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Using the Command-Line Interface

Starting from Cisco CMX 10.3.1, you can use the **Tab** key to auto complete any Cisco CMX command on the command line interface. If you enter **cmxos** and then click the **Tab** key, the CLI displays the available keywords. If you enter a partial string and then click the **Tab** key, the CLI then displays the complete string.

cassandraexport

To export Cisco CMX history data from Cassandra to a CSV file, use the **cassandraexport** command.

cassandraexport {**--date** *<yyyy/mm/dd>*} [{**--table** *<tablename>*|**--file** *<filename>*|**--sql** *<sql statement>*|**--rowsperfetch** *<rows per fetch>*}]

Syntax Description

--date *<yyyy/mm/dd>*	Date on which the export is to be performed. This is required.
--table *<table name>*	(Optional) Name of the table to export.
--file *<filename>*	(Optional) Name of the CSV file. The default is /tmp/CassandraExport_sql.csv.
--sql *<sql statement>*	This option is not currently supported.
--rowsperfetch *<rows per fetch>*	(Optional) The default is 1000 rows.

Command Default

None.

Command Modes

cmxadmin (non-root) user

Command History

Release	Modification
Cisco CMX Release 10.3.0	This command was introduced.

Usage Guidelines

This command extracts a maximum of only one day of data, starting from midnight of the date given to the time when the command is issued.

You can use these methods to export Cisco CMX data from Cassandra:

- The method that we most recommend is through the Notifications feature (**Manage > Notifications> New Notification**). For more information, see the "Managing Notifications from Applications" section in the *Cisco Connected Mobile Experiences Configuration Guide* for this release at: http://www.cisco.com/c/en/us/support/wireless/mobility-services-engine/products-installation-and-configuration-guides-list.html
- An alternative method is to use the **cassandraexport** command, and to export daily. We recommend that you schedule the export during a quiet period of the day, for example 2:00 A.M. If you use this method during a time when the system is continuously changing, a timeout can occur.
- Use the Cisco CMX History API only if your export does not exceed 2000 records, for example 100 floors.

Example

The following example shows how to export Cisco CMX data from Cassandra to a CSV file:

```
[cmxadmin]$ /opt/cmx/bin/cassandraexport --date 2017/06/14

Data exported into the file /tmp/CassandraExport_201706150220-02.csv
```

cmxctl checkdb

To check the database for schema integrity, use the **cmxctl checkdb** command.

cmxctl checkdb { **cassandra | postgres** }

Syntax Description

cassandra	Checks the cassandra schema.
postgres	Checks the postgres schema.

Command Default

None.

Command History

Release	Modification
Cisco CMX Release 10.3	This command was introduced.

Example

The following example shows how to the schemen integrity for cassandra and postgres database:

```
[root@server]# cmxctl checkdb cassandra

Schema passed analytics
Schema passed loc
Schema passed mse
Cassandra passed schema validation

[root@server]# cmxctl checkdb postgres
Schema passed analytics
Schema passed loc
Schema passed mse
Postgres passed schema validation
```

cmxctl checklogs

To check logs and generate a report, use the **cmxctl checklogs** command.

cmxctl checklogs

Command Default

None

Usage Guidelines

After a report is generated, the specific log that shows the error can be viewed for additional details. For example, **/opt/cmx.var.log.cmxjobs.log.3** has 108 errors, use the command **more /opt/cmx.var.log.cmxjobs.log.3** to view the corresponding file.

The following example shows how to check logs and generate a report:

```
[root@server]# cmxctl checklogs

**************************************************************************
Checking /opt/cmx/var/log/cmxjobs.log.3 for errors..
/opt/cmx/var/log/cmxjobs.log.3 has 108 errors
**************************************************************************
Checking /opt/cmx/var/log/system-cron.log for errors..
/opt/cmx/var/log/system-cron.log has 0 errors
**************************************************************************
Checking /opt/cmx/var/log/cmxjobs.log for errors..
/opt/cmx/var/log/cmxjobs.log has 81 errors
**************************************************************************
Checking /opt/cmx/var/log/collectd.log for errors..
/opt/cmx/var/log/collectd.log has 0 errors
**************************************************************************
Checking /opt/cmx/var/log/consul.log for errors..
/opt/cmx/var/log/consul.log has 0 errors
**************************************************************************
Checking /opt/cmx/var/log/qless-py-worker.log for errors..
/opt/cmx/var/log/qless-py-worker.log has 0 errors
**************************************************************************
Checking /opt/cmx/var/log/influxdb.log for errors..
/opt/cmx/var/log/influxdb.log has 0 errors
**************************************************************************
Checking /opt/cmx/var/log/cmxjobs.log.4 for errors..
/opt/cmx/var/log/cmxjobs.log.4 has 108 errors
**************************************************************************
```

cmxctl config aps delete

To delete an access point from Cisco CMX, use the **cmxctl config aps delete** command.

cmxctl config aps delete *MAC Address*

Syntax Description

MAC Address	Displays the MAC address of the access point.

Command Default

None.

Command Modes

Admin root user

Command History

Release	Modification
Cisco CMX Release 10.4	This command was introduced.

Usage Guidelines

This command should be run at the cmxadmin level.

cmxctl config audit

To enable and manage the remote logging of system events (syslogs), use the **cmxctl config audit settings** command. To view logged files, use the **cmxctl config audit view** command.

cmxctl config audit {**status | settings | view**}

Syntax Description

status	Displays whether audit logging is running on CMX, or is disabled. For example, `Remote Audit Logging = Disabled`.
settings	Enables, disables and configures audit log settings. See Usage Guidelines for information.
view	Displays all or specific log files. See Usage Guidelines for information.

Command Default

By default, remote system logging is disabled.

Command Modes

Admin root user

Command History

Release	Modification
Cisco CMX Release 10.5.0	This command was introduced.

Usage Guidelines

- The command **cmxctl config audit settings** prompts you to enter the following configuration questions. If you enter no value, CMX selects the default value, shown in [brackets].

Note To enable remote audit logging, enter a remote syslog IP address, port number and domain name. Otherwise, only local audit logging is enabled.

```
[root@server]# cmxctl config audit settings

Enable or Disable Remote Syslogging [Enable / Disable] [Enable]:
If logs size goes beyond lgb, drop or overwrite messages? [drop / overwrite] [overwrite]:
Please enter rsyslog IP:
Please enter rsyslog port [514]:
Please enter rsyslog DNS name: yoursyslogserver.yourco.com
```

Follow the prompts to select what events you would like logged:

```
Please select the events to be logged
All Events [yes/no] [yes]:
```

If you enter **yes**, all events are logged. If **no**, answer the following prompts:

```
Enter day [today(1)/yesterday(2)/last week(3)/last month(4)/all(5)] [5]:
Enter event type [MGMT_EVENT(1)/CONN_EVENT(2)/AUTH_EVENT(3)/CONF_EVENT(4)/ALL(5) [5]:
Enter identity [root(1)/admin(2)/all(3)] [3]:
Enter status [success(1)/failure(2)/all(3) [3]:
```

- The command **cmxctl config audit view** prompts you to enter which types of logs you want to view.

```
Show all logs [yes/no] [yes]:
```

If you enter If you enter **yes**, all logged events are displayed. If **no**, answer the following prompts, or **Enter** to accept the default vaule.

```
Enter day [today(1)/yesterday(2)/last week(3)/last month(4)/all(5)] [5]:
Enter event type [MGMT_EVENT(1)/CONN_EVENT(2)/AUTH_EVENT(3)/CONF_EVENT(4)/ALL(5) [5]:
Enter identity [root(1)/admin(2)/all(3)] [3]:
Enter status [success(1)/failure(2)/all(3) [3]:
```

Examples

The following example shows how to enable remote system logging of all events:

```
[root@server]# cmxctl config audit settings

Enable or Disable Remote Syslogging [Enable / Disable] [Enable]:
If logs size goes beyond lgb, drop or overwrite messages? [drop / overwrite] [overwrite]:
Please enter rsyslog IP: 168.172.1.20
Please enter rsyslog port [514]: 514
Please enter rsyslog DNS name: sls1296@wowco.com

Remote Audit Logging = Enabled

Please select the events to be logged
All Events [yes/no] [yes]: yes
Settings saved

Restarting rsyslog service
Shutting down system logger: [OK]
Starting system logger: [OK]
```

The following example shows how to display all admin-level success status logs for the current day.

```
[root@server]# cmxctl config audit view

Show all logs [yes/no] [yes]: no
Enter day [today(1)/yesterday(2)/last week(3)/last month(4)/all(5)] [5]: 1
Enter event type [MGMT_EVENT(1)/CONN_EVENT(2)/AUTH_EVENT(3)/CONF_EVENT(4)/ALL(5) [5]: 5
Enter identity [root(1)/admin(2)/all(3)] [3]: 2
Enter status [success(1)/failure(2)/all(3) [3]: 1
```

CMX displays the selected logs.

cmxctl config auth

To set strong CMX authentication requirements for passwords, logging in, and session timeout, use the **cmxctl config auth settings** command. To view these authentication settings, use the **cmxctl config auth show** command.

cmxctl config auth {**settings | show**}

Syntax Description

settings	Configures CMX authentication settings.
show	Displays CMX authentication settings.

Command Default

By default, strong authentication is not enabled.

Command Modes

Admin root user

Command History

Release	Modification
Cisco CMX Release 10.5.0	This command was introduced.

Usage Guidelines

The command **cmxctl config auth** prompts you to set the following values:

```
Enable strong password: yes/no
Minimum password length: 8-20 characters
Unsuccessful login attempts before account lock: 3-5 attempts
Set session timeout in minutes: 10-60 minutes
```

Examples

The following example shows how to display security parameters for CMX:

```
[root@server]# cmxctl config auth show

Enable strong password : yes
Minimum password length : 10
Unsuccessful login attempts before account lock : 3
Session timeout in minutes : 20
```

cmxctl config authinfo get

To view the the SHA1 (keyHash) and SHA2(sha2KeyHash) strings, use the **cmxctl config authinfo get** command.

cmxctl config authinfo get

Command Modes

Admin root user

Command History

Release	Modification
Cisco CMX Release 10.4	This command was introduced.

Usage Guidelines

This command gets the authorization information for NMSP connections to the controllers.

Example

The following example shows how to get the authorization information:

```
[cmxadmin@cmx-nortech ~]$ cmxctl config authinfo get
+---------------+-------------------------------+-------------------------------------------------+
| macAddress        | keyHashString                           | sha2KeyHashString
                                          |
+---------------+-------------------------------+-------------------------------------------------+
| 00:0c:29:07:36:84 | e743ac54029ce36282c582f04bfb45ec187c824d |
560d69882adb90dda10227651da0c6a2850999620b50f83ed0d157fb87d1a920 |
+---------------+-------------------------------+-------------------------------------------------+
```

cmxctl config banner

To create and manage a banner that displays when users log into CMX, use the **cmxctl config banner** command.

cmxctl config banner {**edit | show**}

Syntax Description

edit	Edit the login banner text.
show	Display the login banner.

Command Default

By default, CMX has no login banner.

Command Modes

Admin root user

Command History

Release	Modification
Cisco CMX Release 10.5.0	This command was introduced.

Usage Guidelines

None

Examples

The following example shows how to create the login banner "CentOS release 7.0."

```
hostname# cmxctl config banner edit

Current Login Banner = []
Enter text to be displayed as login banner. Enter a single period on a line to terminate.
CentOS release 7.0
.
Stopping sshd:                                             [  OK  ]
Starting sshd:                                             [  OK  ]
```

When you log into the CLI, you would see something like this:

```
login as: cmxadmin
CentOS release 7.0
cmxadmin@168.172.1.20's password:
Last login: 6/5/2018 1:10 PM
```

When you log into CMX from a browser, the banner message appears in a pop-up window on the login page.

cmxctl config certs

To create, import, or manage security key certificates, use the **cmxctl config certs** command.

cmxctl config certs {**clear** | **createcsr** | **importcacert** *filename.pem* | **importcrl** *filename.pem* | **importcrlurl** *URL* | **importservercert** *filename.pem* | **installnewcerts** | **keytype** {**RSA** | **ECDSA**} | **show**}

Syntax Description

clear	Clears certificate files in the `/opt/cmx/srv/certs` directory.
createcsr	Creates a new public and private keypair, and generates a corresponding Certificate Signing Request (CSR).
importcacert *filename.pem*	Imports a Certificate of Authority (CA) Privacy Enhanced Mail (pem) file.
importcrl *filename.pem*	Imports a Certificate Revocation List (CRL) pem file.
importcrlurl *URL*	Imports the URL of the CRL online, to keep the CRL current.
importservercert *filename.pem*	Imports the signed certificate and private key for the CMX server, concatenated into a single pem file.
installnewcerts	Generates new self-signed certificates.
keytype	Selects your encryption algorithm key type. • **RSA** — Install the Rivest–Shamir–Adleman (RSA) encryption algorithm. • **ECDSA** — Install the Elliptic Curve Digital Signature Algorithm (ECDSA).
show	Displays certificate details.

Command Default

By default, authentication certificates are not created, imported, or validated.

Command Modes

Admin root user

Command History

Release	Modification
Cisco CMX Release 10.5.0	This command was introduced.

Usage Guidelines

Note Certificates and keys are stored in the `/opt/cmx/srv/certs` folder.

Cisco recommends following this deployment order for **cmxctl config certs** commands.

1. **cmxctl config certs clear** — Optional, but recommended. Clears any certificates from the `/opt/cmx/srv/certs` directory.
2. **cmxctl config certs keytype** — Selects your key type: RSA (the default) or ECDSA.
3. **cmxctl config certs installnewcerts** — Generates new self-signed certificates in the `/opt/cmx/srv/certs` directory.
4. **cmxctl config certs createcsr** — Creates a Certificate Signing Request (CSR).
   - Private key — `/opt/cmx/srv/certs/`cmxserverkey.pem
   - CSR — `/opt/cmx/srv/certs/`cmxservercsr.pem
5. Send the CSR to an external CA, to obtain a signed certificate for the CMX server.
6. **cmxctl config certs importcacert** — Installs the CA certifications. At the prompt, provide an export and import password specific to this command.
7. **cmxctl config certs importservercert** — Installs the CA-signed server certificate and the private key as a concatenated pem file. At the prompt, provide an export and import password specific to this command.

