



Upload

This chapter provides information about upload of managed ONS 15454 Network Elements through Cisco Transport Manager.

The Cisco Transport Manager Equipment Module will upload the following fabric and service elements from your optical network:

- Node
- Card
- Physical Ports (for Electrical and Optical interfaces)
- OC Cross Connects
- Interworking Cross Connects
- Port Protection Groups

Before Upload

This section outlines the following preliminary configuration steps you must complete before you attempt to upload from CTM:

- Configuring the TL1 GateWay—this step is required to establish communication between CPC and CTM using CTM GateWay’s TL1 interface.
- Configuring the CTM Server Configuration File—this step is required to enable CPC to communicate with the CTM server.
- Creating a Network Object—this step is required to create an object that represents the managed CTM network in CPC’s database.

Configuring the TL1 Gateway

An OSS Client Profile for CPC must be created in CTM GateWay in order to enable communication between CPC and CTM. Consult the “Create an OSS Client Profile for CTM GateWay/TL1” section in the Cisco Transport Manager Operations Guide for instructions on how to set up an OSS Client Profile.



Note When creating an OSS Client Profile for CPC, ensure that **OSS IP Address** matches the IP address of the machine hosting the CPC server and **Domain Manager Mode** is enabled.

Configuring the CTM Server Configuration File

The CTM Server Configuration File must be modified in order for CTM to be accessible from CPC. To modify the file, perform the following procedure:

Step 1 Log in to the CTM server as the administrative user.

Step 2 Open the configuration file in a text editor.

```
vi /opt/CiscoTransportManagerServer/CTMServer.cfg
```

Step 3 Ensure the following values are specified.

```
gatewayTL1 = active
module-error-log-on =
SW, GWTL1, IPTL1, IPCLNP, MAIN, OSS, JMOCO, POLLER, PM, FM, SNMP, PARSER, DBSERV, CONFIG,
TTUNNEL, STUNNEL
db-host = <CTM db server IP address>
db-location = <CTM db server IP address>:<port>:CTM<version>
```



Note Each configuration variable and value must be on the same line in the configuration file.

Step 4 Save and exit the file

```
:wq!
```

Creating a Network Object

One network object must be created for each network managed by CTM. The following steps explain how to create a network object.

Step 1 Click **networks > Cisco Transport Manager Equipment Module > Network**.

Step 2 In the Lister view, click the **Create** button on the Action Bar. An Object View will be opened.

Step 3 Specify attribute values. Refer to [Table A-3](#) in Appendix A for specific attribute information. Ensure correct values for the following attributes are supplied:

- **CTM Login Account**—Must be identical to the **OSS Profile Name** value specified in the OSS Client Profile for CPC in CTM
- **CTM Login Password**—Must be identical to the **Password** value specified in the OSS Client Profile for CPC in CTM

Step 4 Click the **save** or **apply now** button to save or apply the network object.

Initial System Upload

In order to provision services, the Cisco Provisioning Center database must have detailed knowledge of the managed networks. Using a procedure called upload, objects are created within the Cisco Provisioning Center database that represent nodes within the managed network.

**Note**

The term upload does not refer to the creation of physical links that are required between optical nodes. For information on creating links, refer to the *Optical Service Application Solutions Guide*.

The Cisco Transport Manager Equipment Module supports the following types of upload:

- Given a network object, discover nodes managed by CTM.
- Given a network object, upload fabric elements (for example, nodes, cards and physical ports)
- Given a node or network object and fabric elements, upload service elements (objects used to create services, for example, OC cross connects)
- Given a node or network object, upload the fabric and service elements

The upload function takes precedence over any Transactions that are running at the time of upload. If the upload function makes a change back to the fabric that affects a running Transaction (such as deleting a logical port that the threader has decided to use) then this Transaction fails and must be restarted.

A network object must be created in order to perform an upload.

The Cisco Transport Manager Equipment Module performs an upload by initiating a telnet session and issuing TL1 commands to obtain data from the ONS 15454 via the CTM GateWay.

**Note**

Performing a swap of the XC card to an XCVT card or vice-versa after an initial upload will cause any subsequent uploads to fail. The error code “130006 Sonet port rschanneltype change to \$channeltype not supported” will appear in upload transaction logs. The workaround is to delete and recreate the node using the [“Upload Delete” section on page 4-5](#).

Node Discovery

Node discovery can be performed to discover all ONS nodes in a network. Through node discovery, Cisco Provisioning Center’s database is populated with a list of the ONS nodes in the specified network. This information corresponds to the nodes managed by the CTM server.


