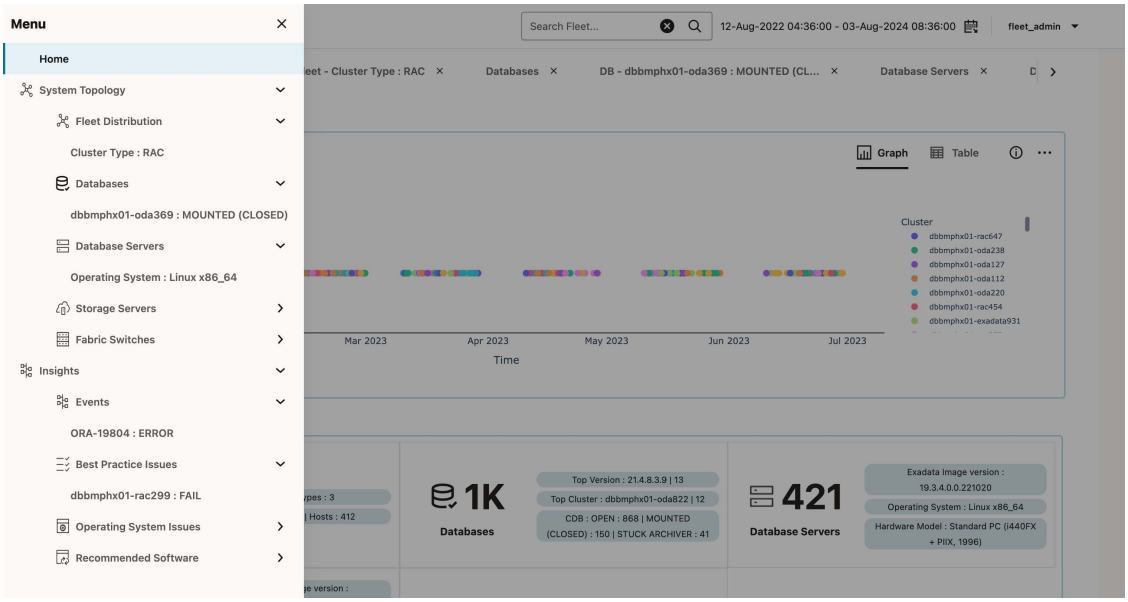


Figure 3-28 AHF Fleet Insights - Home - common functionalities

- **Graph and Table View:** Each section offers both graph and table views for data visualization.
- **Info Icon:** An info icon on each plot provides additional details about the data.
- **CSV Download:** Download the plot data as a CSV file for further analysis. Click the Actions menu (three dots) and select **Download CSV**.

Figure 3-29 AHF Fleet Insights - Home - common functionalities