Examples

The following example shows how to clear out old certificates from the `/opt/cmx/srv/certs` directory.

```
[root@server]# cmxctl config certs clear

Clear Certificates
```

The following example shows how to select key type ECDSA:

```
[root@server]# cmxctl config certs keytype

Please enter key type [RSA / ECDSA] [RSA]:ECDSA
Keytype is set to ECDSA.
```

The following example shows how to generate new self-signed certification files in the `/opt/cmx/srv/certs` directory using an RSA key:

```
[root@server]# cmxctl config certs installnewcerts

Keytype is RSA, generating RSA key with length  4096
Generating RSA private key, 4096 bit long modulus
.....................
.............................
e is 65537 (0x10001)
Generating RSA private key, 4096 bit long modulus
.........................................
.....................
e is 65537 (0x10001)
Signature ok
subject=/C=US/ST=CA/L=San Jose/O=MSE/CN=ServerCrt
Getting CA Private Key
Certificates are valid.
```

The following example shows how to create a new certificate signing request (CSR):

```
[root@server]# cmxctl config certs createcsr

Keytype is RSA, so generating RSA key with length  4096
Generating RSA private key, 4096 bit long modulus
...........
........
e is 65537 (0x10001)
You are about to be asked to enter information that will be incorporated
into your certificate request.
What you are about to enter is what is called a Distinguished Name or a DN.
There are quite a few fields but you can leave some blank
For some fields there will be a default value,
If you enter '.', the field will be left blank.
-----
Country Name (2 letter code) [AU]: US
State or Province Name (full name) [Some-State]: CA
Locality Name (eg, city) []: San Jose
Organization Name (eg, company) [Internet Widgits Pty Ltd]: Yourco, Inc.
Organizational Unit Name (eg, section) []: Gulag 10
Common Name (e.g. server FQDN or YOUR name) []: Wireless
Email Address []:email@yourco.com

Please enter the following 'extra' attributes
to be sent with your certificate request
A challenge password []:
An optional company name []:
The CSR is in: /opt/cmx/srv/certs
The Private key is in: /opt/cmx/srv/certs

CSR created successfully.
```

Sometimes two or more files need to be combined (or *concatenated*) before you can import the resulting file. For example, you may have intermediate CA certificates as well as root certs. This example shows how to concatenate the files root-ca-cert.pem and intermediate-ca-cert.pem, and import the resulting file to CMX.

1. Concatenate the files:

   ```
   [root@server]# cat root-ca-cert.pem intermediate-ca-cert.pem >
   ca-chain.pem
   ```

2. Import the new file **ca-chain.pem**:

   ```
   [root@server]# cmxctl config certs importcacerts ca-chain.pem

   Importing CA certificate.....
   Enter Export Password: caexportpw
   Verifying - Enter Export Password: caexportpw
   Enter Import Password: caimportpw
   Import CA Certificate successful
   0
   ```

The **importservercert** command requires you to combine the server key and the server certificate into one pem file. The following example shows how to combine the files and import the resulting file.

Note Import CA chain certificates before importing the server certificate.

1. Concatenate the files:

```
[root@server]# cat cmxserverkey.pem signed-cert.pem >
server-key-cert.pem
```

2. Import the new file **server-key-cert.pem**:

```
[root@server]# cmxctl config certs importservercerts
server-key-cert.pem
Importing Server certificate.....

Successfully transferred the file
```

At the prompts, provide an export and import password specific to this command.

```
Enter Export Password: svrexportpw
Verifying - Enter Export Password: svrexportpw
Enter Import Password: svrimportpw
Private key present in the file: /home/cmxadmin/server-key-cert.pem
Enter Import Password: svrimportpw
verifying SAN
Validation is Successful
Import Server Certificate successful
No CRL found
Restart CMX services for the changes to take effect.
0
```

The following example shows how to display the details of the server certificate and all CA chain certificates:

```
[root@server]# cmxctl config certs show
Certificate details

************************  Certificate Listing  ********************
========================================================================
**********************  CA Certificate(s)  ***********************
========================================================================
Certificate:
    Data:
        Version: 3 (0x2)
        Serial Number:
            b6:c0:fc:05:f6:27:45:1a
    Signature Algorithm: sha256WithRSAEncryption
        Issuer: C=US, ST=CA, L=San Jose, O=MSE, CN=RootCA
        Validity
            Not Before: Jan 19 05:17:33 2018 GMT
            Not After : Jan 18 05:17:33 2021 GMT
        Subject: C=US, ST=CA, L=San Jose, O=MSE, CN=RootCA
        Subject Public Key Info:
            Public Key Algorithm: rsaEncryption
                Public-Key: (4096 bit)
                Modulus:
                    00:ba:f2:2b:cd:87:90:23:f0:64:f5:83:d5:f2:90:
                    43:1a:16:36:c9:67:1a:82:f1:8f:6b:eb:1c:47:f1:
                    c4:fd:bf:55:98:ab:06:c0:90:dc:d7:13:1f:d3:2f:
                    12:e8:f2:74:66:65:7c:49:12:72:0c:27:9c:2e:84:
                    7e:29:a8:b6:18:62:5f:c2:97:a4:1c:e7:45:a2:cb:
                    f3:35:f3:64:15:e5:f0:27:6f:f1:07:61:41:9b:4c:
                    96:b3:56:d4:28:a4:85:90:86:52:4c:04:bc:da:38:
```

```
cc:f8:05:5b:3e:5c:03:b4:59:ec:8b:c9:5d:eb:61:
76:ba:20:3f:64:6c:25:5d:50:1e:85:37:ad:09:b2:
4a:fa:58:15:89:91:d9:5f:b8:9d:dd:64:31:8b:a4:
df:99:ff:ae:72:19:f8:a3:93:81:b9:4e:07:74:74:
95:b6:42:7b:5a:7d:38:92:4a:f4:86:5a:54:66:f0:
c1:fe:38:31:df:24:1c:40:94:36:67:8b:b3:56:93:
62:26:29:c2:cd:7f:7d:66:9d:f1:78:54:88:4f:6c:
b3:b7:80:54:05:03:09:c9:f9:14:65:8a:21:00:b5:
```

cmxctl config connect

To manage Cisco CMX Connect service data, use the **cmxctl config connect** command.

cmxctl config connect deleteClientAll

Syntax Description

deleteClientAll	Deletes all the client data.

Command Default

None.

Command Modes

Admin root usert

Command History

Release	Modification
Cisco CMX Release 10.5	This command was introduced.

Example

The following example shows how to delete all CMX connect clients:

```
[root@server]# cmxctl config connect deleteClientsAll
Successfully Deleted Connect Data, deleted 1 clients
```

cmxctl config controllers

To manage Cisco Wireless Controllers (Cisco WLC), use the **cmxctl config controllers** command.

cmxctl config controllers {**activeaps** |**add** |**delete** |**floors** *wlc-ip-address* |**import** |**missingaps** |**show**}

Syntax Description

activeaps	Displays active access points.
add	Adds a Cisco WLC.
delete	Deletes a Cisco WLC.
floors *wlc-ip-address*	Displays floors managed by Cisco WLCs.
import	Imports a Cisco WLC from Cisco Prime Infrastructure by providing the corresponding credentials, or by placing an exported Cisco Prime Infrastructure MAP file in the /opt directory of the Cisco CMX server and providing the path to the exported MAP file.
missingaps	Lists the access points from which Cisco CMX has received data, but the access points are not yet placed on a map.
show	Displays information pertaining to a Cisco WLC.

Command Default

None.

Command History

Release	Modification
Cisco CMX Release 10.3.1	The **missingaps** and **floors** keywords were added.
Cisco CMX Release 10.3.0	This command was introduced.

Usage Guidelines

The message "controller added successfully" after a Cisco WLC is added, refers only to the correct parsing of the command. You should issue a **cmxctl controllers show** command to ensure that the Cisco WLC is not active.

The **missingaps** keyword uses SNMP to retrieve the AP's MAC addresses from the access point's configuration cache every six hours. If the AP MAC address is not present, it will be displayed as `NA` on the CLI.

In addition, the AP MAC address will be displayed only if you have enabled the **configuration.apimport feature** flag by using the **cmxctl config featureflags configuration.apimport: true** command. For example:

```
[root@server]# cmxctl config featureflags configuration.apimport true

+---------------------------------+-------+
| location.compactlocationhistory | false |
+---------------------------------+-------+
| configuration.apimport          | true  |
```

The AP MAC address import occurs every 6 hours, so for new APs added to the controller, the AP MAC value for missingap will be available only after the next job run.

Examples

Starting from Cisco CMX Release 10.3.1, you can specify SNMP settings when you use the **cmxctl config controllers add** command. For example:

```
[root@server]# cmxctl config controllers add
Please enter controller type [WLC / NGWC] [WLC]: WLC
Please enter controller ip: 0.0.0.0
Please enter the controller version [Optional]:
Please enter controller SNMP version [v1 / v2c / v3] [v2c]: v2c
Please enter controller SNMP write community [private]:
.....................................................................
Controller Added 0.0.0.0
```

The following example shows how to display the Cisco WLC information:

```
[root@server]# cmxctl config controllers show

+--------------+------+------------+----------------+------+--------+
| IP Address | Type | Version | Device Version | SHA2 | Status |
+--------------+------+------------+----------------+------+--------+
| 30.30.30.65 | WLC | 8.0.72.141 | - | No | ACTIVE |
+--------------+------+------------+----------------+------+--------+
| 30.30.30.44 | WLC | 8.0.72.141 | - | No | ACTIVE |
+--------------+------+------------+----------------+------+--------+
| 30.30.30.46 | WLC | 8.0.72.141 | - | No | ACTIVE |
+--------------+------+------------+----------------+------+--------+
| 30.30.30.70 | WLC | 8.0.72.141 | - | No | ACTIVE |
+--------------+------+------------+----------------+------+--------+
| 30.30.30.93 | WLC | 8.0.72.141 | - | No | ACTIVE |
+--------------+------+------------+----------------+------+--------+
| 30.30.30.97 | WLC | 8.0.72.141 | - | No | ACTIVE |
+--------------+------+------------+----------------+------+--------+
| 30.30.30.35 | WLC | 8.0.72.141 | - | No | ACTIVE |
+--------------+------+------------+----------------+------+--------+
| 30.30.30.58 | WLC | 8.0.72.141 | - | No | ACTIVE |
+--------------+------+------------+----------------+------+--------+
| 30.30.30.82 | WLC | 8.0.72.141 | - | No | ACTIVE |
+--------------+------+------------+----------------+------+--------+
| 30.30.30.84 | WLC | 8.0.72.141 | - | No | ACTIVE |
+--------------+------+------------+----------------+------+--------+
| 30.30.30.53 | WLC | 8.0.72.141 | - | No | ACTIVE |
+--------------+------+------------+----------------+------+--------+
```

cmxctl config data

To manage history data, use the **cmxctl config data** command.

cmxctl config data deleteAll

Syntax Description

deleteALL	Deletes all client history and analytics raw data.

Command Default

None.

Command Modes

Admin root user

Command History

Release	Modification
Cisco CMX Release 10.5	This command was introduced.

Example

This example shows how to delete client history and raw analytics data.

```
[root@server]# cmxctl config data deleteAll
Do you wish to continue? All client history data, analytics data will be deleted and CMX
services will be restarted. [y/N]: y
Stopping all the services
All the Application services are stopped
Data Deletion Began
Deleting All Analytics Raw Visits Data
Deleting All Clients History Data
Starting all the services
All the Application services are restarted
```

cmxctl config featureflags

To list and toggle feature flags, use the **cmxctl config featureflags** command.

cmxctl config featureflags {*feature name*} {**true**|**false**}

Syntax Description

service.featurename	Name of the Cisco CMX service and feature. • analytics.areatransition • configuration.apimport: • monit • container.influxdbreporter • halo • analytics.queuetime
true	Enables the feature of the service.
false	Disables the feature of the service

Command Default

None

Command History

Release	Modification
Cisco CMX Release 10.2.2	This command was changed. The display default for analytics.sma was changed to false.
Cisco CMX Release 10.2.0	This command was introduced.

Example

The following example shows how to list the feature flags:

```
[root@server]# cmxctl config featureflags
+---------------------------------+-------+
| location.compactlocationhistory | true  |
+---------------------------------+-------+
| configuration.apimport          | true  |
+---------------------------------+-------+
| location.rogueapclienthistory   | true  |
+---------------------------------+-------+
| monit                           | true  |
+---------------------------------+-------+
| container.influxdbreporter      | true  |
+---------------------------------+-------+
| configuration.highendbypass     | false |
+---------------------------------+-------+
| apiserver.enabled               | true  |
+---------------------------------+-------+
| analytics.queuetime             | false |
+---------------------------------+-------+
```

cmxctl config gateway

To change the gaetway configuration for cloud beacon management, use the **cmxctl config gateway** command.

cmxctl config gateway { **cmx_cloud_url** *URL*| **show** }

Syntax Description

cmx_cloud_url	Configure the cloud URL for Beacon Management.
URL	Enter the cloud URL for Beacon Management.
show	Displays the cloud URL configured for Beacon Management.

Command Default

None

Command Modes

Admin root user

Command History

Release	Modification
Cisco CMX Release 10.5	This command was introduced.

Usage Guidelines

Example

```
[root@server]#  cmxctl config gateway show

CMX_CLOUD_SERVER: demo.com
```

cmxctl config get

To display configuration information for Cisco CMX services, use the **cmxctl config get** command.

cmxctl config get [{**analytics | cache_6378 | cache_6379 | cache_6380 | cache_6381 | cache_6382 | cache_6383 | cache_6385 | cache_6378 | cassandra | configuration | connect | database | haproxy | hyperlocation | location | matlabengine | metrics | nmsplb**}]

Syntax Description

analytics	Performs analytics on calculated location data.
agent	Manages Cisco CMX system lifecycle. Starts, stops, and monitors all the services running in Cisco CMX.
cache_6378	Caches the service used by location service.
cache_6379	Caches the service used by location service.
cache_6380	Caches the service used by analytics service.
cache_6381	Caches the service used by analytics service.
cache_6382	Caches the service used by analytics service.
cache_6383	Caches the service used by analytics service.
cache_6385	Caches the service used by analytics service.
cassandra	Enables cassandra database service used by the location service for historical data.
configuration	Configures nodes and clusters.
connect	Enables connect services.
database	Enables the database service used by analytics and configuration service.
haproxy	Enables the TCP or HTTP load balancer gateway to all service APIs.
hyperlocation	Enables hyperlocation.
location	Enables location service to compute location.
matlabengine	Provides access point heatmap for location service.
metrics	Collects system metrics.
nmsplb	Enables the load balancer service used for distributing Network Mobility Services Protocol (NMSP) messages to location services.

Command Default

The default command **cmxctl config get** displays configuration information for all supported services when executed without options.

Command Modes

Admin root user

Command History

Release	Modification
Cisco CMX Release 10.5	Additional services were documented.
Cisco CMX Release 10.3.0	This command was introduced.

Usage Guidelines

Examples

The following example shows how to display configuration information for the CMX analytics service.

```
[root@server]# cmxctl config get analytics

{
    "services": {
        "analytics": {
            "maxdirectmemory": "1536M",
            "maxnewsize": "400M",
            "mem": "1536M"
        }
    }
}
```

Optionally, you can filter the results by using one of the listed configuration keywords. For example:

```
[root@server]$ cmxctl config get cassandra
{
    "services": {
        "cassandra": {
            "keycachesize": "100",
            "maxnewsize": "800M",
            "mem": "4096M"
        }
    }
}
[root@server]$ cmxctl config get cassandra maxnewsize
{"maxnewsize": "800M"}
```

cmxctl config heatmaps summary

To show the details of the heapmap from the location service, use the **cmxctl config heatmaps summary** command.

cmxctl config heatmaps summary

Command Default

None.

Command Modes

Admin root user

Command History

Release	Modification
Cisco CMX Release 10.4	This command was introduced.

Usage Guidelines

This command should be run at the cmxadmin level.

cmxctl config hyperlocation mixmode

To manage mixed mode for hyperlocation for a specified floor, use the **cmxctl config hyperlocation mixmode** command.

cmxctl config hyperlocation mixmode *Floor ID*{**enable** |**disable**}

Syntax Description

Floor ID	Provides the specific floor ID.
enable	Enables mixed mode support for hyperlocation for the specified floor.
disable	Disables mixed mode support for hyperlocation for the specified floor.

