Upgrade Cisco IoT FND on OVA

Device Compatibility Check

This topic helps you check for the validated device versions that are compatible with Cisco IoT FND Release 5.0. The release versions mentioned in this topic are only the list of validated versions by Cisco IoT FND and not is exhaustive. We recommend you to upgrade your devices to these validated versions and is not a mandate.

- FAR compatibility: See supported device types and versions on Cisco IoT FND Release Notes 5.0
- HER compatibility: See supported device types and versions on Cisco IoT FND Release Notes 5.0
- HSM compatibility: See upgrade hardware security module compatibility on Cisco IoT FND Release Notes 5.0
- TPS compatibility: The TPS server version must match the Cisco IoT FND release version. For example, If you're upgrading to Cisco IoT FND Release 5.0 from Cisco IoT FND Release 4.12.1, your TPS server should be upgraded to Cisco IoT FND Release 5.0.
- Cisco IoT FND compatibility: On initial installation, upgrade the OpenSSH package in the Cisco IoT FND server to RHEL version 8.8 and later versions.

Postgres DB status check

This task guides you in understanding your system status before you perform an upgrade.

Use the following steps to check your system status before proceeding to upgrade your Cisco IoT FND on OVA:

Before you begin

- Take a snapshot of the existing VM before you upgrade.
- Perform a backup of **cgms.properties** file and **cgms_keystore** file in the location, /opt/fnd/data/. You can either SCP these files to another server for backup or you can copy in the same or different folder. Here's an example:

```
root@iot-fnd:~[root@iot-fnd ~]#
root@iot-fnd:~[root@iot-fnd ~]# cd /opt/fnd/data
root@iot-fnd:/opt/fnd/data[root@iot-fnd data]#
root@iot-fnd:/opt/fnd/data[root@iot-fnd data]#ls
cgms_keystore  cgms.properties  cisco-sudi-ca.pem  userPropertyTypes.xml
root@iot-fnd:/opt/fnd/data[root@iot-fnd data]#
root@iot-fnd:/opt/fnd/data[root@iot-fnd data]# cp cgms.properties
cgms.properties_backup_09May2025
[root@iot-fnd data]# keytool -importkeystore -srckeystore cgms_keystore -destkeystore
cgms_keystore_backup_9May2022 -deststoretype PKCS12
Importing keystore cgms_keystore to cgms_keystore_backup_9May2022...
Enter destination keystore password:
Re-enter new password:
Enter source keystore password:
Entry for alias cgms successfully imported.
Entry for alias cisco_sudi successfully imported.
Entry for alias jmarconi successfully imported.
Import command completed:  3 entries successfully imported, 0 entries failed or cancelled
[root@iot-fnd data]#
[root@iot-fnd data]# ls
cgms_keystore               cgms_keystore.selfsigned  cgms.properties_backup_09May2022
  fnd_psk.keystore
cgms_keystore_backup_9May2025  cgms.properties          cisco-sudi-ca.pem
     userPropertyTypes.xml
[root@iot-fnd data]#
```

- Ensure that the Postgres services are running before perfomring an upgrade.

Procedure

Step 1 Using the SSH terminal and navigate to the root directory.

Step 2 Run the following command:

