



Designing Networks with Cisco MetroPlanner

Cisco MetroPlanner provides you with numerous tools for customizing the software, creating and analyzing networks, and creating a bill of materials (BoM). You can use Cisco MetroPlanner to perform the following tasks:

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- [2.2 Setting Cisco MetroPlanner Options, page 2-5](#)
- [2.3 Creating a Project, page 2-21](#)
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Note

To run Cisco MetroPlanner, you must install the Java 2 Platform, Standard Edition (J2SE), v 1.4.2_04 Java Runtime Environment (JRE). You can download it from the following URL:

<http://www.oracle.com/technetwork/java/javase/downloads/index.html>

2.1 Launching Cisco MetroPlanner

Use the following procedure to launch Cisco MetroPlanner Release 7.0:



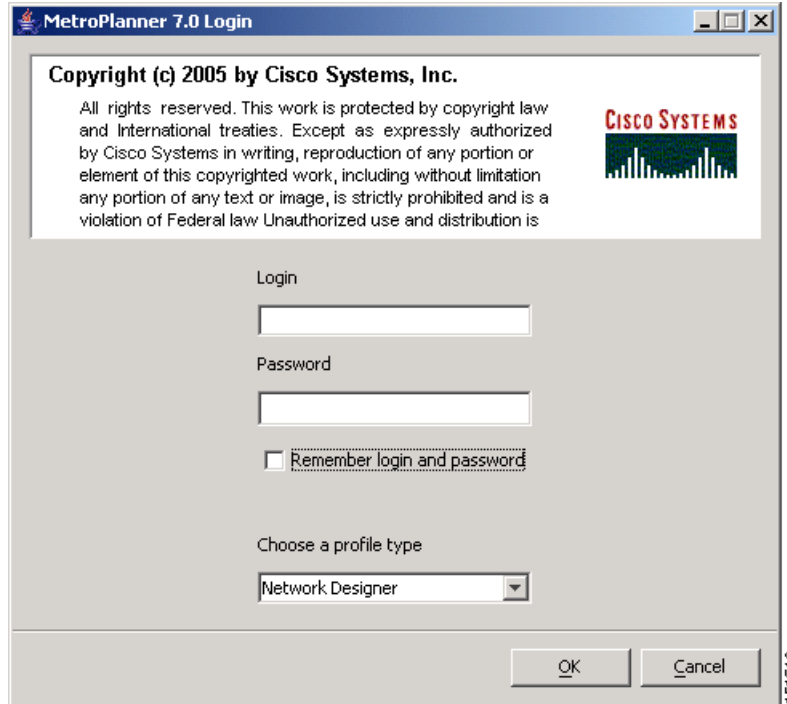
Note

Before logging in the first time to Cisco MetroPlanner R7.0, all registered users must get a new password.

Step 1

Launch Cisco MetroPlanner by double-clicking the Cisco MetroPlanner R7.0 icon. The Cisco MetroPlanner 7.0 Login dialog box appears ([Figure 2-1](#)).

Figure 2-1 Cisco MetroPlanner 7.0 Login Dialog Box



Step 2 Enter your user name in the **Login** field.

Step 3 Enter your password in the **Password** field.

Cisco MetroPlanner provides three chances for you to enter the correct password. The first two times you enter an incorrect password, Cisco MetroPlanner displays an “Incorrect Password or Login. Please try again” error message. After a third failed attempt, Cisco MetroPlanner exits with the error message: “Failed to provide correct password or login, exiting application.”

Step 4 Check **Remember login and password** if you want Cisco MetroPlanner to save your user login name and password.

Step 5 From the **Choose a profile type** drop-down list, choose one of the following profiles:

- Network Designer
- Base Network Designer

For more information on profiles and the capabilities they offer, see [Table 2-4 on page 2-20](#).

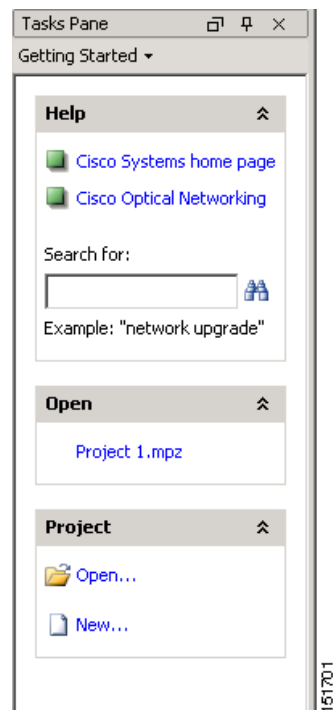
Step 6 Click **OK** to open Cisco MetroPlanner. The login profile type appears in the lower right corner of the Cisco MetroPlanner window.

2.1.1 Opening a Project

Use the following procedure to open an existing Cisco MetroPlanner project. To create a new project, see the “2.3 Creating a Project” section on page 2-21.

- Step 1** Click the project name under Open in the Tasks Pane (Figure 2-2). The project opens. If you do not see the project name listed, continue with Step 2.
- Step 2** Click **Open** under Project in the Tasks Pane or in the File menu.