Command Default

None

Command Modes

Admin root user

Command History

Release	Modification
Cisco CMX Release 10.4	This command was introduced.

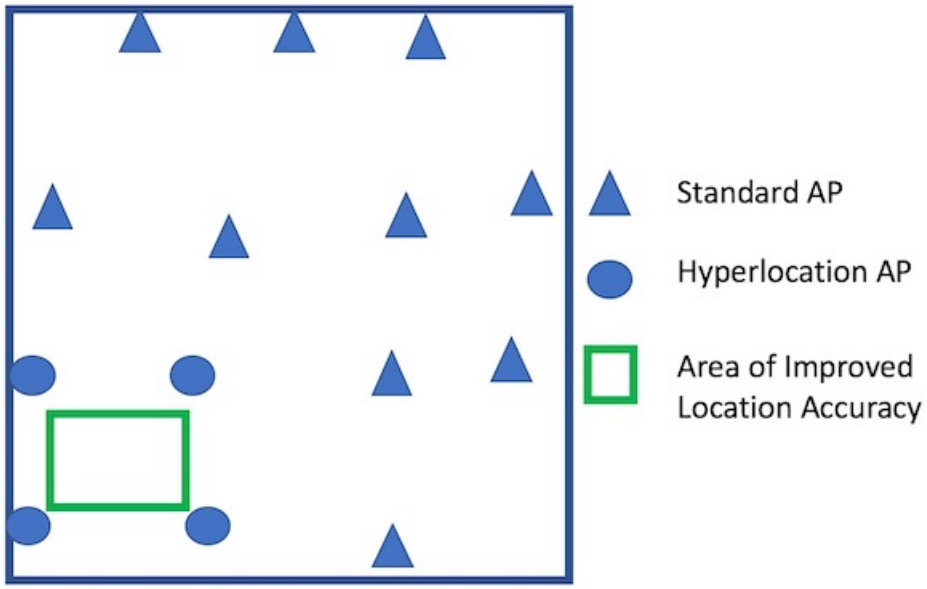
Usage Guidelines

We recommened that you use this command in a scenario where on a single floor there are both Hyperlocation enabled AP and non Hyperlocation APs. The improved location accuracy that comes from the use of Hyperlocation AP will occur within the convex hull of the Hyperlocation APs. Outside of this convex, standard location accuracy results will occur. At the edges of the convex hull there may also be lower accuracy, when clients are at least 10M inside of the convex hull.

This command does not support the interspersion of Hyperlocation AP with non Hyperlocation AP. If this is type of deployment is used, then there will be no improvement in location over standard probe RSSI based location.

The following is an example of a supported deployment:

Figure 1: Supported Hyperlocation Mixed Mode Deployment



cmxctl config import

To import a map and Cisco Wireless Controller (Cisco WLC) from Cisco Prime Infrastructure, use the **cmxctl config import** command.

cmxctl config import {**prime** | **status**}

Syntax Description

prime	Imports maps from Cisco Prime Infrastructure.
status	Shows import status.

Command Default

None.

Examples

The following example shows how to import a map and Cisco WLC from Cisco Prime Infrastructure:

```
[root@server]# cmxctl config import prime

Please enter PI ip address: x.x.x.x
Please enter PI username [root]: root
Please enter PI password [Public123]:
Import successfully started from PI x.x.x.x. Check import status using cmxctl config
import status.
```

cmxctl config maps address

To set a directory path to an optional map address file, use the **cmxctl config maps address** command.

cmxctl config maps address --path *filepath*

Syntax Description

--path *filepath*	Sets the directory path to an optional map address file. See Usage Guidelines for more information.

Command Default

None.

Command Modes

Admin root user

Usage Guidelines

Use the **cmxctl config maps address** command to access an optional map address file that you can associate with a map. This is not a necessary step for maps you create in CMX and PI, but you may have a map from another source that requires a valid address.

Note The first entry in each line of the map address file should be the fully-qualified name and address in `Campus>Building` format. For example: `My Campus>My Building, 123 Road St, San Jose CA 95137.`

Command History

Release	Modification
Cisco CMX Release 10.5	Additional keywords were documented.
Cisco CMX Release 10.3.0	This command was introduced.

Examples

The following example shows how to set the path to a map address file, which you can then associate with a map.

```
[root@server]# cmxctl config maps address --path /home/cmxadmin/campusPath.csv

cmxctl config maps address --path /home/cmxadmin/campusPath.csv
Now importing address for: North Campus>Building 9

Done importing addresses
```

cmxctl config maps aplist

To display a list of access points (APs) and their status for a specified floor, use the **cmxctl config maps aplist** command.

cmxctl config maps aplist [{**--active** | **--inactive**}] *floorID*

Syntax Description

--active	Optional. Display only the active access points (APs) on the specified floor.
–inactive	Optional. Display only the inactive access points (APs) on the specified floor.
floorID	The identifying number for the floor. Use the **cmxctl config maps floors** command to see the Floor ID.

Command Default

All access points display for the designated floor.

Command Modes

Admin root user

Usage Guidelines

To see all the APs on a floor, use the **cmxctl config maps aplist** command without additional arguments.

To get the Floor ID for a CMX floor map, use the **cmxctl config maps floors** command.

Command History

Release	Modification
Cisco CMX Release 10.5	Additional keywords were documented.
Cisco CMX Release 10.3.0	This command was introduced.

Examples

The following example shows how to list all the APs on the Registration Floor of Bld-4.

First, use the **cmxctl config maps floors** command to get the Location Floor ID for the floor you want to view:

```
[root@server]# cmxctl config maps floors

+-----------------------------------+--------------------+--------------------+
| Floor Name                        | Location Floor ID  | Analytics Floor ID |
+-----------------------------------+--------------------+--------------------+
| North Campus>Bld-4>Registration   | 727035700041482593 | 35                 |
+-----------------------------------+--------------------+--------------------+
```

Now run the **cmxctl config maps aplist** command, and paste in the Floor ID:

```
[root@server]# cmxctl config maps aplist 72703570082593

+---------------+-------------------+-------------------+----------------+----------+
| Name          | EthMacAddress     | RadioMacAddress   | FloorId        | Status   |
+---------------+-------------------+-------------------+----------------+----------+
| CMX-AP05-7069 | None              | 70:69:5a:51:48:40 | 72703570082593 | INACTIVE |
+---------------+-------------------+-------------------+----------------+----------+
| CMX-AP01-7070 | 40:01:7a:b2:c7:a2 | 70:70:8b:06:19:60 | 72703570082593 | ACTIVE   |
+---------------+-------------------+-------------------+----------------+----------+
| CMX-AP02-7071 | 40:01:7a:b2:c8:86 | 70:70:8b:06:1d:e0 | 72703570082593 | ACTIVE   |
```

```
+---------------+------------------+------------------+----------------+----------+
| CMX-AP06-7072 | 4c:77:6d:9e:61:9e | 70:69:5a:51:52:80 | 72703570082593 | ACTIVE   |
+---------------+------------------+------------------+----------------+----------+
| CMX-AP03-7073 | 40:01:7a:b2:c7:92 | 70:70:8b:06:19:20 | 72703570082593 | ACTIVE   |
+---------------+------------------+------------------+----------------+----------+
| CMX-AP04-7074 | 4c:77:6d:9e:61:04 | 70:69:5a:51:48:e0 | 72703570082593 | ACTIVE   |
+---------------+------------------+------------------+----------------+----------+
```

cmxctl config maps buildings

To see a list of buildings for a CMX Campus or for all buildings, use the **cmxctl config maps buildings** command.

cmxctl config maps buildings [{**--campus** *campusname* |**--csv**}]

Syntax Description

--campus	Optional. Restricts the list of buildings to a particular campus.
campusname	The name of the campus you would like to include.
--csv	Optional. Displays the results in comma-separated values (CSV) format, which can be cut and pasted into a spreadsheet.

Command Default

Running the command without arguments will display all buildings on all campuses.

Command Modes

CMX Admin

Command History

Release	Modification
Cisco CMX Release 10.5	Additional keywords were documented.
Cisco CMX Release 10.3.0	This command was introduced.

Usage Guidelines

Command *options* must follow the last command *keyword* with a space and two dashes. For example: `[root@server]# command keyword` *--option1 --option2*.

When you select the option --csv, the map information you specify is displayed in comma-separated values (CSV) format, which can be cut and pasted into a spreadsheet.

Examples

The following example shows how to display a list of all buildings, in CSV format. The output format is *Campus Name* > *Building Name*, *Location Building ID*, *Analytics Building ID*.

```
[root@server]# cmxctl config maps buildings --csv

System Campus>TMT,749980497668473090,18
System Campus>LCN,727001546461545854,16
System Campus>PCH,769481534004431937,15
North Campus>Newtech Building,732849996352089441,13
```

The following example shows how to display a list of building maps for North Campus:

```
[root@server]# cmxctl config maps buildings --campus North Campus

+------------------------------+----------------------+-----------------------+
| Building Name                | Location Building ID | Analytics Building ID |
+------------------------------+----------------------+-----------------------+
| North Campus>Newtech 1       | 727001546461544629   | 48                    |
+------------------------------+----------------------+-----------------------+
| North Campus>Newtech 2       | 725930212039482938   | 49                    |
+------------------------------+----------------------+-----------------------+
```

cmxctl config maps campuses

To see a list of your CMX Campuses, use the **cmxctl config maps campuses** command.

cmxctl config maps campuses [--csv]

Syntax Description

–csv	Optional. Displays the results in comma-separated values (CSV) format, which can be cut and pasted into a spreadsheet.

Command Default

Running the command without arguments will display all campuses in table format.

Command Modes

CMX Admin

Command History

Release	Modification
Cisco CMX Release 10.5	Additional keywords were documented.
Cisco CMX Release 10.3.0	This command was introduced.

Usage Guidelines

Command *options* must follow the last command *keyword* with a space and two dashes. For example: `[root@server]# command keyword` *--option1 --option2*.

When you select the option --csv, the map information you specify is displayed in comma-separated values (CSV) format, which can be cut and pasted into a spreadsheet.

Examples

The following example shows how to display a list of campus maps:

```
[root@server]# cmxctl config maps campuses

+----------------+--------------------+---------------------+
| Campus Name    | Location Campus ID | Analytics Campus ID |
+----------------+--------------------+---------------------+
| North Campus   | 727001546461544473 | 14                  |
+----------------+--------------------+---------------------+
| South Campus   | 384920494820170003 | 15                  |
+----------------+--------------------+---------------------+
```

If you want the campus map to be displayed in CSV format, add the --csv flag:

```
[root@server]# cmxctl config maps campuses --csv

North Campus,727001546461545275,14
South Campus,384920494820170003,15
```

cmxctl config maps delete

To delete a map, or all maps in your CMX network, use the **cmxctl config maps delete** command.

cmxctl config maps delete [{**--name** *mapname* |**--all**}]

Syntax Description

--name	Optional. Deletes a specific map.
mapname	The name of the map you want to delete.
--all	Optional. Deletes all CMX maps.

Command Default

The default for all delete options are not to confirm the delete.

Command Modes

CMX admin

Command History

Release	Modification
Cisco CMX Release 10.5	Additional keywords were documented.
Cisco CMX Release 10.3.0	This command was introduced.

Usage Guidelines

For all **cmxctl config maps delete** command options, you are asked to confirm the deletion.

If you enter the **cmxctl config maps delete** command without optional flags, you are asked to provide the map heirarchy in *campus-name*>*building-name*>*floor-name* format.

```
Please enter the hierarchy to be deleted (campus-name>building-name>floor-name):
```

Example

This example shows how to delete the Newtech 1 Security floor in North Campus:

```
[root@server]# cmxctl config maps delete

Please enter the hierarchy to be deleted (campus-name>building-name>floor-name):
North Campus>Newtech 1>Security
map deleted.
```

This example shows how to delete the map named NorthCampus.

```
[root@server]# cmxctl config maps delete --name NorthCampus
Confirm delete hierarchy: NorthCampus ? [y/N]: y
Map deleted.
```

cmxctl config maps floors

To list the floor maps in a selected campus, building, or all floors, use the **cmxctl config maps floors** command.

cmxctl config maps floors [**--campus** *mapname* **--building** *mapname* **--csv**]

Syntax Description

–campus	Optional. Restricts the list of floors to a particular campus.
mapname	The name of the campus you would like to include.
–building	Optional. Restricts the list of floors to a particular building.
mapname	The name of the building you would like to include.
--csv	Optional. Displays the results in comma-separated values (CSV) format, which can be cut and pasted into a spreadsheet.

Command Default

None.

Command Modes

Admin root user

Usage Guidelines

Command *options* must follow the last command *keyword* with a space and two dashes. For example: `[root@server]# command keywords` *--option1 --option2*.

When you select the option --csv, the map information you specify is displayed in comma-separated values (CSV) format, which can be cut and pasted into a spreadsheet.

Command History

Release	Modification
Cisco CMX Release 10.5	Additional keywords were documented.
Cisco CMX Release 10.3.0	This command was introduced.

Examples

The following example shows how to display a list of floor maps for North Campus, building A9:

```
[root@server]# cmxctl config maps floors --campus North Campus --building A9


+---------------------------------+--------------------+--------------------+
| Floor Name                      | Location Floor ID  | Analytics Floor ID |
+---------------------------------+--------------------+--------------------+
| North Campus>A9>Main Floor      | 615446507270015464 | 16                 |
+---------------------------------+--------------------+--------------------+
| North Campus>A9>Lab Floor       | 727001546461544650 | 17                 |
+---------------------------------+--------------------+--------------------+
| North Campus>A9>Offices Floor   | 615447265700154640 | 18                 |
+---------------------------------+--------------------+--------------------+
```

cmxctl config maps import

To import CMX location maps, use the **cmxctl config maps import** command.

cmxctl config maps import --type {**PI | FILE**} **--path** *importpath* **--override** {**yes | no**} **--importzones** {**yes | no**}

Syntax Description

--type {**PI** | **FILE**}	Identifies the source of the map you want to import. • **PI**—Imports a Cisco Prime Infrastructure map. • **FILE**—Imports a maps archive file.
--path *importpath*	Designates the path to the map you want to import.
--override {**yes** | **no**}	Resolves how the import should handle duplicate map names: • **yes**—Overwrites any duplicate map names. • **no**—Does not overwrite duplicate map names. See Usage Guidelines for more information.
--importzones {**yes** | **no**}	This option resolves how the import should handle duplicate zone names: • **yes**—Overwrites any duplicate zone names. • **no**—Does not overwrite duplicate zone names. See Usage Guidelines for more information.

Command Default

None.

Command Modes

Admin root user

Usage Guidelines

- When CMX accepts your request to import a map from Cisco Prime Infrastructure, you are prompted to answer the following questions. The defaults are in `[brackets]`.

```
Please enter PI ip address:
Please enter PI username [root]:
Please enter PI password [Public123]:
```

- When the **--override** or **--importzones** options are set to yes, existing maps or zones with the same names will be overwritten by the import. If you select no, the import will fail if there are conflicting map or zone names. You will need to resolve the conflict by changing the name and importing it again.
- Starting from Cisco CMX Release 10.3.1, you must provide the full (absolute) path to the tar file when using the **cmxctl config maps import** command. For example:

```
/opt/cmx/srv/floormaps/Importfile.tar.gz .
```

- Command *options* must follow the last command *keyword* with a space and two dashes. For example: `[root@server]# command keyword` *--option1 --option2*.