Example:

```
/opt/scripts/status.sh

[root@iot-fnd ~]# /opt/scripts/status.sh
--------------------
● postgresql-12.service - PostgreSQL 12 database server
   Loaded: loaded (/usr/lib/systemd/system/postgresql-12.service; enabled; vendor preset: disabled)
   Active: active (running) since Mon 2022-05-09 02:01:29 PDT; 2h 6min ago
     Docs: https://www.postgresql.org/docs/12/static/
 Main PID: 27638 (postmaster)
    Tasks: 26
   Memory: 250.5M
   CGroup: /system.slice/postgresql-12.service
--------------------
● influxdb.service - InfluxDB is an open-source, distributed, time series database
   Loaded: loaded (/usr/lib/systemd/system/influxdb.service; enabled; vendor preset: disabled)
   Active: active (running) since Mon 2022-05-09 02:02:39 PDT; 2h 5min ago
     Docs: https://docs.influxdata.com/influxdb/
 Main PID: 27892 (influxd)
```

```
    Tasks: 21
   Memory: 219.0M
--------------------
● kapacitor.service - Time series data processing engine.
   Loaded: loaded (/usr/lib/systemd/system/kapacitor.service; enabled; vendor preset: disabled)
   Active: active (running) since Mon 2022-05-09 02:02:06 PDT; 2h 5min ago
     Docs: https://github.com/influxdb/kapacitor
 Main PID: 27805 (kapacitord)
    Tasks: 14
   Memory: 21.0M
--------------------
fnd-container is running, pid=61255
CONTAINER ID        NAME                CPU %               MEM USAGE / LIMIT     MEM %
   NET I/O             BLOCK I/O           PIDS
a02e6388607d        fnd-container       6.44%               2.612GiB / 23.38GiB   11.17%
   17MB / 13.7MB       20.3MB / 2.64MB     580
--------------------
fogd-container is running, pid=63469
CONTAINER ID        NAME                CPU %               MEM USAGE / LIMIT    MEM %
  NET I/O             BLOCK I/O           PIDS
a40aa29e2392        fogd-container      6.38%               2.18GiB / 23.38GiB   9.32%
  434kB / 135kB       8.19kB / 145kB      99
--------------------
[root@iot-fnd ~]#
docker version
[root@iot-fnd ~]# docker version
Client: Docker Engine - Community
 Version:           19.03.15
 API version:       1.40
 Go version:        go1.13.15
 Git commit:        99e3ed8919
 Built:             Sat Jan 30 03:17:57 2021
 OS/Arch:           linux/amd64
 Experimental:      false

Server: Docker Engine - Community
 Engine:
  Version:          19.03.15
  API version:      1.40 (minimum version 1.12)
  Go version:       go1.13.15
  Git commit:       99e3ed8919
  Built:            Sat Jan 30 03:16:33 2021
  OS/Arch:          linux/amd64
  Experimental:     false
 containerd:
  Version:          1.4.4
  GitCommit:        05f951a3781f4f2c1911b05e61c160e9c30eaa8e
 runc:
  Version:          1.0.0-rc93
  GitCommit:        12644e614e25b05da6fd08a38ffa0cfe1903fdec
 docker-init:
  Version:          0.18.0
  GitCommit:        fec3683
You have new mail in /var/spool/mail/root
[root@iot-fnd ~]#
/opt/fnd/scripts/fnd-container.sh status
[root@iot-fnd ~]# /opt/fnd/scripts/fnd-container.sh status
fnd-container is running, pid=61255
CONTAINER ID        NAME                CPU %               MEM USAGE / LIMIT     MEM %
   NET I/O             BLOCK I/O           PIDS
a02e6388607d        fnd-container       6.47%               2.613GiB / 23.38GiB   11.18%
   17MB / 13.8MB       20.3MB / 2.64MB     592
[root@iot-fnd ~]#
You have new mail in /var/spool/mail/root
```

```
[root@iot-fnd ~]#
docker exec -it fnd-container /etc/init.d/cgms status
[root@iot-fnd ~]# docker exec -it fnd-container /etc/init.d/cgms status
IoT-FND Version 4.7.2-8
05-09-2022 04:09:46 PDT: INFO: IoT-FND database server: 192.68.5.1
05-09-2022 04:09:47 PDT: INFO: IoT-FND database connection verified.
05-09-2022 04:09:47 PDT: INFO: IoT FND timeseries database server: 192.68.5.1
05-09-2022 04:09:47 PDT: INFO: IoT FND kapacitor server: 192.68.5.1
05-09-2022 04:09:48 PDT: INFO: IoT-FND timeseries database/kapacitor connection verified.
05-09-2022 04:09:49 PDT: INFO: IoT-FND application server is up and running.
05-09-2022 04:09:50 PDT: INFO: IoT-FND is up and running.
[root@iot-fnd ~]#
rpm -qa | grep -i postgres
root@iot-fnd:/opt/fnd/data[root@iot-fnd data]# rpm -qa | grep -i postgres
postgresql96-devel-9.6.15-1PGDG.rhel7.x86_64
postgresql96-libs-9.6.15-1PGDG.rhel7.x86_64
postgresql96-server-9.6.15-1PGDG.rhel7.x86_64
postgresql96-9.6.15-1PGDG.rhel7.x86_64
cgms-postgres-4.5.1-11.x86_64
postgresql96-contrib-9.6.15-1PGDG.rhel7.x86_64
root@iot-fnd:/opt/fnd/data[root@iot-fnd data]#
```

You can view all the statuses of your Cisco IoT FND on OVA before proceeding with an upgrade.