Performing a Node Discovery

To perform a node discovery for a network, perform the following procedure.

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- Step 1** Click **networks > Cisco Transport Manager Equipment Module > Network**.
 - Step 2** In the Lister view, click the **Get List** button on the Action Bar to retrieve a list of networks. Select a network by clicking the **Select** check box.
 - Step 3** Click the **Upload** button. Select **DISCOVER_NODES** from the pull-down menu and then click **Perform Upload**.
 - Step 4** To verify nodes have been discovered, navigate to **networks > Cisco Transport Manager Equipment Module > Node** and click the **Get List** button on the Action Bar to display a list of discovered nodes.
-

After Node Discovery

After performing node discovery, you must modify each node object to include a valid ONS 15454 account name and password. Perform the following procedure:


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- Step 1** Click **networks > Cisco Transport Manager Equipment Module > Node**
- Step 2** In the Lister view, click the **Get List** button on the Action Bar to retrieve a list of nodes. Select a node by clicking the **Select** check box and click the **Modify** button on the Action Bar.
- Step 3** Provide the following information in the fields provided:
- **User Account**—enter the user account for the ONS 15454
 - **Password for the Account**—enter the password for the user account
-  **Note** CTM requires that all nodes have the same user account and password information. Ensure that user accounts and passwords are the same for each node that you have discovered.
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- Step 4** Click the **save** or **apply now** button to save or apply the user account information.
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Network Upload

A network upload can be performed to upload all of the nodes within a specified network. Network upload will populate the Cisco Provisioning Center database with fabric information, service information, or both fabric and service information similar to a node upload. A network upload must be performed after node discovery has been successfully completed.

Performing a Network Upload

The following procedure will initialize a network upload.

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- Step 1** Click **networks > Cisco Transport Manager Equipment Module > Network**.
- Step 2** In the Lister view, click the **Get List** button on the Action Bar to retrieve a list of networks. Select a network by clicking the **Select** check box.
- Step 3** Click the **Upload** button. Select an upload type from the menu. Choose one of the following:
- **UPLOAD_FABRIC**—uploads nodes and physical ports
 - **UPLOAD_SERVICES**—uploads objects used to create optical services, for example, ring connections
 - **UPLOAD_FABRIC_AND_SERVICES**—uploads both fabric and service elements
-  **Note** Service upload must be performed after a fabric upload.
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- Step 4** Click **Perform Upload**. The upload will begin.
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Node Upload

Uploading the Fabric Elements for a Node

The following procedure will upload fabric elements for ONS nodes configured in the selected node.

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- Step 1** Click **networks > Cisco Transport Manager Equipment Module > Node**.
 - Step 2** In the Lister view, click the **Get List** button on the Action Bar to retrieve a list of nodes. Select a node by clicking the **Select** check box.
 - Step 3** Click the **Upload** button. Select **UPLOAD_FABRIC** from the pull-down menu.
 - Step 4** Click **Perform Upload**. The upload will begin.
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Uploading Service Elements for a Node

This upload is used for incremental uploads. It finds all connection objects attached to the node. Upload the Service elements of a particular node by completing the following steps.

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- Step 1** Click **networks > Cisco Transport Manager Equipment Module > Node**.
 - Step 2** In the Lister view, click the **Get List** button on the Action Bar to retrieve a list of nodes. Select a node by clicking the **Select** check box.
 - Step 3** Click the **Upload** button. Select **UPLOAD_SERVICES** from the pull-down menu.
 - Step 4** Click **Perform Upload**. The upload will begin.
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Uploading the Fabric and Service Elements for a Node

Upload the fabric and service elements for a particular node by completing the following steps:

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- Step 1** Click **networks > Cisco Transport Manager Equipment Module > Node**.
 - Step 2** In the Lister view, click the **Get List** button on the Action Bar to retrieve a list of nodes. Select a node by clicking the **Select** check box.
 - Step 3** Click the **Upload** button. Select **UPLOAD_FABRIC_AND_SERVICES** from the pull-down menu.
 - Step 4** Click **Perform Upload**. The upload will begin.
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Upload Delete

You can delete a node and node fabric and service information for a node using the **UPLOAD_DELETE** command. By deleting the upload, you will erase the node and any fabric or service information about a specific node or group of nodes that was uploaded from CTM. To delete an upload, perform the following procedure.