Command History

Release	Modification
Cisco CMX Release 10.5	Additional keywords were documented.
Cisco CMX Release 10.3.1	The **import** keyword was modified.
Cisco CMX Release 10.3.0	This command was introduced.

Examples

The following example shows how to import a map, overwriting any existing maps or zones with the same name:

```
[root@server]# cmxctl config maps import --type PI --path
/opt/Import_fdff5788ad650.tar.gz --override yes --importzones yes

Please enter PI ip address: 168.172.206.3
Please enter PI username [root]: root
Please enter PI password [Public123]: ********
Import successfully started from PI 168.172.206.3.
```

cmxctl config maps reprocessimage

When CMX floor map images occasionally become misaligned, use the **cmxctl config maps reprocessimage** command to realign them.

cmxctl config maps reprocessimage --imagename *imagename*

Syntax Description

--imagename	Identify the image needing reprocessing.
imagename	The name of the image you would like to reprocess.

Command Default

None.

Command Modes

CMX Admin

Command History

Release	Modification
Cisco CMX Release 10.5	Additional keywords were documented.
Cisco CMX Release 10.3.0	This command was introduced.

Usage Guidelines

Sometimes maps can become misaligned. When this happens, the **cmxctl config maps reprocess image** command reprocesses the image and realigns the map.

The default folder path for CMX maps is `/opt/cmx/srv/floormaps`.

Example

The following example shows how to reprocess floor tile images when they become misaligned:

```
[root@server]$ cmxctl config maps reprocessimage --imagename domain_2_147753.png

File domain_2_147753.png exists in /opt/cmx/srv/floormaps. Proceeding...
Image processing job submitted for domain_2_147753.png.
```

cmxctl config maps zones

To list the floor maps in a selected campus, building, or all floors, use the **cmxctl config maps floors** command.

cmxctl config maps zones [**--campus** *mapname* **--building** *mapname* **--csv**]

Syntax Description

–campus	Optional. Restricts the list of floors to a particular campus.
mapname	The name of the campus you would like to include.
–building	Optional. Restricts the list of floors to a particular building.
mapname	The name of the building you would like to include.
--csv	Optional. Displays the results in comma-separated values (CSV) format, which can be cut and pasted into a spreadsheet.

Command Default

All zones display when the command is run without options.

Command Modes

Admin root user

Usage Guidelines

Command *options* must follow the last command *keyword* with a space and two dashes. For example: `[root@server]# command keywords` *--option1 --option2*.

When you select the option --csv, the map information you specify is displayed in comma-separated values (CSV) format, which can be cut and pasted into a spreadsheet.

Command History

Release	Modification
Cisco CMX Release 10.5	Additional keywords were documented.
Cisco CMX Release 10.3.0	This command was introduced.

Examples

The following example shows how to display a list of zones for North Campus Bld-4:

```
[root@server]# cmxctl config maps floors --campus North Campus building Bld-4

[cmxadmin@cmx-nortech-server ~]$ cmxctl config maps zones
+-----------------------------------+-----------+-------------------+
| Floor Name                        | Zone Name | Analytics Zone ID |
+-----------------------------------+-----------+-------------------+
| North Campus>Bld-4>1st Floor      | NOC       | 376               |
+-----------------------------------+-----------+-------------------+
| North Campus>Bld-4>1st Floor      | School    | 375               |
+-----------------------------------+-----------+-------------------+
```

cmxctl config qlesspyworker

To manage qlesspyworker, use the **cmxctl config qlesspyworker** command.

cmxctl config qlesspyworker cleanRedis

Syntax Description

cleanRedis	Removes stale and invalid qlesspyworker history data.

Command Default

None.

Command Modes

Admin root user

Command History

Release	Modification
Cisco CMX Release 10.5	This command was introduced.

Usage Guidelines

Example

```
[root@server]#  cmxctl config qlesspyworker cleanRedis
QlessHistoryCleanupTask started
Deleted 0 qless-job-history records that were idle for 1209600 seconds.
Found 0 SMA-job records, deleted all.
QlessHistoryCleanupTask completed
```

cmxctl config reload

To forcefully generate a configuration file, use the **cmxctl config reload** command.

cmxctl config reload

Command Default None

Examples

The following example shows how to forcefully generate a configuration file:

```
[root@server]# cmxctl config reload

2015-03-10T17:45:50Z cmx-vmdev117 -verbose[17174]: WARNING Skipping confd config file.
2015-03-10T17:45:50Z cmx-vmdev117 -verbose[17174]: INFO Target config
/opt/cmx/etc/analytics.conf in sync
2015-03-10T17:45:50Z cmx-vmdev117 -verbose[17174]: INFO Target config
/opt/cmx/etc/cassandra/cassandra-env.sh in sync
2015-03-10T17:45:50Z cmx-vmdev117 -verbose[17174]: INFO Target config
/opt/cmx/etc/cassandra/cassandra.yaml in sync
2015-03-10T17:45:50Z cmx-vmdev117 -verbose[17174]: INFO Target config
/opt/cmx/etc/collectd.conf in sync
2015-03-10T17:45:50Z cmx-vmdev117 -verbose[17174]: INFO Target config
/opt/cmx/etc/configuration.conf in sync
2015-03-10T17:45:50Z cmx-vmdev117 -verbose[17174]: INFO Target config
/opt/cmx/etc/connect.conf in sync
2015-03-10T17:45:50Z cmx-vmdev117 -verbose[17174]: INFO Target config
/opt/cmx/etc/halo.conf in sync
2015-03-10T17:45:50Z cmx-vmdev117 -verbose[17174]: INFO Target config
/opt/cmx/etc/haproxy.cfg in sync
2015-03-10T17:45:50Z cmx-vmdev117 -verbose[17174]: INFO Target config
/opt/cmx/etc/influxdb.conf in sync
2015-03-10T17:45:50Z cmx-vmdev117 -verbose[17174]: INFO Target config
/opt/cmx/etc/location.conf in sync
2015-03-10T17:45:50Z cmx-vmdev117 -verbose[17174]: INFO Target config
/opt/cmx/etc/matlabengine.conf in sync
2015-03-10T17:45:50Z cmx-vmdev117 -verbose[17174]: INFO Target config
/opt/cmx/etc/nmsplb.conf in sync
2015-03-10T17:45:50Z cmx-vmdev117 -verbose[17174]: INFO Target config
/opt/cmx/etc/nmspproxy.conf in sync
2015-03-10T17:45:50Z cmx-vmdev117 -verbose[17174]: INFO Target config
/opt/cmx/etc/postgresql.conf in sync
2015-03-10T17:45:50Z cmx-vmdev117 -verbose[17174]: INFO Target config
/opt/cmx/etc/redis_6379.conf in sync
2015-03-10T17:45:50Z cmx-vmdev117 -verbose[17174]: INFO Target config
/opt/cmx/etc/redis_6380.conf in sync
2015-03-10T17:45:50Z cmx-vmdev117 -verbose[17174]: INFO Target config
/opt/cmx/etc/redis_6381.conf in sync
2015-03-10T17:45:50Z cmx-vmdev117 -verbose[17174]: ERROR template:
redis.template.conf:15:20: executing "redis.template.conf" at <getv ($tag | printf ...>:
error calling getv: key does not exist
```

cmxctl config rfid timeout

To set the timeout for maintaining RFID tags in Cisco CMX, use the **cmxctl config rfid timeout** command.

cmxctl config rfid timeout {**get** |**set** *value*}

Syntax Description

get	Displays the timeout value.
set *value*	Sets the timeout value that Cisco CMX maintains RFID tags before expiring them.The time range is 600 to 10800 seconds. The default value is 900 seconds

Command Default

None.

Command Modes

Admin root user

Command History

Release	Modification
Cisco CMX Release 10.3.1	This command was introduced.

Usage Guidelines

We recommend that the RFID tag timeout is as long as your longest RFID tag's chirp interval. Otherwise, the tag will not be on the map or active clients because it timed out of the Cisco CMX cache.

Example

The following example shows how to set the timeout for RFID tags, and then verify the setting:

```
[root@server]# cmxctl config rfid timeout set

need to include a timeout within 600 to 10800 seconds
[root@server]# cmxctl config rfid timeout set 600
[root@server]# cmxctl config rfid timeout get
600 seconds
```

cmxctl config set

To set a config key for a Cisco CMX service, use the **cmxctl config set** command.

cmxctl config set {**analytics | cache_6378 | cache_6379 | cache_6380 | cache_6381 | cache_6382 | cache_6383 | cache_6385 | cache_6378 | cassandra | configuration | connect | database | haproxy | hyperlocation | location | matlabengine | metrics | nmsplb**}

Syntax Description

analytics	Performs analytics on calculated location data.
agent	Manages Cisco CMX system lifecycle. Starts, stops, and monitors all the services running in Cisco CMX.
cache_6378	Caches the service used by location service.
cache_6379	Caches the service used by location service.
cache_6380	Caches the service used by analytics service.
cache_6381	Caches the service used by analytics service.
cache_6382	Caches the service used by analytics service.
cache_6383	Caches the service used by analytics service.
cache_6385	Caches the service used by analytics service.
cassandra	Enables cassandra database service used by the location service for historical data.
configuration	Configures nodes and clusters.
connect	Enables connect services.
database	Enables the database service used by analytics and configuration service.
haproxy	Enables the TCP or HTTP load balancer gateway to all service APIs.
hyperlocation	Enables hyperlocation.
location	Enables location service to compute location.
matlabengine	Provides access point heatmap for location service.
metrics	Collects system metrics.
nmsplb	Enables the load balancer service used for distributing Network Mobility Services Protocol (NMSP) messages to location services.

Command Default None.

Command Modes Admin root user.

Command History

Release	Modification
Cisco CMX Release 10.5	Additional options were documented.
Cisco CMX Release 10.4	This command was introduced.

Example

This example shows how to generate a key for the service **location**.

```
[root@server]$ cmxctl config set location key 2512
{"key": "2512"}
Change will take effect on service restart.
```

Restart the service.

```
[root@server]$ cmxctl restart location
Done
The nodeagent service is currently running with PID: 3299
Attempting to restart Location
.............
Service Location has successfully restarted
```

To verify the key, use the **cmxctl config get location** command:

```
[root@server]$ cmxctl config get location
{
    "services": {
        "location": {
            "key": "2512",
            "maxdirectmemory": "1536M",
            "maxnewsize": "800M",
            "mem": "6144M"
        }
    }
}
```

cmxctl config sma

To manage social media analytics (SMA), use the **cmxctl config sma** command.

cmxctl config sma { **proxy | twitter** }

Syntax Description

proxy	Sets HTTP proxy.
twitter	Sets Twitter credentials.

Command Default

None.

Usage Guidelines

After setting the SMA proxy, restart the qlesspyworker for the changes to take effect.

Examples

The following example shows how to manage SMA:

```
[root@server]# cmxctl config sma proxy
Please enter value for http proxy: http://proxy.cisco.com:80
Please enter value for https proxy: http://proxy.cisco.com:80
SMA Proxies have been set. Please restart qlesspyworker for the changes to take effect.
```

cmxctl config verify

To verify the Cisco Connected Mobile Experiences (Cisco CMX) installation and configuration, use the **cmxctl config verify** command.

cmxctl config verify

Command Default

None.

Command Modes

Examples

The following example shows how to verify the Cisco CMX installation and configuration:

```
[root@server]# cmxctl config verify
Verifying node configuration...
NetworkManager: unrecognized service
Consul v0.4.1
Consul Protocol: 2 (Understands back to: 1)
confd 0.6.0
+-----------------+--------------------------------+------------+-------------------------+
| module | check | passed | msg
|
+=================+================================+============+=========================+
| netman_stopped | NetworkManager service is not | Success |
|
| | running | |
|
+-----------------+--------------------------------+------------+-------------------------
--+
| matlabengine | http://matlabengine.service.co | Failed | check the log files
under |
| | nsul:5577/api/services/matlabe | | /opt/cmx/var/log
|
| | ngine/status | |
|
+-----------------+--------------------------------+------------+-------------------------+
| database | connect to database port:5432 | Success |
|
+-----------------+--------------------------------+------------+-------------------------+
| consul_dns | 127.0.0.1 (consul) is present | Success |
|
| | as dns server in | |
|
| | /etc/resolv.conf | |
|
+-----------------+--------------------------------+------------+-------------------------
--+
| etchost_hacks | consul service hostnames not | Success |
|
| | static in /etc/hosts | |
|
+-----------------+--------------------------------+------------+-------------------------+
| analytics | http://analytics.service.consu | Failed | check the log files
under |
| | l:5556/api/services/analytics/ | | /opt/cmx/var/log
|
| | status | |
|
+-----------------+--------------------------------+------------+-------------------------+
```

```
| hostname_ping | ping to hostname:cmx-master-1 | Success |
|
+-----------------+-------------------------------+------------+-------------------------
--+
| location | http://location.service.consul | Failed | check the log files
under |
| | :5555/api/services/location/st | | /opt/cmx/var/log
|
| | atus | |
|
+-----------------+-------------------------------+------------+-------------------------
--+
| confd_installed | Confd is installed | Success |
|
+-----------------+-------------------------------+------------+-------------------------+
| consul_installe | Consul is installed | Success |
|
| d | | |
|
+-----------------+-------------------------------+------------+-------------------------
--+
| nmsplb | http://nmsplb.service.consul:6 | Failed | check the log files
under |
| | 001/api/services/nmsplb/status | | /opt/cmx/var/log
|
+-----------------+-------------------------------+------------+-------------------------+
| configuration | http://configuration.service.c | Failed | check the log files
under |
| | onsul:6000/api/services/config | | /opt/cmx/var/log
|
| | uration/status | |
|
+-----------------+-------------------------------+------------+-------------------------+
| cassandra | connect to cassandra port:9042 | Success |
|
+-----------------+-------------------------------+------------+-------------------------+
```

cmxctl debug

To create a debug tarball in the current directory, use the **cmxctl debug** command.

cmxctl debug

Command Default

None.

Command History

Release	Modification
Cisco CMX Release 10.4	This command is depreciated.

Usage Guidelines

The debug tarball that is created will be approximately 300 MB in size, and takes at 90 seconds to complete. This command should to be run using the cmxadmin (non-root) account. This commnd is depreciated in Cisco CMX release 10.4 and we recommend that you use **cmxos techsupport** command.