Cisco IoT FND on OVA Upgrade Matrix

The following table provides a detailed overview of the versions of different software components bundled with each Cisco IoT FND release. It includes the version numbers for Postgres, Docker Server, and the Red Hat Enterprise Linux (RHEL) operating system associated with specific Cisco IoT FND releases.

Cisco IoT FND Version	Postgres Version	Docker Server Version	RHEL OS Version
5.0.0	12.12	19.03.15	8.10
4.12.0	12.12	19.03.15	8.8
4.11.0	12.12	19.03.15	8.8
4.10.0	12.12	19.03.15	8.7
4.9.1	12.12	19.03.15	8.6
4.9.0	12.9	19.03.15	8.6

Upgrade Database and Docker Server Image

Use this section to upgrade the database and the docker server image. Run the rpm scripts and auto-integrate the DB with Cisco IoT FND scripts.

Before you begin

- Cisco IoT FND OVA upgrade will not upgrade the RHEL OS version. The RHEL version differs for different versions of Cisco IoT FND. After upgrading the OVA, we recommend you to upgrade the OS sooner than later. Although Cisco IoT FND is a secure application, OS security and patches must be regularly updated in accordance to guidance from Cisco.
- Use the following procedure to upgrade from Cisco IoT FND Release 4.9.x, 4.10.x, 4.11.x, and 4.12.x versions to Cisco IoT FND Release 5.0.x

Procedure

Step 1 Obtain the Cisco IoT FND upgrade scripts from Cisco.

Step 2 Check the RHEL OS version before upgrading Cisco IoT FND OVA to Cisco IoT FND Release 5.0 or higher.

Example:

```
[root@fnd451testupgrade ~]# hostnamectl
   Static hostname: fnd451testupgrade
         Icon name: computer-vm
           Chassis: vm
        Machine ID: 58eb8d728d834d28ad426eca3c9b9c4e
           Boot ID: 40511dab9f4b4beaa8de82fb105423c9
    Virtualization: vmware
  Operating System: Red Hat Enterprise Linux
       CPE OS Name: cpe:/o:redhat:enterprise_linux:7.5:GA:server
            Kernel: Linux 3.10.0-862.el7.x86_64
      Architecture: x86-64
[root@fnd451testupgrade ~]#r
```

Step 3 Extract the cgms rpms files to the Cisco IoT FND server.

Example:

If you are upgrading the DB and the docker server image for Cisco IoT FND release 5.0:

a. Download the following upgrade script from Cisco.

CISCO-IOTFND-VPI-K9-UPGRADE-SCRIPTS-5.0-101.zip

b. Extract the file to get the rpm:

upgrade-ova-5.0-101.rpm

c. Transfer the extracted rpm file to the Cisco IoT FND server.

Step 4 Navigate to the directory where the rpm file is located.

Example:

cd /opt or any directory where the *upgrade-ova-5.0-101.rpm file* is copied.

Step 5 Run the following upgrade script:

Example:

```
rpm -Uvh upgrade-ova-<release>-<build number>.rpm
```

```
root@iot-fnd:/opt[root@iot-fnd opt]# rpm -Uvh upgrade-ova-5-0-2-8.rpm
Preparing...
(1%)###############(100%)
```

```
Updating / installing...
   1:upgrade-ova-5-0-2-8
   (1%)###############(100%)

Started installer in background. Please check ~/rpm.log in few minutes for details.
root@iot-fnd:/optYou have new mail in /var/spool/mail/root
[root@iot-fnd opt]#
Mon May  9 01:59:29 PDT 2022 Background installer started
Mon May  9 01:59:29 PDT 2022 Please wait until the 'RPM installation completed' message is logged

Mon May  9 01:59:29 PDT 2022 Upgrading cgms-postgres-5.0.2-8.x86_64.rpm
Preparing...                          ########################################
Updating / installing...
cgms-postgres-5.0.2-8                 ########################################
Cleaning up / removing...
cgms-postgres-5.0-101                ########################################

Mon May  9 01:59:47 PDT 2022 Upgrading cgms-influx-4.7.2-8.x86_64.rpm
Preparing...                          ########################################
Updating / installing...
cgms-influx-5.0.2-8                   ########################################
Cleaning up / removing...
cgms-influx-5.0-101                  ########################################

Mon May  9 02:00:04 PDT 2022 Upgrading monit-5.25.3-1.el7.x86_64.rpm
warning: monit-5.25.3-1.el7.x86_64.rpm: Header V4 RSA/SHA1 Signature, key ID 222b0e83: NOKEY
Preparing...                          ########################################
 package monit-5.25.3-1.el7.x86_64 is already installed

Mon May  9 02:00:18 PDT 2022 Stopping services
Mon May  9 02:00:58 PDT 2022 Upgrading Postgresql to 12.5
Preparing...                          ########################################
Updating / installing...
postgresql12-libs-12.5-1PGDG.rhel7    ########################################
postgresql12-12.5-1PGDG.rhel7         ########################################
postgresql12-server-12.5-1PGDG.rhel7  ########################################
postgresql12-contrib-12.5-1PGDG.rhel7 ########################################
Cleaning up / removing...
postgresql12-contrib-12.4-1PGDG.rhel7 ########################################
postgresql12-server-12.4-1PGDG.rhel7  ########################################
postgresql12-12.4-1PGDG.rhel7         ########################################
postgresql12-libs-12.4-1PGDG.rhel7    ########################################
Mon May  9 02:01:27 PDT 2022 Restarting Postgresql

Mon May  9 02:01:40 PDT 2022 Stopping InfluxDB and Kapacitor
Mon May  9 02:01:50 PDT 2022 Upgrading influxdb-1.8.3.x86_64.rpm
Preparing...                          ########################################
Updating / installing...
influxdb-1.8.3-1                      warning: /etc/influxdb/influxdb.conf created as
/etc/influxdb/influxdb.conf.rpmnew
########################################
Cleaning up / removing...
influxdb-1.5.3-1                      ########################################
Mon May  9 02:02:02 PDT 2022 Upgrading kapacitor-1.5.7-1.x86_64.rpm
Preparing...                          ########################################
Updating / installing...
kapacitor-1.5.7-1                     warning: /etc/kapacitor/kapacitor.conf created as
/etc/kapacitor/kapacitor.conf.rpmnew
########################################
Cleaning up / removing...
kapacitor-1.5.0-1                     ########################################
Mon May  9 02:02:06 PDT 2022 Restarting InfluxDB and Kapacitor

Mon May  9 02:02:20 PDT 2022 Stopping Docker
```

```
Mon May  9 02:02:26 PDT 2022 Upgrading Docker to 19.03.15
warning: container-selinux-2.119.2-1.911c772.el7_8.noarch.rpm: Header V3 RSA/SHA256 Signature, key
ID f4a80eb5: NOKEY
Preparing...
(1%)###############(100%)
Updating / installing...
   1:container-selinux-2:2.119.2-1.911
   (1%)###############(100%)
Cleaning up / removing...
   2:container-selinux-2:2.42-1.gitad8
   (1%)###############(100%)
Preparing...
(1%)###############(100%)

Updating / installing...
   1:docker-ce-cli-1:19.03.15-3.el7
   (1%)###############(100%)
   2:containerd.io-1.4.4-3.1.el7
   (1%)###############(100%)
   3:docker-ce-3:19.03.15-3.el7
   (1%)###############(100%)
/usr/bin/dockerd has not been configured as an alternative for dockerd
Cleaning up / removing...
   4:docker-ce-3:18.09.6-3.el7
   (1%)###############(100%)
   5:containerd.io-1.2.5-3.1.el7
   (1%)###############(100%)
   6:docker-ce-cli-1:18.09.6-3.el7
   (1%)###############(100%)
Mon May  9 02:04:11 PDT 2022 Restarting Docker
Mon May  9 02:04:29 PDT 2022 Restarting services
Mon May  9 02:04:59 PDT 2022 RPM installation completed
```

Your Cisco IoT FND on OVA upgrade is complete.

Upgrade Cisco IoT FND Container Images

Use this topic to upgrade the containerized versions of Cisco IoT FND.

Procedure

Step 1 Open the SSH terminal and log in to Cisco IoT server as a root user.

Step 2 Run the following script:

Example:

```
/opt/fnd/scripts/upgrade.sh
```

```
[root@iot-fnd ~]# /opt/fnd/scripts/upgrade.sh

This script must be run with root privileges.
Usage: Load container images: No resource required
       For container reload: No resource required

1) Load container images
2) Container reload
```

```
3) Quit
Enter your choice: 1
Do you want to download docker image from registry (y/n)?y
Enter docker registry [devhub-docker.cisco.com]: dockerhub.cisco.com
Enter docker image tag: 5.0.2-8
Downloading FND docker image...
5.0.2-8: Pulling from field-network-director-dev-docker/fnd-image
42ae914c6f41: Pull complete
ea3c714182eb: Pull complete
177abefb5b93: Pull complete
e696bdc28724: Pull complete
89dd87262f50: Pull complete
ff6164c0609f: Pull complete
89a0b2205b62: Pull complete
4dbd23bb6e45: Pull complete
Digest: sha256:2ae8a3cba38ea28156a2c3db55cd8cea0448888a7704479cac33b665d8b2a132
Status: Downloaded newer image for
dockerhub.cisco.com/field-network-director-dev-docker/fnd-image:5.0.2-8
dockerhub.cisco.com/field-network-director-dev-docker/fnd-image:5.0.2-8
Downloading Fog Director docker image...
5.0.2-8: Pulling from fog-director-dev-docker/fogd-image
5e9a6732a7a3: Pull complete
55a104320bff: Pull complete
506e5a93cf62: Pull complete
9b2523a38071: Pull complete
8e8389537d47: Pull complete
e6fcef979884: Pull complete
e2e278b80221: Pull complete
63bc79650477: Pull complete
Digest: sha256:16f3227fbac74804f1e2a77aa57ebeeb5b9f05eb4efb0ddccf242865fe673634
Status: Downloaded newer image for dockerhub.cisco.com/fog-director-dev-docker/fogd-image:5.0.2-8
dockerhub.cisco.com/fog-director-dev-docker/fogd-image:5.0.2-8

1) Load container images
2) Container reload
3) Quit
Enter your choice: 2
Stopping FND container...
fnd-container
Remove FND container...
fnd-container
Prune Docker container...
Starting FND container...
a02e6388607d79504f082dccf179514e5dc2d6bcd34021beac21baf1a555c266
Stopping Fog Director container...
fogd-container
Remove Fog Director container...
fogd-container
Prune Docker container...
Starting Fog Director container...
a40aa29e2392e1e99a5f024d3d5838712d66ef638f0c6b0bf209b1932076611c

1) Load container images
2) Container reload
3) Quit
Enter your choice: 3
You have new mail in /var/spool/mail/root
[root@iot-fnd ~]#
```

Step 3 Enter **1** to load the container images.

Example:

```
[root@iot-fnd ~]# /opt/fnd/scripts/upgrade.sh
```

```
This script must be run with root privileges.
Usage: Load container images: No resource required
       For container reload: No resource required

1) Load container images
2) Container reload
3) Quit
Enter your choice: 1
Do you want to download docker image from registry (y/n)? y
Enter docker registry [devhub-docker.cisco.com]: dockerhub.example.com
Enter docker image tag: 5.0-1
Downloading FND docker image...
5.0.2-8: Pulling from example-docker-repo/fnd-image
a3ed95caeb02: Pull complete
4e9f1a5e87b7: Pull complete
bcd8f8dc5c34: Pull complete
c5e155d5a1d1: Pull complete
5b8c6e5e9b45: Pull complete
b5e3b5c3f5b2: Pull complete
f5b3c27c7f9f: Pull complete
Digest: sha256:8d3d7b5e8d3f1c2b1e8b2f1b7c9a1234567890abcdef1234567890abcdef1234
Status: Downloaded newer image for dockerhub.example.com/example-docker-repo/fnd-image:5.0.2-8
dockerhub.example.com/example-docker-repo/fnd-image:5.0-1
Downloading Fog Director docker image...
5.0-1: Pulling from example-docker-repo/fogd-image
9f9a1c3f5f12: Pull complete
6c5a9f7e9b34: Pull complete
8d5e3b3c5f6b: Pull complete
b5f1c9e7d1b2: Pull complete
a5c2b6e4f8e7: Pull complete
d1e3f5b4c6d3: Pull complete
Digest: sha256:5e8d3f1a2b3c4d5e6f7a8b9c0d1e2f3a4b5c6d7e8f9a0b1c2d3e4f5g6h7i8j9k
Status: Downloaded newer image for dockerhub.example.com/example-docker-repo/fogd-image:5.0.2-8
dockerhub.example.com/example-docker-repo/fogd-image:5.0.2-8

1) Load container images
2) Container reload
3) Quit
Enter your choice: 3
[root@iot-fnd ~]#
```

Step 4 Download the latest container image for Cisco IoT FND from devhub-docker.cisco.com.

Step 5 After the images are downloaded successfully, enter **2** to reload container.

