



# Cisco Connected Mobile Experiences Cloud

Cisco Connected Mobile Experiences (CMX) communicates with the Cisco wireless embedded wireless controller using the Network Mobility Services Protocol (NMSP), which runs over a connection-oriented (TLS) transport. This transport provides a secure 2-way connectivity and is convenient when both the embedded wireless controller and CMX are on-premise and there is direct IP connectivity between them.

Cisco CMX Cloud is a cloud-delivered version of the on-premise CMX. To access Cisco CMX Cloud services, HTTPS is used as a transport protocol.

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## Configuring Cisco CMX Cloud

Follow the procedure given below to configure CMX Cloud:

### Before you begin

- **Configure DNS**—To resolve fully qualified domain names used by NMSP cloud-services, configure a DNS using the **ip name-server *server\_address*** configuration command as shown in Step 2.
- **Import 3rd party root CAs**—The controller verifies the peer and the host based on the certificate that is sent by the CMX when a connection is established. However, root CAs are not preinstalled on the controller. You have to import a set of root CAs trusted by Cisco to the trustpool of the crypto PKI by using the **crypto pki trustpool import url <url>** configuration command as shown in Step 3.
- A successful registration to Cisco Spaces is required to enable **server url** and **server token** parameters configuration which is needed to complete this setup.

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	<b>configure terminal</b> <b>Example:</b> Device# configure terminal	Enters global configuration mode.

	Command or Action	Purpose
<b>Step 2</b>	<b>ip name-server <i>namesvr-ip-addr</i></b> <b>Example:</b> Device(config)#ip name-server 10.10.10.205	Configures the DNS on the controller to resolve the FQDN names used by the NMSP cloud-services.
<b>Step 3</b>	<b>crypto pki trustpool import url <i>url</i></b> <b>Example:</b> Device(config)#crypto pki trustpool import url http://www.cisco.com/security/pki/trs/ios.p7b	Imports the 3rd party root CA. The controller verifies the peer using the imported certificate.
<b>Step 4</b>	<b>[no] nmsp cloud-services server url <i>url</i></b> <b>Example:</b> Device(config)# nmsp cloud-services server url https://cisco.com	Configures the URL used for cloud services. Use the <b>no</b> form of the command to delete the server url from the configuration.
<b>Step 5</b>	<b>[no] nmsp cloud-services server token <i>token</i></b> <b>Example:</b> Device(config)# nmsp cloud-services server token test	Configures the authentication token for the NMSP cloud service. Use the <b>no</b> form of the command to delete the server token from the configuration.
<b>Step 6</b>	<b>[no] nmsp cloud-services http-proxy <i>proxy-server port</i></b> <b>Example:</b> Device(config)# nmsp cloud-services http-proxy 10.0.0.1 10	(Optional) Configures HTTP proxy details for the NMSP cloud service. Use the <b>no</b> form of the command to disable the use of a HTTP proxy.
<b>Step 7</b>	<b>[no] nmsp cloud-services enable</b> <b>Example:</b> Device(config)# nmsp cloud-services enable	Enables NMSP cloud services. Use the <b>no</b> form of the command to disable the feature.

## Verifying Cisco CMX Cloud Configuration

Use the following commands to verify the CMX Cloud configuration.

To view the status of active NMSP connections, use the following command:

```
Device# show nmsp status
```

```

MSE IP Address   Tx Echo Resp  Rx Echo Req   Tx Data   Rx Data   Transport
-----
9.9.71.78       0             0             1          1          TLS
64.103.36.133  0             0             1230       2391       HTTPs

```

To view the NMSP cloud service status, use the following command:

```
Device# show nmsp cloud-services summary
```

```
CMX Cloud-Services Status
```

```
-----  
Server: https://yenth8.cmxcisco.com  
IP Address: 64.103.36.133  
Cmx Service: Enabled  
Connectivity: https: UP  
Service Status: Active  
Last Request Status: HTTP/1.1 200 OK  
Heartbeat Status: OK
```

To view the NMSP cloud service statistics, use the following command:

```
Device# show nmsp cloud-services statistics
```

```
CMX Cloud-Services Statistics  
-----
```

```
Tx DataFrames: 3213  
Rx DataFrames: 1606  
Tx HeartBeat Req: 31785  
Heartbeat Timeout: 0  
Rx Subscr Req: 2868  
Tx DataBytes: 10069  
Rx DataBytes: 37752  
Tx HeartBeat Fail: 2  
Tx Data Fail: 0  
Tx Conn Fail: 0
```

To view the mobility services summary, use the following command:

```
Device# show nmsp subscription summary
```

```
Mobility Services Subscribed:
```

```
Index Server IP Services  
-----
```

```
1 209.165.200.225 RSSI, Info, Statistics, AP Monitor, AP Info  
2 209.165.200.225 RSSI, Statistics, AP Info
```