Examples

The following example shows how to create a debug tarball in the current directory:

```
[cmxadmin@10.10.10.10:~]$ cmxctl debug
running locally
Dumping debug information...
[localhost] Executing task 'dump_config'
cp: cannot stat `/opt/cmx/share/upgrade.answers': No such file or directory
[localhost] Executing task 'dump_state'
running 'ps aux'
running 'ifconfig -a'
running 'cmxctl status'
running 'ulimit -a'
running 'ps -u root,postgres -o %cpu,%mem,cmd'
running 'netstat -o -n -a'
running 'df -h'
running 'ntpdate -d 172.19.28.250'
running 'consul members'
[localhost] Executing task 'dump_apis'
getting /api/config/v1/clusters
getting /api/config/v1/nodes
[localhost] Executing task 'dump_hosts'
pinging configuration.service.consul
pinging location.service.consul
pinging 6379.cache.service.consul
pinging 6380.cache.service.consul
pinging 6381.cache.service.consul
pinging database.service.consul
pinging analytics.service.consul
pinging halo.service.consul
Done.
```

cmxctl disable

To disable a service, use the **cmxctl disable** command.

cmxctl disable {**consul| qlesspyworker | cassandra | iodocs |cache_6382|cache_6383| cache_6380| cache_6381 |cache_6384|cache_6385| influxdb | metrics | confd | cache_6379 |cache_6378 | haproxy | database | analytics | connect |gateway| location | configuration | matlabengine |hyperlocation| nmsplb | agent** }

Syntax Description

analytics	Performs analytics on calculated location data.
agent	Manages Cisco CMX system lifecycle. starts, stops, and monitors all the services running in Cisco CMX.
cache_6378	Caches the service used by location service.
cache_6379	Caches the service used by location service.
cache_6380	Caches the service used by analytics service.
cache_6381	Caches the service used by analytics service.
cache_6382	Caches the service used by analytics service.
cache_6383	Caches the service used by analytics service.
cache_6385	Caches the service used by analytics service.
cassandra	Enables cassandra database service used by the location service for historical data.
confd	Internal service.
configuration	Configures nodes and clusters.
connect	Enables connect services.
consul	Internal service.
database	Enables the database service used by analytics and configuration service.
haproxy	Enables the TCP or HTTP load balancer gateway to all service APIs.
hyperlocation	Enables hyperlocation.
location	Enables location service to compute location.
matlabengine	Provides access point heatmap for location service.
metrics	Collects system metrics.

nmsplb	Enables the load balancer service used for distributing Network Mobility Services Protocol (NMSP) messages to location services.
influxdb	Enables database services used for storing statistics from various services.
iodocs	Enables online document service for REST API offered by various services.
qlesspyworker	Internal service.
gateway	Enables gateway services that establishes secure bidirectional communication with Cisco CMX Cloud applications.

Command Default None

Examples

The following example shows how to disable the cassandra database service:

```
[root@server]# cmxctl disable cassandra
Done
The nodeagent service is currently running with PID: 31776
Stopping cassandra process...
Done
Successfully shutdown cassandra Process.
```

cmxctl dump

To create a configuration tarball in the current directory, use the **cmxctl dump** command.

cmxctl dump

Command Default None

Examples

The following example shows how to create a configuration tarball in the current directory:

```
[root@server]# cmxctl dump
running locally
Dumping configuration information...
[localhost] Executing task 'dump_config'
Done.
```

cmxctl enable

To enable a service, use the **cmxctl enable** command.

cmxctl enable {**consul| qlesspyworker | cassandra | iodocs |cache_6382|cache_6383| cache_6380| cache_6381 |cache_6384|cache_6385| influxdb | metrics | confd | cache_6379 |cache_6378 | haproxy | database | analytics | connect |gateway| location | configuration | matlabengine |hyperlocation| nmsplb | agent** }

Syntax Description

analytics	Performs analytics on calculated location data.
agent	Manages Cisco CMX system lifecycle. starts, stops, and monitors all the services running in Cisco CMX.
cache_6378	Caches the service used by location service.
cache_6379	Caches the service used by location service.
cache_6380	Caches the service used by analytics service.
cache_6381	Caches the service used by analytics service.
cache_6382	Caches the service used by analytics service.
cache_6383	Caches the service used by analytics service.
cache_6385	Caches the service used by analytics service.
cassandra	Enables cassandra database service used by the location service for historical data.
confd	Internal service.
configuration	Configures nodes and clusters.
connect	Enables connect services.
consul	Internal service.
database	Enables the database service used by analytics and configuration service.
haproxy	Enables the TCP or HTTP load balancer gateway to all service APIs.
hyperlocation	Enables hyperlocation.
location	Enables location service to compute location.
matlabengine	Provides access point heatmap for location service.
metrics	Collects system metrics.

nmsplb	Enables the load balancer service used for distributing Network Mobility Services Protocol (NMSP) messages to location services.
influxdb	Enables database services used for storing statistics from various services.
iodocs	Enables online document service for REST API offered by various services.
qlesspyworker	Internal service.
gateway	Enables gateway services that establishes secure bidirectional communication with Cisco CMX Cloud applications.

Command Default

None.

Examples

The following example shows how to enable analytics service:

```
[root@server]# cmxctl enable analytics
The nodeagent service is not running.
Agent is not running, starting it now.
Starting nodeagent Process...
Retrying..
Done
Started nodeagent service with PID: 31027
```

cmxctl heterarchy

To manage the deployment hierarchy, use the **cmxctl heterarchy** command.

cmxctl heterarchy {**backup**|**rebuild**|**repair**|**restore**|**retire** |**verify**}

Syntax Description

backup	Backs up the deployment hierarchy.
rebuild	Rebuilds the deployment hierarchy.
repair	Repairs the deployment hierarchy.
restore	Restores the deployment hierarchy.
retire	Retires the deployment hierarchy.
verify	Verifies the deployment hierarchy.

Command Default

None

Command History

Release	Modification
Cisco CMX Release 10.2	This command was introduced.

Example

The following example shows how to verify the heterarchy:

```
[root@server]# cmxctl heterarchy verify
Verifying heterarchy...
Checking user levels
Heterarchy is healthy.
```

cmxctl influxdb wipe

To wipe the influx database, use the **cmxctl influxdb wipe --silent** command.

cmxctl influxdb wipe --silent

Syntax Description

silent	Silently wipe the influx database

Command Default

None.

Command History

Release	Modification
Cisco CMX Release 10.3	This command was introduced.

The following example shows how to wipe the influx database:

```
[root@server]# cmxctl influxdb wipe
This command will wipe the Influx database. All system metric data will be erased.
Do you want to continue?: y
Stopping influxdb Process...
executing shutdown
Retrying..
Retrying...
Retrying....
Done
Successfully shutdown influxdb Process.
Cleaning Influx database directories
Configuring InfluxDB
```

cmxctl jobs

To configure recurring background jobs, use the **cmxctl jobs** command.

cmxctl jobs { **cancel** *jobname*| **list** | **run** *jobname*| **runnow** *jobname*}

Syntax Description

cancel *jobname*	Cancels a scheduled job.
list	Lists all the scheduled jobs.
run *jobname*	Runs a job at a specified time.
runnow *jobname*	Triggers a one-time run of the job.

Command Default

None.

Usage Guidelines

The Apache Cassandra database stores location history data. Pruning should be performed to maintain disk usage. Cisco CMX 10.2 introduces the option to prune database size. The default disk-pruning task runs at an interval of 90 days. You can also use the cmxctl jobs runnow cleanupcassandra command to run an on-demand job of cleaning up the Cassandra database, which is a normal scheduled task that runs once every two days.

Examples

The following example shows how to run a background job:

```
[root@server]# cmxctl jobs run LocationIndexCleanup
submitted the job, verify using cmxctl jobs list.
```

cmxctl metrics notification

To generate notification metrics for a Cisco Connected Mobile Experiences (Cisco CMX) file, use the **cmxctl metrics notification** command.

cmxctl metrics notification

Command Default

None

Usage Guidelines

The **notification** keyword provides metrics for notification.

Examples

The following example shows how to generate metrics for a Cisco CMX file:

```
[root@server]# cmxctl metrics notification
+--------------------------------+------------+------------+-----------------+------------+
| EndPoint | Success | Failure | SuccessRate |
FailureRate |
+================================+============+============+=================+============+
+--------------------------------+------------+------------+-----------------+------------+
```

cmxctl node

To manage node installation, use the **cmxctl node** command.

cmxctl node { **sslmode** |{**enable** |{**--key** *key-file-location* |**--pem** *pem-file-location*}|**disable**}}

Syntax Description

sslmode	Enables or disables Secure Sockets Layer (SSL).
enable	Enables Secure Sockets Layer (SSL).
--key *key-file-location*	Location of the SSL key file.
--pem *pem-file-location*	Location of the SSL pem file.
disable	Disables Secure Sockets Layer (SSL).

Command Default

None.

Usage Guidelines

Before initiating the import process, ensure that you have a self-signed or a Certificate Authority (CA)-signed certificate and the key file. The certificate and the key file must have minimum global read permissions (0644). Starting from Cisco CMX Release 10.3.1, you can install a new Cisco CMX certificate by using the key and pem keywords. For example:

```
[root@server]# cmxctl node sslmode enable --pem /home/cmxadmin/cert.pem --key
/home/cmxadmin/host.key
```

Command History

Release	Modification
Cisco CMX Release 10.3.1	This command was modified. The **sslmode enable** keyword was modified.
Cisco CMX Release 10.3.0	This command was introduced.

Examples

The following example shows how to manage node installation:

```
[root@server]#  cmxctl node sslmode enable --pem <pem-file-location> --key
<key-file-location>
enabling ssl
ssl enabled
```

cmxctl restart

To restart a Cisco Connected Mobile Experiences (Cisco CMX) service, use the **cmxctl restart** command.

cmxctl restart {**consul| qlesspyworker | cassandra | iodocs |cache_6382|cache_6383| cache_6380| cache_6381 |cache_6384|cache_6385| influxdb | metrics | confd | cache_6379 |cache_6378 | haproxy | database | analytics | connect |gateway| location | configuration | matlabengine |hyperlocation| nmsplb | agent** }

Syntax Description

analytics	Performs analytics on calculated location data.
agent	Manages Cisco CMX system lifecycle. Starts, stops, and monitors all the services running in Cisco CMX.
cache_6378	Caches the service used by location service.
cache_6379	Caches the service used by location service.
cache_6380	Caches the service used by analytics service.
cache_6381	Caches the service used by analytics service.
cache_6382	Caches the service used by analytics service.
cache_6383	Caches the service used by analytics service.
cache_6385	Caches the service used by analytics service.
cassandra	Enables cassandra database service used by the location service for historical data.
confd	Internal service.
configuration	Configures nodes and clusters.
connect	Enables connect services.
consul	Internal service.
database	Enables the database service used by analytics and configuration service.
haproxy	Enables the TCP or HTTP load balancer gateway to all service APIs.
hyperlocation	Enables hyperlocation.
location	Enables location service to compute location.
matlabengine	Provides access point heatmap for location service.
metrics	Collects system metrics.

nmsplb	Enables the load balancer service used for distributing Network Mobility Services Protocol (NMSP) messages to location services.
influxdb	Enables database services used for storing statistics from various services.
iodocs	Enables online document service for REST API offered by various services.
qlesspyworker	Internal service.
gateway	Enables gateway services that establishes secure bidirectional communication with Cisco CMX Cloud applications.

Command Default None

Examples

The following example shows how to restart a Cisco CMX service:

```
[root@server bin]# cmxctl restart database
Done
The nodeagent service is currently running with PID: 16718
Stopping postgres Process...
Successfully shutdown postgres Process.
Starting postgres Process...
Done
Started postgres service with PID: 25702
Exception while notifying CE
```

cmxctl stack

To generate the jstack for a java service, use the **cmxctl stack** command.

cmxctl stack {**cmx_service**}

Syntax Description

cmx_service	Lists all Cisco CMX services. The services include: location, analytics, configuration, matlabengine, and nmsplb.

Command Default

None

Command History

Release	Modification
Cisco CMX Release 10.2	This command was introduced.

Example

The following example shows how to generate jstack for location services:

cmxctl start

To start a Cisco Connected Mobile Experiences (Cisco CMX) service, use the **cmxctl start** command.

cmxctl start {**consul| qlesspyworker | cassandra | iodocs |cache_6382|cache_6383| cache_6380| cache_6381 |cache_6384|cache_6385| influxdb | metrics | confd | cache_6379 |cache_6378 | haproxy | database | analytics | connect |gateway| location | configuration | matlabengine |hyperlocation| nmsplb | agent** }

Syntax Description

analytics	Performs analytics on calculated location data.
agent	Manages Cisco CMX system lifecycle. starts, stops, and monitors all the services running in Cisco CMX.
cache_6378	Caches the service used by location service.
cache_6379	Caches the service used by location service.
cache_6380	Caches the service used by analytics service.
cache_6381	Caches the service used by analytics service.
cache_6382	Caches the service used by analytics service.
cache_6383	Caches the service used by analytics service.
cache_6385	Caches the service used by analytics service.
cassandra	Enables cassandra database service used by the location service for historical data.
confd	Internal service.
configuration	Configures nodes and clusters.
connect	Enables connect services.
consul	Internal service.
database	Enables the database service used by analytics and configuration service.
haproxy	Enables the TCP or HTTP load balancer gateway to all service APIs.
hyperlocation	Enables hyperlocation.
location	Enables location service to compute location.
matlabengine	Provides access point heatmap for location service.
metrics	Collects system metrics.

nmsplb	Enables the load balancer service used for distributing Network Mobility Services Protocol (NMSP) messages to location services.
influxdb	Enables database services used for storing statistics from various services.
iodocs	Enables online document service for REST API offered by various services.
qlesspyworker	Internal service.
gateway	Enables gateway services that establishes secure bidirectional communication with Cisco CMX Cloud applications.

Command Default None

Examples

The following example shows how to display the status for the consul service:

```
[root@server]# cmxctl start consul
Done
The nodeagent service is currently running with PID: 16718
Done
The analytics service is already running with pid: 1099
Done
Exception while notifying CE
Done
The location service is already running with pid: 16005
Done
Exception while notifying CE
Done
The configuration service is already running with pid: 16165
Done
Exception while notifying CE
Done
The matlabengine service is already running with pid: 1251
Done
Exception while notifying CE
Done
The nmsplb service is already running with pid: 1377
Done
Exception while notifying CE
```

cmxctl status

To view the status of one or all Cisco Connected Mobile Experiences (Cisco CMX) services, use the **cmxctl status** command.

cmxctl status { **analytics | agent |cache_6378 | cache_6379 | cache_6380| cache_6381 |cache_6382|cache_6383|cache_6385| cassandra | configuration | confd | consul | database | haproxy | location | matlabengine | metrics | nmsplb | influxdb | iodocs | qlesspyworker** }

Syntax Description

analytics	Performs analytics on calculated location data.
agent	Manages Cisco CMX system lifecycle. starts, stops, and monitors all the services running in Cisco CMX.
cache_6378	Caches the service used by location service.
cache_6379	Caches the service used by location service.
cache_6380	Caches the service used by analytics service.
cache_6381	Caches the service used by analytics service.
cache_6382	Caches the service used by analytics service.
cache_6383	Caches the service used by analytics service.
cache_6385	Caches the service used by analytics service.
cassandra	Enables cassandra database service used by the location service for historical data.
confd	Internal service.
configuration	Configures nodes and clusters.
connect	Enables connect services.
consul	Internal service.
database	Enables the database service used by analytics and configuration service.
haproxy	Enables the TCP or HTTP load balancer gateway to all service APIs.
hyperlocation	Enables hyperlocation.
location	Enables location service to compute location.
matlabengine	Provides access point heatmap for location service.
metrics	Collects system metrics.

nmsplb	Enables the load balancer service used for distributing Network Mobility Services Protocol (NMSP) messages to location services.
influxdb	Enables database services used for storing statistics from various services.
iodocs	Enables online document service for REST API offered by various services.
qlesspyworker	Internal service.
gateway	Enables gateway services that establishes secure bidirectional communication with Cisco CMX Cloud applications.