Example:

```
[root@iot-fnd ~]# /opt/fnd/scripts/upgrade.sh

This script must be run with root privileges.
Usage: Load container images: No resource required
       For container reload: No resource required

1) Load container images
2) Container reload
3) Quit
Enter your choice: 2
Stopping FND container...
fnd-container
Remove FND container...
fnd-container
Prune Docker containers...
Deleted Containers:
fnd-container
```

```
Starting FND container...
c8e1f9a8d7c2b3a4e5f6d7c8b9a0b1c2d3e4f5g6h7i8j9k0l1m2n3o4p5q6r7s8
Stopping Fog Director container...
fogd-container
Remove Fog Director container...
fogd-container
Prune Docker containers...
Deleted Containers:
fogd-container

Starting Fog Director container...
b7c6d5e4f3g2h1i0j9k8l7m6n5o4p3q2r1s0t9u8v7w6x5y4z3a2b1c0d9e8f7g6

1) Load container images
2) Container reload
3) Quit
Enter your choice: 3
[root@iot-fnd ~]#
```

Step 6 Enter **3** to quit the menu.

Cisco IoT FND containers are upgraded.

Post Upgrade Checklist

Use the following steps to check the DB and Cisco IoT FND status to ensure your upgrade is successful:

Before you begin

Use the following credentials for SSH access after upgrading OVA:

- Username: fnduser
- Password: C!sco123

  See Guidelines for resetting password.

Procedure

Step 1 Log in to the server or machine using SSH.

Step 2 Execute the `/opt/scripts/status.sh` command:

Example:

```
/opt/scripts/status.sh

Checking system status...

Service: Database
Status: Running
Uptime: 24 hours

Service: IoT FND
Status: Running
Uptime: 12 hours
```

```
Service: Web Server
Status: Stopped
Action Required: Restart service

Disk Usage:
Filesystem      Size  Used Avail Use% Mounted on
/dev/sda1        50G   30G   18G  63% /

Memory Usage:
Total: 8GB
Used:  4GB
Free:  4GB

Network Status:
eth0: Connected
IP Address: 192.168.1.10

All critical services are operational except the Web Server. Please address the issues noted above.
```

Step 3 Execute the `docker version` command:

Example:

```
docker version
```

```
Client: Docker Engine - Community
 Version:           20.10.14
 API version:       1.41
 Go version:        go1.16.15
 Git commit:        a224086
 Built:             Thu Mar 24 01:50:09 2022
 OS/Arch:           linux/amd64
 Context:           default
 Experimental:      true

Server: Docker Engine - Community
 Engine:
  Version:          20.10.14
  API version:      1.41 (minimum version 1.12)
  Go version:       go1.16.15
  Git commit:       87a90dc
  Built:            Thu Mar 24 01:48:43 2022
  OS/Arch:          linux/amd64
  Experimental:     false
 containerd:
  Version:          1.5.11
  GitCommit:        3df54a852345ae127d1fa3092b95168e4a88e2f8
 runc:
  Version:          1.0.3
  GitCommit:        f46b6ba2c9314cfc8caae24a32ec5fe9ef1059fe
 docker-init:
  Version:          0.19.0
  GitCommit:        de40ad0
```

Step 4 Execture the `/opt/fnd/scripts/fnd-container.sh status` command to check the status of the Cisco IoT FND container:

Example:

```
/opt/fnd/scripts/fnd-container.sh status
```

```
Checking IoT FND container status...

Container Name: fnd-container
Status: Running
Uptime: 36 hours
CPU Usage: 15%
```

```
Memory Usage: 512MB / 2GB
Network: Active
  IP Address: 172.17.0.2
  Port Mappings: 8080:80, 8443:443

Last Health Check: Passed
Health Check Interval: 5 minutes

All monitored services within the container are operational.
```

Step 5 Execute the `docker exec -it fnd-container /etc/init.d/cgms status` command to check the status of the cgms service inside the Cisco IoT FND container.

Example:

```
docker exec -it fnd-container /etc/init.d/cgms status
```

```
Checking status of cgms service...

cgms service is running
PID: 1234
Uptime: 24 hours
Listening on Port: 9090

No issues detected with the cgms service.
```

Log into Cisco IoT FND to check if the services are working fine.

For example, you can refresh the metrics for a couple of devices or add/delete devices using CSV.

Upgrade RHEL Version

This section provides instructions on how to perform an in-place upgrade from Red Hat Enterprise Linux 7 to Red Hat Enterprise Linux 8 using the Leapp utility.

Procedure

Follow the instructions provided in the Red Hat documentation about Upgrading from RHEL 7 to RHEL 8.