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- Step 1** Click **networks > Cisco Transport Manager Equipment Module > Node**.
 - Step 2** In the Lister view, click the **Get List** button on the Action Bar to retrieve a list of nodes. Select a node by clicking the **Select** check box.
 - Step 3** Click the **Upload** button. Select **UPLOAD_DELETE** from the pull-down menu.
 - Step 4** Click **Perform Upload**. The upload will be deleted. All fabric and service information for the node will be deleted from the database.
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Upload Progress

During an upload process, you can view the progress of the upload request. To view a log of the running upload process, complete the following steps:

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- Step 1** Navigate to **administration > Monitoring > Uploads**.
The Content area displays the Monitoring Upload Transactions Lister View. Initially, there are no transactions listed.
 - Step 2** (Optional) Change the refresh interval time by keying in the number of seconds to refresh the screen.

Note Monitoring must be off if you want to change the refresh interval time.
 - Step 3** Click the **Start Monitoring** button to start monitoring Upload Transactions.

Note When monitoring begins, the Start Monitoring button changes to **Stop Monitoring**.
 - Step 4** Check the box in the Select column next to the upload request you want to view.
 - Step 5** Click the **Log Info** button on the Action bar to display the log containing details of the upload and/or errors.
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Upload Error Codes

Upload error codes are a useful tool for diagnosis of upload problems. Error codes contain a numeric component and a message component.

The example upload audit log file below shows This is the name of the managed equipment upload error number 130003 in the sixth line of the file.

```
2001-08-23 22:15:48 SYCCSSSS105109I1 1005 Upload request 1005 created.
2001-08-23 22:15:48 SYCCSSSS105111I1 1005 Site Name : "PE_S1".
2001-08-23 22:15:48 SYCCSSSS105112I1 1005 Upload Type : "UPLOAD_SERVICES".
2001-08-23 22:15:49 SYCCSSSS105108I1 1005 Start process upload request 1005.
2001-08-23 22:15:49 SYCCSSSS106020I1 1005 Upload engine start processing.
2001-08-23 22:15:49 SYCCSC5up130003F1 1005 Fail to obtain configuration data: Fabric
should be loaded prior to service upload !
2001-08-23 22:15:49 SYCCSSSS105120I1 1005 Upload Failed.
```

Table 4-1 lists the possible upload errors and possible causes and solutions.

**Note**

In error codes, %s represents additional string information, a file name, or some other specific substring.

Table 4-1 Cisco Transport Manager Upload Error Messages

Error Code	Possible Cause	Possible Solution
130001 openfile \$filename failed	The output file produced by parser is corrupt.	Please contact Synthesis customer support.
130002 C5 Parser failed. Check error file \$filename for details.	The switch software version on the ONS15454 is unsupported.	Ensure firmware version on ONS15454 matches version listed in the “Switch Software” section on page 2-1.
	You have run out of disk space. There is no space left to produce upload files.	Ensure there is adequate disk space in your installation to perform an upload.
130003 Fail to obtain configuration data:%s	Missing or invalid CTM IP address in Network object.	Ensure a valid CTM IP address is provided in the Network object.
	Missing or invalid CTM port number in Network object.	Ensure a valid CTM port number is provided in the Network object.
	Missing or invalid account name for ONS15454 in Node object.	Ensure a valid account name for the ONS15454 is specified in the Node object.
	Missing or invalid account password for ONS15454 in Node object.	Ensure a valid account password is specified in the Node object.
	Attempt to perform a service upload before a fabric upload.	Upload fabric before you attempt to upload services.
130005 All C5 getters for network \$networkname have failed	Communication to CTM has timed out or CTM is down.	Ensure CTM is up and reachable.
130006 Sonet port rschanneltype change to \$channeltype not supported ¹	There has been an ONS15454 hardware configuration change since the previous upload. Upload fails after an XCVT card has been added.	Please contact Synthesis customer support.
	There has been an ONS15454 hardware configuration change since the previous upload. Upload fails after an XCVT card has been swapped for an XC card.	Please contact Synthesis customer support.
	There has been an ONS15454 hardware configuration change since the previous upload. Upload fails after an XC card has been swapped for an XCVT card.	Please contact Synthesis customer support.

1. Upload assigns a Channel Type (port granularity) to ports in cross connects depending on the cross connect card installed in the ONS15454. STS1 is used for ports in a cross connect on an XC card, and VT1.5 is used for ports in a cross connect on an XCVT card. After an initial upload, if any of the cross connect card configurations are changed, this error message will occur since this Equipment Module doesn't allow changing the channel type of a cross connect “on the fly”.