Usage Guidelines

After installing the ISO file on the Cisco MSE 3355 or 3365, use the **cmxctl status** command to check if the CMX services are running. If they are not running, use the **cmxctl start** command.

Examples

The following example shows how to display the status for the consul service:

```
[root@server]# cmxctl status consul
Done
The nodeagent service is currently running with PID: 6190
+----------------+---------------+---------+----------------+
| Host           | Service       | Status  | Uptime (HH:mm) |
+----------------+---------------+---------+----------------+
| CMX-LowEnd-200 | Analytics     | Running | 5 days, 05:49  |
+----------------+---------------+---------+----------------+
| CMX-LowEnd-200 | Cache_6378    | Running | 5 days, 05:52  |
+----------------+---------------+---------+----------------+
| CMX-LowEnd-200 | Cache_6379    | Running | 5 days, 05:49  |
+----------------+---------------+---------+----------------+
| CMX-LowEnd-200 | Cache_6380    | Running | 5 days, 05:49  |
+----------------+---------------+---------+----------------+
| CMX-LowEnd-200 | Cache_6381    | Running | 5 days, 05:49  |
+----------------+---------------+---------+----------------+
| CMX-LowEnd-200 | Cache_6382    | Running | 5 days, 05:49  |
+----------------+---------------+---------+----------------+
| CMX-LowEnd-200 | Cache_6383    | Running | 5 days, 05:49  |
+----------------+---------------+---------+----------------+
| CMX-LowEnd-200 | Cache_6385    | Running | 5 days, 05:49  |
+----------------+---------------+---------+----------------+
| CMX-LowEnd-200 | Cassandra     | Running | 5 days, 05:51  |
+----------------+---------------+---------+----------------+
| CMX-LowEnd-200 | Confd         | Running | 5 days, 05:49  |
+----------------+---------------+---------+----------------+
| CMX-LowEnd-200 | Configuration | Running | 5 days, 05:49  |
+----------------+---------------+---------+----------------+
| CMX-LowEnd-200 | Connect       | Running | 5 days, 05:49  |
+----------------+---------------+---------+----------------+
| CMX-LowEnd-200 | Consul        | Running | 5 days, 05:52  |
+----------------+---------------+---------+----------------+
| CMX-LowEnd-200 | Database      | Running | 5 days, 05:52  |
+----------------+---------------+---------+----------------+
| CMX-LowEnd-200 | Haproxy       | Running | 5 days, 05:49  |
+----------------+---------------+---------+----------------+
| CMX-LowEnd-200 | Hyperlocation | Running | 5 days, 05:47  |
+----------------+---------------+---------+----------------+
```

```
| CMX-LowEnd-200 | Influxdb      | Running | 5 days, 05:49  |
+----------------+---------------+---------+----------------+
| CMX-LowEnd-200 | Iodocs        | Running | 5 days, 05:50  |
+----------------+---------------+---------+----------------+
| CMX-LowEnd-200 | Location      | Running | 5 days, 05:49  |
+----------------+---------------+---------+----------------+
| CMX-LowEnd-200 | Matlabengine  | Running | 5 days, 05:48  |
+----------------+---------------+---------+----------------+
| CMX-LowEnd-200 | Metrics       | Running | 5 days, 05:49  |
+----------------+---------------+---------+----------------+
| CMX-LowEnd-200 | Nmsplb        | Running | 5 days, 05:47  |
+----------------+---------------+---------+----------------+
| CMX-LowEnd-200 | Qlesspyworker | Running | 5 days, 05:50  |
+----------------+---------------+---------+----------------+
| CMX-LowEnd-200 | gateway       | Running | 5 days, 05:50  |
+----------------+---------------+---------+----------------+
```

cmxctl stop

To shut down a Cisco Connected Mobile Experiences (Cisco CMX) service, use the **cmxctl stop** command.

cmxctl stop { **analytics | agent |cache_6378 | cache_6379 | cache_6380| cache_6381 |cache_6382|cache_6383|cache_6385| cassandra | configuration | confd | consul | database | haproxy | location | matlabengine | metrics | nmsplb | influxdb | iodocs | qlesspyworker** }

Syntax Description

analytics	Performs analytics on calculated location data.
agent	Manages Cisco CMX system lifecycle. starts, stops, and monitors all the services running in Cisco CMX.
cache_6378	Caches the service used by location service.
cache_6379	Caches the service used by location service.
cache_6380	Caches the service used by analytics service.
cache_6381	Caches the service used by analytics service.
cache_6382	Caches the service used by analytics service.
cache_6383	Caches the service used by analytics service.
cache_6385	Caches the service used by analytics service.
cassandra	Enables cassandra database service used by the location service for historical data.
confd	Internal service.
configuration	Configures nodes and clusters.
connect	Enables connect services.
consul	Internal service.
database	Enables the database service used by analytics and configuration service.
haproxy	Enables the TCP or HTTP load balancer gateway to all service APIs.
hyperlocation	Enables hyperlocation.
location	Enables location service to compute location.
matlabengine	Provides access point heatmap for location service.
metrics	Collects system metrics.

nmsplb	Enables the load balancer service used for distributing Network Mobility Services Protocol (NMSP) messages to location services.
influxdb	Enables database services used for storing statistics from various services.
iodocs	Enables online document service for REST API offered by various services.
qlesspyworker	Internal service.

Command Default

The services are running.

Usage Guidelines

Examples

The following example shows how to stop the analytics service:

```
[root@server]# cmxctl stop analytics
Done
The nodeagent service is currently running with PID: 16987
Stopping analytics Process...
Service analytics with pid: 19095
Retrying..
Done
Successfully shutdown analytics Process.
```

cmxctl trace mac

To enable MAC address tracing, use the **cmxctl trace mac** command.

cmxctl trace mac { **add | delete | status** } **mac** *mac-address*

Syntax Description

add	Add MAC address for tracing
delete	Delete MAC address for tracing
status	Display MAC address tracing settings
mac *mac-address*	MAC address to be configured

Command Default

None.

Command History

Release	Modification
Cisco CMX Release 10.3	This command was introduced.

Usage Guidelines

cmxctl trace mac status

```
[cmxadmin@CMX-LowEnd-200 ~]$ cmxctl trace mac status
+-------------------+
| MAC Address       |
+-------------------+
| 3c:a9:f4:6c:ee:44 |
+-------------------+
| ac:37:43:4b:cc:2f |
+-------------------+
| 3c:a9:f4:6c:5a:ac |
```

cmxctl trace status

To display current trace levels of each CMX service, use the **cmxctl trace status** command.

cmxctl trace status

Command Default

None.

Command History

Release	Modification
Cisco CMX Release 10.3	This command was introduced.

Examples

The following example shows how to display current tarce levels:

```
[root@server]# cmxctl trace mac status
+-------------------+
| MAC Address       |
+-------------------+
| 00:01:02:03:04:05 |
+-------------------+
```

cmxctl trace update

To update the trace level of a CMX service, use the **cmxctl trace update** command.

cmxctl trace update {**service** *service-to-update*|**level** *tracelevel*|[{**INFO | DEBUG**}]}

Syntax Description

service *service-to-update*	Configure service to update.
level *tracelevel*	Configure trace level [INFO | DEBUG]

Command Default

None.

Command History

Release	Modification
Cisco CMX Release 10.X	This command was introduced.

Usage Guidelines

Examples

Related Commands

Command	Description

cmxctl users

To list or to configure Cisco Connected Mobile Experiences (Cisco CMX) users using the CLI, use the **cmxctl users** command.

cmxctl users { **list** | **passwd** *username*}

Syntax Description

list	Lists all the current users.
passwd	Sets the password for a user.
username	Username of a user in Cisco CMX.

Command Default

None.

Examples

The following example shows how to list Cisco CMX users using the CLI:

```
[root@server]# cmxctl users list
+----------+--------------+-----------+
| Username | Full Name | Roles |
+==========+==============+===========+
| monitor | Monitor User | Read Only |
+----------+--------------+-----------+
| admin | Admin User | Admin |
+----------+--------------+-----------+
```

cmxctl users unlock

To unlock CMX access for a CLI or GUI user after they have been locked out, use the **cmxctl users unlock** command.

cmxctl users unlock {**cli** *username* |**gui** *username*}

Syntax Description

cli *username*	Unlocks the command line interface (CLI) user.
gui *username*	Unlocks the graphical user interface (GUI) user.

Command Default

By default, active accounts will automatically unlock in **30 minutes**. Dormant accounts—accounts inactive for 35 days or more—do not automatically unlock.

Command Modes

Admin root user

Command History

Release	Modification
Cisco CMX Release 10.5.0	This command was introduced.

Usage Guidelines

The CMX admin can unlock accounts before the 30-minute expiry time.

The following example shows how to unlock the CMX GUI user *someguy*:

```
[root@server]# cmxctl users unlock gui someguy
Account unlocked successfully
```

cmxctl version

To know the Cisco Connected Mobile Experiences (Cisco CMX) version, use the **cmxctl version** command.

cmxctl version

Command Default None.

Examples

The following example shows how to display version information for Cisco CMX:

```
[root@server]# cmxctl version
Build Version : 10.1.0-27
Build Time : 2015-05-05 03:06:45.437430
----------------------------------------------------------------------
Name : cmx-ng-container
Commit Count : 17
Short Hash : bf20ec1
----------------------------------------------------------------------
Name : cmx-ng-location
Commit Count : 5
Short Hash : efc84fa
----------------------------------------------------------------------
Name : cmx-ng-ui
Commit Count : 5
Short Hash : d793df7
----------------------------------------------------------------------
Name : cmx-ova
Build Time : Fri Feb 20 06:34:38 UTC 2015
----------------------------------------------------------------------
```

cmxloc delete

To delete a location accuracy test in Cisco CMX, use the **cmxloc delete** command.

cmxloc delete

Command Default None.

Command Modes Admin root user

Command History

Release	Modification
Cisco CMX Release 10.4	This command was introduced.

Usage Guidelines This command should be run at the cmxadmin level.

cmxloc download

To view the link to download the log files, use the **cmxloc download** command.

cmxloc download *test name*

Command Default

None

Command Modes

Admin root user

Command History

Release	Modification
Cisco CMX Release 10.4	This command was introduced.

Usage Guidelines

This command will move the log files into a location and can be downloaded using a browser.

cmxloc find

To search for the MAC address provided and return all the current attributes for the device, use the **cmxloc find** command.

cmxloc find *MAC address*

Syntax Description

MAC Address	MAC address of the device.

Command Default

None.

Command Modes

Admin root user

Command History

Release	Modification
Cisco CMX Release 10.4	This command was introduced.

Usage Guidelines

This command should be run at the cmxadmin level.

cmxloc list

To list the accuracy tests in Cisco CMX, use the **cmxloc list** command.

cmxloc list

Command Default

None

Command Modes

Admin root user

Command History

Release	Modification
Cisco CMX Release 10.4	This command was introduced.

Usage Guidelines

This command should be run at the cmxadmin level.

Example

The following example shows how to list all Cisco CMX accuracy tests:

```
[cmxadmin@cmx-nortech ~]$ cmxloc list
+------+---------+-----------------+-------------+-------------+---------+---------+------------+
| Name  | Status   | MAC Address       | Comp Freq (s) | Avg Error (m) | 90% (m) | 50% (m)
 | Test Points |
+------+---------+-----------------+-------------+-------------+---------+---------+------------+
| FB1   | PAUSED   | 98:07:2d:2a:11:fa | 0.0           | 0.0           | 0.0     | 0.0
 | 0           |
+------+---------+-----------------+-------------+-------------+---------+---------+------------+
| Test1 | FINISHED | 98:07:2d:2a:11:fa | 61.0          | 2.45          | 3.23    | 1.93
 | 1           |
+------+---------+-----------------+-------------+-------------+---------+---------+------------+
| Test2 | FINISHED | 98:07:2d:2a:11:fa | 33.25         | 4.36          | 6.27    | 3.44
 | 4           |
+------+---------+-----------------+-------------+-------------+---------+---------+------------+
```

cmxloc monitor

To monitor the location accuracy test, use the **cmxloc monitor** command.

cmxloc monitor *MAC Address*

Syntax Description

MAC Address	MAC address of the device.

Command Default

None.

Command Modes

Admin root userx

Command History

Release	Modification
Cisco CMX Release 10.4	This command was introduced.

Usage Guidelines

This command searches for a client and returns the attributes. The command monitors for any location changes and will update the screen for the new location attributes. Press the enter key to terminate the command execution.

cmxloc start

To start a location accuracy test, use the **cmxloc start** command.

cmxloc start *MAC Address Test NameX, Y LocationsTime*

Syntax Description

MAC Address	MAC address of the device to run the location accuracy test.
Test Name	Name of the new location accuarcy test.
X, Y Locations	X and Y location information.
Time	Estimated time to run the test.

Command Default

None

Command Modes

Admin root user

Command History

Release	Modification
Cisco CMX Release 10.4	This command was introduced.

Usage Guidelines

This command triggers the location accuracy test.

cmxos addswap

To add a 10 GB space to the operating system,, use the **cmxos addswap** command.

cmxos addswap

Command Default

This command has no arguments or keywords.

Usage Guidelines

This command should be run at the root user level.

Examples

The following example shows how to increase disk space in the operating system:

```
[root@server]# cmxos addswap
10485760+0 records in
10485760+0 records out
10737418240 bytes (11 GB) copied, 29.6845 s, 362 MB/s
Setting up swapspace version 1, size = 10485756 KiB
no label, UUID=2734f069-e687-4635-b2d6-9381241bc7ee
swap added, run system info to verify
[root@cmx-vmdev146 ~]#
```

cmxos adminui

To start, stop, and restart the administrator UI, use the **cmxos adminui** command.

cmxos adminui {**start**|**stop**|**restart**}

Syntax Description

start	Starts the administrator UI.
stop	Stops the administrator UI.
restart	Restarts the administrator UI.

Command Default

None

Command History

Release	Modification
Cisco CMX Release 10.2	This command was introduced.

Example

The following example shows how to stop the administrator UI:

```
[root@server]# cmxos adminui stop
Stopping adminui...
```

cmxos apiserver disable

To disable Cisco CMX API server, use the **cmxos apiserver disable** command.

cmxos apiserver disable

Syntax Description

disable	Disables the Cisco CMX API server.

Command Default

None

Command Modes

Admin root user

Command History

Release	Modification
Cisco CMX Release 10.4	This command was introduced.

Example

The following example shows how to disable the Cisco CMX API server:

```
[root@server]# cmxos apiserver disable
Starting CMX API Server...
```

cmxos apiserver enable

To enable Cisco CMX API server, use the **cmxos apiserver enable** command.

cmxos apiserver enable

Syntax Description

enable	Enables the Cisco CMX API server.

Command Default

None

Command Modes

Admin root user

Command History

Release	Modification
Cisco CMX Release 10.4	This command was introduced.

Example

The following example shows how to enable the Cisco CMX API server:

```
[root@server]# cmxos apiserver enable
Enabling CMX API Server...
Starting CMX API Server...
```

cmxos apiserver reset

To reset the configuration of the Cisco CMX API server, use the **cmxos apiserver reset** command.

cmxos apiserver reset

Syntax Description

reset	Resets CMX API Server configuration.

Command Default

None

Command Modes

Admin root user

Command History

Release	Modification
Cisco CMX Release 10.4	This command was introduced.

Example

The following example shows how to reset the Cisco CMX API server:

```
[root@server]# cmxos apiserver reset
Resetting CMX API Server...
```

cmxos apiserver restart

To restart Cisco CMX API server, use the **cmxos apiserver restart** command.

cmxos apiserver restart

Syntax Description

restart	Restarts the Cisco CMX API server.

Command Default

None

Command Modes

Admin root user

Command History

Release	Modification
Cisco CMX Release 10.4	This command was introduced.

Example

The following example shows how to start the Cisco CMX API server:

```
[root@server]# cmxos apiserver restart
Restarting CMX API Server...
```

cmxos apiserver start

To start Cisco CMX API server, use the **cmxos apiserver** command.

cmxos apiserver { **start | stop |restart| enable| disable| status| user**}

Syntax Description

start	Starts the Cisco CMX API server.
stop	Stops the Cisco CMX API server.
restart	Restarts the Cisco CMX API server.
enable	Enables the Cisco CMX API server.
disable	Disables the Cisco CMX API server.
status	Displays the current status of the Cisco CMX API server.
user	Sets the userid and password for the CMX API Server.

Command Default

None

Command Modes

Admin root user

Command History

Release	Modification
Cisco CMX Release 10.4	This command was introduced.

Example

The following example shows how to start the Cisco CMX API server:

```
[root@server]# cmxos apiserver start
Starting CMX API Server...
```

cmxos apiserver status

To view the status of Cisco CMX API server, use the **cmxos apiserver status** command.

cmxos apiserver status

Syntax Description

status	Displays the current status of the Cisco CMX API server.

Command Default

None

Command Modes

Admin root user

Command History

Release	Modification
Cisco CMX Release 10.4	This command was introduced.

Example

The following example shows how to view the status of Cisco CMX API server:

```
[root@server]# cmxos apiserver status
+--------------------------+
|  CMX API Server Status   |
+---------------+----------+
| Configuration | Enabled  |
+---------------+----------+
| Status        | Running  |
+---------------+----------+
```

cmxos apiserver stop

To stop the CMX API Server, use the **cmxos apiserver stop** command.

cmxos apiserver stop

Syntax Description

stop	Stops the Cisco CMX API server.

Command Default

None

Command Modes

Admin root user

Command History

Release	Modification
Cisco CMX Release 10.4	This command was introduced.

Example

The following example shows how to start the Cisco CMX API server:

```
[root@server]# cmxos apiserver stop
Stopping CMX API Server...
```

cmxos apiserver user

To manage user IDs and passwords for the Cisco CMX API server, use the **cmxos apiserver user** command.

cmxosapiserveruser {**add** *userid password* | **delete** *userid* | **list**}

Syntax Description

add	Adds a new CMX API server user.
userid	Enter a user ID (username) for the new CMX API server user.
password	Enter a temporary password for the new user.
delete *userid*	Deletes the specified user ID.
list	Displays CMX API server user IDs.

Command Default

None

Command Modes

Admin root user

Command History

Release	Modification
Cisco CMX Release 10.5	This command was modified.
Cisco CMX Release 10.4	This command was introduced.

Example

The following example shows how to add a new user for the Cisco CMX API server:

```
[root@server]# cmxos apiserver user add
Please enter the userid for the CMX API Server: user1
Please enter the password for the CMX API Server: password
Please re-enter the password for the CMX API Server: password
Restarting CMX API Server...
Stopping CMX API Server...
Starting CMX API Server...
Successfully updated userid/password and restarted the CMX API Server
```

The following example shows how to list Cisco CMX API server users:

```
[root@server]# cmxos apiserver user list
+---------+
| User ID |
+=========+
| admin   |
+---------+
| user1   |
+---------+
```

cmxos backup

To back up a node, use the **cmxos backup** command.

cmxos backup{**path**|**i**|**all**|**help**}

Syntax Description

--path DIRECTORY	Path where the backup file will be created.
-i, --include_only TEXT	Backups selected parts only. Options are database, cache, cassandra, influxdb, consul, floormaps, licenses, setup, and connectimages.
--all	Includes InfluxDB data in backup bundle. If specific options are not selected, only the following services are included in the backup bundle: confd, database, cache, cassandra, floormaps, licenses, setup, and connectimages.
--HELP	Shows the help content.

Command Default

None.

Usage Guidelines

This command should to be run using the cmxadmin (non-root) account. The destination directory for backup file requires rwx permission. When you specify a backup directory other than /tmp, ensure that the directory has "r/w/x" permission by user:cmx.

Examples

The following example shows how to back up a node:

```
[cmxadmin@10.10.10.10:~]$ cmxos backup
Please enter the path for backup file [/tmp]:
[17:43:50] Preparing for backup...
[17:43:50] Backup Database...
[17:43:51] Backup Cache...
[17:43:51] Backup Cassandra...
[17:43:53] Backup InfluxDb...
[17:43:53] Backup Consul...
[17:43:53] Backup Floormaps...
[17:43:53] Backup node configuration...
[17:43:59] Creating tar file..
[17:43:59] Done Backup. Created backup file
/tmp/cmx_backup_cmx-vmdev117_2015_03_10_17_43.tar.gz
```

cmxos benchmark disk

To benchmark disk performance, use the **cmxos benchmark disk** command.

cmxos benchmark disk [{ **--verbose** }]

Syntax Description

--verbose	Prints full output.

Command Default

None.

Command History

Release	Modification
Cisco CMX Release 10.2	This command was introduced.

Usage Guidelines

You must manually stop all Cisco CMX services before executing this command.

Examples

The following example shows how to verify the disk performance:

```
[root@server]# cmxos benchmark disk
This process will check disk performance on /opt/cmx/srv/
You must stop all CMX services manually before running this command
Do you want to continue?: yes
Running disk performance...this may take a while...please wait...
READ IOPS: 6085, WRITE IOPS: 2024
```

cmxos checkpostgresdatasize

To display postgres data size, use the **cmxos checkpostgresdatasize** command.

cmxos checkpostgresdatasize

Command Default

None.

Command History

Release	Modification
Cisco CMX Release 10.3	This command was introduced.

Examples

```
[root@server]# cmxos checkpostgresdatasize
651488 /opt/cmx/srv/postgres
```

cmxos clean

To clean up files on CMX, use the **cmxos clean** command.

cmxos clean {**find**|**normal**|{**delete**}}

Syntax Description

find	Find files over 1 Gigabyte in size.
normal	List files which can be cleaned.
delete	Remove the files listed.

Command Default

None.

Command History

Release	Modification
Cisco CMX Release 10.3	This command was introduced.

Examples

The following example shows how to search for large files:

```
[root@server]# cmxos clean find
Starting search for large files
Size: 1.96G File: /tmp/cmx_backup_CMX-LowEnd-200_2017_01_18_17_56.tar.gz
Size: 2.36G File: /tmp/cmx_backup_CMX-LowEnd-200_2017_03_14_11_16.tar.gz
Size: 2.43G File: /tmp/cmx_backup_CMX-LowEnd-200_2017_03_20_14_36.tar.gz
Size: 2.32G File: /tmp/cmx_backup_CMX-LowEnd-200_2017_01_18_18_00.tar.gz
Size: 1.45G File: /var/log/maillog-20170212.gz
Size: 2.63G File: /var/log/maillog-20170205.gz
Size: 6.84G File: /home/cmxadmin/cmx_backup_CMX-LAC-210_2017_03_23_22_09.tar.gz
Size: 1.17G File: /home/cmxadmin/CISCO_CMX-10.3.0-58.cmx
Completed search for large files
```

```
[root@server]# cmxos clean normal
Files which can be removed in: /opt/cmx/var/log
/opt/cmx/var/log/adminui/adminui.pid
/opt/cmx/var/log/adminui/webui.ans
/opt/cmx/var/log/agent/server.log.3
/opt/cmx/var/log/agent/server.log.1
/opt/cmx/var/log/agent/server.log.5
/opt/cmx/var/log/agent/server.log.2
/opt/cmx/var/log/agent/server.log.4
/opt/cmx/var/log/backup.log.2
/opt/cmx/var/log/backup.log.3
/opt/cmx/var/log/setup.log.8
/opt/cmx/var/log/setup.log.7
/opt/cmx/var/log/cmxjobs.log.1
/opt/cmx/var/log/cmxjobs.log.5
```

```
[root@server]# cmxos clean normal --delete
Are you sure you wish to remove files? [y/N]: y
Removing files in: /opt/cmx/var/log
Remove: /opt/cmx/var/log/agent/server.log.2
Remove: /opt/cmx/var/log/agent/server.log.1
Remove: /opt/cmx/var/log/cmxjobs.log.5
Remove: /opt/cmx/var/log/cmxjobs.log.2
```

```
Remove: /opt/cmx/var/log/cmxjobs.log.4
Remove: /opt/cmx/var/log/cmxjobs.log.1
Remove: /opt/cmx/var/log/cmxjobs.log.3
```

cmxos configure

To configure the network and operating system parameter, use the **cmxos configure** command.

cmxos configure

Command Default

None

Usage Guidelines

This command should to be run at the root user level. You can use the --force option to force a fresh configuration if the device is already configured.

Examples

The following example shows how to configure the network and operating system parameters:

```
[root@server]# cmxos configure --force
*** The system is already configured
********************************************************************************
Checking if the machine meets required specification...
********************************************************************************
+----------+------------------------+--------------+--------+
| Check | expected | actual | Result |
+==========+========================+==============+========+
| memory | 8GB | 25GB | ? |
+----------+------------------------+--------------+--------+
| cpu | 4 | 8 | ? |
+----------+------------------------+--------------+--------+
| disk | 50GB | 51GB | ? |
+----------+------------------------+--------------+--------+
| hostname | rfc compliant hostname | cmx-vmdev146 | ? |
+----------+------------------------+--------------+--------+
```

cmxos encryptdisk

To encrypt CMX data on the `/opt` partition, use the **cmxos encryptdisk** command.

cmxos encryptdisk

Command Default

Encryption is not enabled.

Command Modes

Admin root user

Command History

Release	Modification
Cisco CMX Release 10.5	This command was introduced.

Usage Guidelines

Use this command when your security protocol requires encryption of CMX data. For more information about this task, refer to Cisco CMX Configuration Guide, release 10.5.

Note We recommend that you enable encryption at installation, or as soon as possible afterward. The encryption process requires time proportional to the amount of data present on the `/opt` partition.

Important Encryption cannot be disabled or undone. It requires someone with root access credentials to manually enter the encrypted disk passphrase from the command line each time the device is rebooted or powered up.

Example

The following example show how to enable encryption after CMX installation.

```
[root@server]# cmxos encryptdisk

Have you closed all SSH sessions to this CMX? [y/N]:y
Are you sure you want to encrypt the /opt partition of the disk ? [y/N]:y

Checking disk space requirements for backing up /opt folder...
Looks Good.

Proceed with stopping all CMX services? [y/N]:y

Backing up /opt folder into /var ...
tar backup done.
Press Enter key to enter rescue mode and begin the encryption.
```

Press Enter.

```
Shredding /opt ...
Shread: List of deleted folders
Shread: List of deleted folders
Shread: List of deleted folders
...
Formatting /opt ...
```

```
You will be prompted to set a passphrase for encrypted disk /opt.
Choose a passphrase, Enter and Verify it.

Note:
On every boot / power up, you will be prompted for this passphrase.
System will continue only if this passphrase is correct.

WARNING!
========
This will overwrite data on /opt irrevocably.
Are you sure? (Type uppercase yes): YES
```

Enter a passphrase.

```
Enter passphrase:
Verify passphrase:
Command successful.

Opening /opt ...
Enter passphrase for /opt:

Encryption of /opt is complete.

System will reboot now.
Upon (every) restart, when prompted to enter passphrase for /opt partition,
enter the passphrase you just set.

Press Enter to continue with reboot
```

Press **Enter**.

```
Please enter passphrase for disk opt on /opt!:
```

cmxos etchosts

To configure etc hosts, use the **cmxos etchosts** command.

cmxos etchosts

Syntax Description

This command has no arguments or keywords.

Command Default

None.

Command History

Release	Modification
Cisco CMX Release 10.2	This command was introduced.

Usage Guidelines

This command will run and returns no status.

Examples

```
[root@server]# cmxos etchosts
[root@cmx-vmdev185 cmxadmin]# cmxos etchosts --help
Usage: __main__.py etchosts [OPTIONS]
  Configure /etc/hosts properly
Options:
  --help  Show this message and exit.
```

cmxos firstboot

To set up the Cisco Connected Mobile Experiences (Cisco CMX) again, use the **cmxos firstboot** command.

cmxos firstboot

Command Default

None.

Usage Guidelines

This command should be run at the root user level. You can use the --force option to force a fresh configuration if the device is already configured.

Examples

The following example shows how to set up Cisco CMX again:

```
[root@server]# cmxos firstboot
Not first boot....Exiting...
```

cmxos fixhaproxy

To verify the HA proxy permissions on Cisco Connected Mobile Experiences (Cisco CMX), use the **cmxos fixhaproxy** command.

cmxos fixhaproxy

Command Default

None.

Usage Guidelines

This command should be run at the root user level.

Examples

The following example shows how to verify HA proxy permissions:

```
[root@server]# cmxos fixhaproxy
Raising haproxy setcap...
```

cmxos health

To check the health of a Cisco CMX system, use the **cmxos health** command.

cmxos health {**filedescriptors**|**ntp**}

Syntax Description

filedescriptors	Checks the CMX file descriptors for issues.
ntp	Checks the CMX NTP systems for issues.

Command Default

None.

Command History

Release	Modification
Cisco CMX Release 10.5	This command was modified.
Cisco CMX Release 10.2	This command was introduced.

Usage Guidelines

The **cmxos health filedescriptors** command returns the total number of open file descriptors. The **cmxos health ntp** command returns the status of the CMX Network Time Protocol (NTP) systems.

Examples

The following example shows how to check the health of a Cisco CMX system:

```
[root@server]# cmxos health filedescriptors
2195 total file descriptors open

[root@server]# cmxos health ntp
NTP Synchronization error:
unsynchronised
  time server re-starting
   polling server every 8 s
```

cmxos inventory

To show full inventory of a node, use the **cmxos inventory** command.

cmxos inventory

Command Default

None.

Command History

Release	Modification
Cisco CMX Release 10.2	This command was introduced.

Examples

The following example shows how to view the inventory details:

```
[root@server]# cmxos inventory
UDI: AIR-MSE-3365-K9 Serial Number -  FCH1904V055

State of the RAID array: Healthy and working normally
Capacity of the RAID array: 1.088 TB
Type of disks in RAID array: Spinning Disk Drive
All chassis fans operating normally
One of the power supplies in the chassis has failed or it has not been installed/connected
Disk Capacity: 1.0T
Disk space used: 33.2G
Memory installed: 63.00G
CPUs  installed: 20
CPU Type:  Intel(R) Xeon(R) CPU E5-2650 v3 @ 2.30GHz
Server uptime: 6 Hours, 59 Minutes, 44 Seconds
Server boot time: Mon, 27 Mar 2017 16-44-36
Number of server reboots: 1
```

cmxos kill

To kill services, use the **cmxos kill** command.

cmxos kill silent

Syntax Description

--silent	Slinetly kills services without confirmation.

Command Default

None.

Command History

Release	Modification
Cisco CMX Release 10.2	This command was introduced.

Usage Guidelines

Examples

```
[root@cmx-vmdev185 cmxadmin]# cmxos kill
This command will force kill all CMX processes, for dev use only
Do you want to continue?:
```

cmxos monit

To manage the monitoring of Cisco CMX services, use the **cmxos monit** command.

cmxos monit {**configure**|**start**|**stop**|**wipe**}

Syntax Description

configure	Configures the default monitor settings.
start	Enables monitored services.
stop	Enables monitored services.
wipe	Deletes the default monitoring settings. **Note** To reset to the default monitoring settings, use the **cmxos monit** configure command

Command Default

Disabled.

Command History

Release	Modification
Release 10.2.0	This command was introduced.

Example

The following example shows how to display the monitoring settings:

```
[cmxadmin]$ cmxos monit configure
Deleting all monit configurations....
Configuring monit mail settings...
Configuring monit OS settings...
Configuring monit CMX services settings...
```

The following example shows how to enable monitoring of Cisco CMX services:

```
[cmxadmin]$ cmxos monit start
Starting monit:
```

cmxos openports

To open ports, based on a node rule, use the **cmxos openports** command.

cmxos openports { **analytics | location | database** }

Syntax Description

analytics	Adds a 10-GB swap space to a node.
location	Configures the network and operating system parameters.
database	Sets up the Cisco Connected Mobile Experiences (Cisco CMX) database again.

Command Default

None.

Usage Guidelines

This command should be run at the root user level.

Examples

The following example shows how to open ports based on a node:

```
[root@server]# cmxos openports analytics
Opened port 6541
Opened port 6542
Successfully opened all ports. Saving iptables info...
```

cmxos reconfigure

To change network configuration information after deployment, use the **cmxos reconfigure** command.

cmxos reconfigure

Command Default

None

Usage Guidelines

This command, which should be run at the root user level, also allows you to change the IP address, netmask, default gateway, and DNS server information. Changing the hostname through command line is not supported. Use the **cmxos reconfigure** command to change a hostname, IP address, or any of the network parameters.

NTP server and timezone/date configurations are also executed by running this command.

Note Do not execute the **cmxos reconfigure** command when Cisco CMX services are not installed. This will prevent execution failures.

Examples

The following example shows how to reconfigure the network after Cisco CMX installation:

```
[root@server]# cmxos reconfigure
This command will wipe all system metrics data when the configuration is changed
Do you want to continue?: yes
Please enter hostname [cisco-cmx-centos7-test0]:
Please enter IP address [192.0.2.1]:
Please enter netmask [255.255.255.0]:
Please enter gateway [192.0.2.2]:
Please enter DNS server [192.0.2.3]:
Please enter search domain name [example.com]:
Are the network settings correct?: yes
Stopping keepalived service
Verify keepalived service has been stopped
Successfully stopped the keepalived service.
Starting keepalived service
ERROR: Failed to start keepalived service.
********************************************************************************
Configuring NTP Server...
********************************************************************************
Please enter the NTP server name (blank for no NTP server) [ntp.esl.cisco.com]:
Setting ntp server ntp.esl.cisco.com
********************************************************************************
Configuring Timezone and date...
********************************************************************************
Please identify a location so that time zone rules can be set correctly.
Please select a continent or ocean.
 1) Africa
 2) Americas
 3) Antarctica
 4) Arctic Ocean
 5) Asia
 6) Atlantic Ocean
 7) Australia
 8) Europe
 9) Indian Ocean
```

```
10) Pacific Ocean
11) none - I want to specify the time zone using the Posix TZ format.
#? 10
Please select a country.
 1) Chile                       15) Northern Mariana Islands
 2) Cook Islands                16) Palau
 3) Ecuador                     17) Papua New Guinea
 4) Fiji                        18) Pitcairn
 5) French Polynesia            19) Samoa (American)
 6) Guam                        20) Samoa (western)
 7) Kiribati                    21) Solomon Islands
 8) Marshall Islands            22) Tokelau
 9) Micronesia                  23) Tonga
10) Nauru                       24) Tuvalu
11) New Caledonia               25) United States
12) New Zealand                 26) US minor outlying islands
13) Niue                        27) Vanuatu
14) Norfolk Island              28) Wallis & Futuna
#? 25
Please select one of the following time zone regions.
 1) Eastern (most areas)              16) Central - ND (Morton rural)
 2) Eastern - MI (most areas)         17) Central - ND (Mercer)
 3) Eastern - KY (Louisville area)    18) Mountain (most areas)
 4) Eastern - KY (Wayne)              19) Mountain - ID (south); OR (east)
 5) Eastern - IN (most areas)         20) MST - Arizona (except Navajo)
 6) Eastern - IN (Da, Du, K, Mn)      21) Pacific
 7) Eastern - IN (Pulaski)            22) Alaska (most areas)
 8) Eastern - IN (Crawford)           23) Alaska - Juneau area
 9) Eastern - IN (Pike)               24) Alaska - Sitka area
10) Eastern - IN (Switzerland)        25) Alaska - Annette Island
11) Central (most areas)              26) Alaska - Yakutat
12) Central - IN (Perry)              27) Alaska (west)
13) Central - IN (Starke)             28) Aleutian Islands
14) Central - MI (Wisconsin border)   29) Hawaii
15) Central - ND (Oliver)
#? 21

The following information has been given:

        United States
        Pacific

Therefore TZ='America/Los_Angeles' will be used.
Local time is now:      Mon May 21 08:25:39 PDT 2018.
Universal Time is now:  Mon May 21 15:25:39 UTC 2018.
Is the above information OK?
1) Yes
2) No
#? 1
The Timezone selected is America/Los_Angeles

The current time is Mon May 21 08:25:40 PDT 2018

Enter Date (YYYY-mm-dd hh:mm:ss) (blank to sync with ntp):  []:
*** No changes were detected
```

Note This command opens the Device Configuration window, where you can take the appropriate action, that is reconfigure the device or the DNS.

cmxos restore

To restore a node, use the **cmxos restore** command.

cmxos restore {**file**|**path**|**i**|**ignore_version**|**ignore_licenses**|**help**}

Syntax Description

--file PATH	Path where the restore file is located.
--path DIRECTORY	Path where the restore file will be created.
-i, --include_only TEXT	Restore selected parts only. Options are database, cache, cassandra, influxdb, consul, floormaps, licenses, setup, connectimages.
--ignore_version	Skip version check during restore.
--ignore_licenses	Skip restoring Cisco CMX licenses contained in the backup bundle and retain local licenses.
--HELP	Shows the help content.

Command Default

None.

Usage Guidelines

By default, this command performs restoration of all services excluding the InfluxDB data service. If you want to restore InfluxDB data, explicitly enter the InfluxDB service name along with other services by using *--include_only* while running the command.

Examples

The following example shows how to restore a node:

```
[root@server]# cmxos restore
Please enter the backup file path: /tmp/cmx_backup_cmx-vmdev117_2015_03_10_17_43.tar.gz
[17:44:12] Preparing for restore...
[17:44:12] Untarring backup file...
[17:44:13] Stopping all services...
[17:44:16] Restoring Database...
Restarting database...
[17:44:26] Restoring Cache...
Stopping cache_6379...
Restarting cache_6379...
Stopping cache_6381...
Restarting cache_6381...
Stopping cache_6380...
Restarting cache_6380...
[17:44:55] Restoring Cassandra...
Stopping Cassandra...
Restarting Cassandra...
..............
[17:45:19] Restoring Influxdb...
[17:45:19] Restoring consul...
[17:45:19] Restoring floormaps...
[17:45:19] Running Post Restore Tasks...
[17:45:19] Migrating Schemas...
[17:45:19] Migrating Cassandra schemas...
```

```
[17:45:20] Restarting all services...
[17:45:23] Done
```

cmxos sslcert

To replace default haproxy certificate, use the **cmxos sslcert** command.

cmxos sslcert

Command Default

None.

Command History

Release	Modification
Cisco CMX Release 10.2	This command was introduced.

cmxos sysproxy

To enable an outbound proxy on your Cisco CMX server, use the **cmxos sysproxy** command.

cmxos sysproxy {**clear**|**disable**|**enable**|**no_proxy**|**proxy**|**show**|**ftp_proxy**|**http_proxy**|**https_proxy**}

Syntax Description

clear	Removes the proxy settings.
disable	Disables the use of the proxy settings.
enable	Enables the use of the proxy settings.
no_proxy	Sets the no_proxy environment variable.
proxy	Sets the proxy environment variables for http_proxy, https_proxy, ftp_or proxy.
show	Displays the proxy settings.
ftp_proxy	Sets the ftp proxy.
http_proxy	Sets the http proxy.
https_proxy	Sets the https proxy.

Command Default

Proxy is disabled.

Command Modes

Admin root user

Command History

Release	Modification
Cisco CMX Release 10.3.1	This command was introduced.

Usage Guidelines

This command supersedes the information from this post: https://communities.cisco.com/docs/DOC-70904.

Use this command for environments where an outbound proxy is required on the Cisco CMX server. For example, if you happen to be in a secure internal network where even outbound traffic via HTTPS requires that it move through a proxy server.

If you set the **proxy** setting on the Cisco CMX server, make sure to use the **no_proxy** setting on the attached controllers to avoid interference with the NMSP Network Mobility Services Protocol (NMSP).

If you change the Cisco CMX proxy settings, you must restart Cisco CMX for the change to take effect. Use the **cmxctl restart** command to restart Cisco CMX.

Example

The following example shows how to set a proxy on the Cisco CMX server, and then verify the change and restart Cisco CMX:

```
[root@server]# cmxos sysproxy proxy https://proxy-wsa.esl.cisco.com:80

[root@server]# cmxos sysproxy show
USE_PROXY=1
```

```
PROXY_URL=http://proxy-wsa.esl.cisco.com:80
NO_PROXY_LIST=""
[root@server]# cmxctl restart
```

The following example shows how to enable a proxy on the Cisco CMX server, and then verify the change and restart Cisco CMX:

```
[root@server]# cmxos sysproxy enable

[root@server]# cmxos sysproxy show
USE_PROXY=1
PROXY_URL=http://proxy-wsa.esl.cisco.com:80
NO_PROXY_LIST=""
[root@server]# cmxctl restart
```

The following example shows how to disable a proxy on the Cisco CMX server, and then verify the change and restart Cisco CMX:

```
[root@server]# cmxos sysproxy disable

[root@server]# cmxos sysproxy show
USE_PROXY=0
PROXY_URL=http://proxy-wsa.esl.cisco.com:80
NO_PROXY_LIST=""
[root@server]# cmxctl restart
```

The following example shows how to clear proxy settings, and then verify the change and restart Cisco CMX:

```
[root@server]# cmxos sysproxy clear

[root@server]# cmxos sysproxy show
USE_PROXY=0
PROXY_URL=""
NO_PROXY_LIST=""
[root@server]# cmxctl restart
```

cmxos techsupport

To collect technical support information, use the **cmxos techsupport** command.

cmxos techsupport { **all | cmx | location | map | network | services | system** }

Syntax Description

all	Collect all technical support information
cmx	Collect CMX information
location	Collect location support information
map	Collect map support information
network	Collect network information
services	Collect CMX services information.
system	Collect system information
silent	Silently run with prompting

Command Default

None.

Usage Guidelines

This command will return all CLI command outputs helpful for debugging.

Command History

Release	Modification
Cisco CMX Release 10.3	This command was introduced.

cmxos techsupport dump

To dump all technical support information, use the **cmxos techsupport dump** command.

cmxos techsupport dump

Command Default

None.

Command History

Release	Modification
Cisco CMX Release 10.3	This command was introduced.

cmxos upgrade

To upgrade Cisco Connected Mobile Experiences (Cisco CMX) with a new Red Hat Package Manager (RPM) or package, use the **cmxos upgrade** command.

cmxos upgrade

Command Default

None.

Usage Guidelines

This command should be run at the root user level. The CLI accepts either a local file or an HTTP URL. This command works only when you have a later version than the existing one to upgrade.

Examples

The following example shows how to upgrade the Cisco CMX using RPM or package:

```
[root@server]# cmxos upgrade
The nodeagent service is not running.
Agent is not running, starting it now.
Starting nodeagent Process...
Stopping nodeagent Process...
Done
Successfully shutdown nodeagent Process.
Stopping consul Process...
Successfully shutdown consul Process.
Stopping qlesspyworker Process...
Successfully shutdown qlesspyworker Process.
Stopping cassandra Process...
Successfully shutdown cassandra Process.
Stopping iodocs Process...
The iodocs service is not running.
Stopping redis6383 Process...
Successfully shutdown redis6383 Process.
Stopping redis6380 Process...
Successfully shutdown redis6380 Process.
Stopping redis6381 Process...
Successfully shutdown redis6381 Process.
Stopping influxdb Process...
The influxdb service is not running.
Stopping collectd Process...
The collectd service is not running.
Stopping confd Process...
The confd service is not running.
Stopping redis6379 Process...
Successfully shutdown redis6379 Process.
Stopping redis6378 Process...
Successfully shutdown redis6378 Process.
Stopping haproxy Process...
Stopping postgres Process...
Successfully shutdown postgres Process.
Stopping analytics Process...
The analytics service is not running.
Stopping location Process...
The location service is not running.
Stopping configuration Process...
The configuration service is not running.
Stopping halo Process...
The halo service is not running.
```

```
Stopping matlabengine Process...
The matlabengine service is not running.
Stopping nmsplb Process...
The nmsplb service is not running.
Shutting down
```

cmxos vacuumdb

To run the full vacuum command on the postgres database running within Cisco CMX, use the **cmxos vacuumdb** command.

cmxos vacuumdb

Command Default

None

Command Modes

Admin root user

Command History

Release	Modification
Cisco CMX Release 10.4	This command was introduced.

Usage Guidelines

This command internally runs the 'vacuumdb –vfa' on the postgres DB. This command is an advanced command and should not be regularly used by the customer. In case of the postgres DB taking up too much disk space, this command may be run to compact the DB.

cmxos verify

To verify the virtual machine configuration, use the **cmxos verify** command.

cmxos verify

Command Default

None.

Examples

The following example shows how to verify the virtual machine configuration:

```
[root@server]# cmxos verify
+----------+------------------------+--------------+---------+
| Check | expected | actual | Result |
+==========+========================+==============+=========+
| memory | 8GB | 25GB | ? |
+----------+------------------------+--------------+---------+
| cpu | 4 | 8 | ? |
+----------+------------------------+--------------+---------+
| disk | 50GB | 51GB | ? |
+----------+------------------------+--------------+---------+
| hostname | rfc compliant hostname | cmx-vmdev146 | ? |
+----------+------------------------+--------------+---------+
```