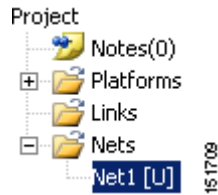
Figure 2-2 Opening a Project from the Tasks Pane



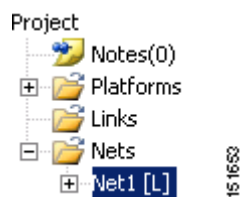
- Step 3** In the Open Project dialog box, navigate to the desired directory and choose the project. Click **Open**. The Cisco MetroPlanner project appears.

2.1.2 Loading and Unloading Networks

Each network in a project requires memory. To save memory, when Cisco MetroPlanner opens a project, all networks are in the Unloaded state. An unloaded network appears in the Project Explorer with a “U” next to the network identifier (Figure 2-3). To load an unloaded network, double-click on the network folder in the Project Explorer, or right-click the network and choose **Load** from the shortcut menu.

Figure 2-3 Unloaded Network in the Project Explorer

A loaded network appears in the Project Explorer with an “L” next to the network identifier (Figure 2-4). To unload a loaded network, right-click the network icon in the Project Explorer and choose **Unload** from the shortcut menu.

Figure 2-4 Loaded Network in the Project Explorer

2.1.3 Saving a Project

Use the following procedure to save a project:

-
- Step 1** Choose one of the following:
- To save an existing project with the same filename, choose **File > Save**. You have completed this procedure.
 - To save a new project, choose **File > Save** and go to [Step 2](#).
 - To save an existing project with a different filename, choose **File > Save As** and go to [Step 2](#).
- Step 2** In the Save Project dialog box, navigate to the desired directory and type the filename. Click **Save**. Cisco MetroPlanner saves projects as zipped files with the extension “.zip.”
-

2.1.4 Importing a Cisco MetroPlanner 2.5 Project

Use the following procedure to import a Cisco MetroPlanner 2.5 project:

-
- Step 1** From the File menu, choose **Import 2.5.x project**.
- Step 2** In the Open Project dialog box, navigate to the desired directory and choose the project. Cisco MetroPlanner 2.5 projects have a file extension of CMZ.

Step 3 Click **Open**. The Cisco MetroPlanner 2.5 project appears.

2.1.5 Closing a Project

Use the following procedure to close a Cisco MetroPlanner project:

-
- Step 1** From the File menu, choose **Close**.
- Step 2** In the Save Project dialog box, click **Yes** to save or **No** to close without saving changes.
- Step 3** If you clicked Yes and have not previously save the project, the Save Project dialog box appear. Type the name of the projec and click **Save**. The project closes.
- Step 4** To exit Cisco MetroPlanner, choose **Exit** from the File menu.
-

2.2 Setting Cisco MetroPlanner Options

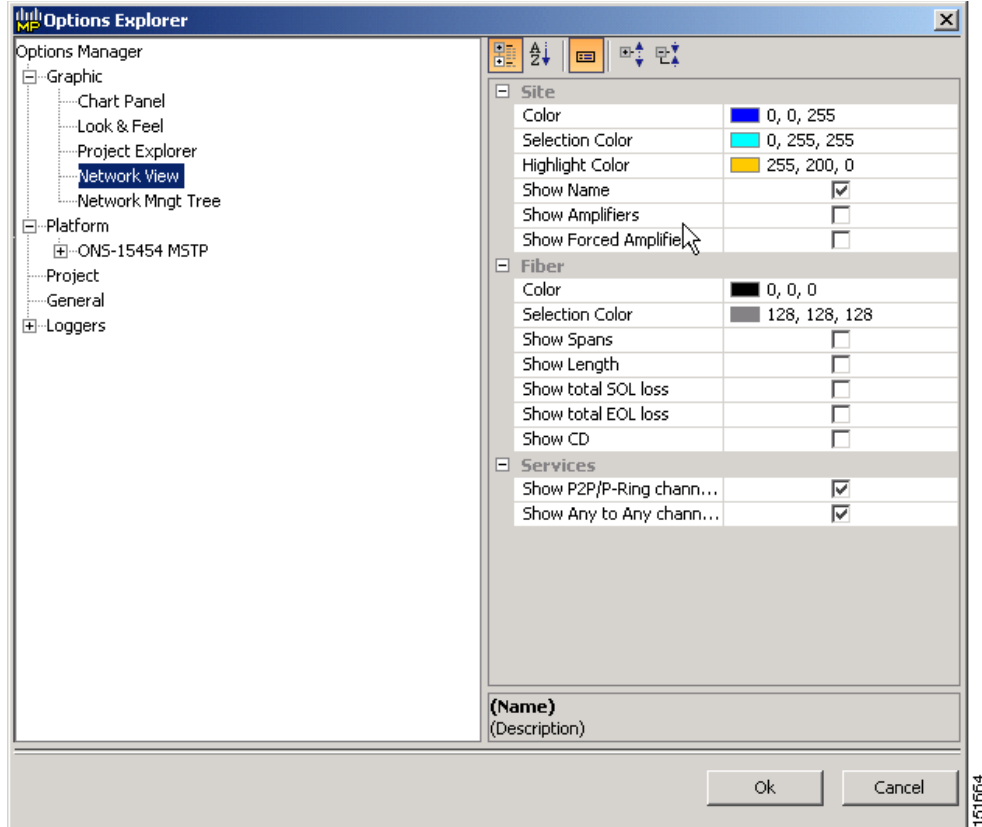
Cisco MetroPlanner provides numerous options for customizing the tool and the design.

2.2.1 Setting the Graphical Display

Use the following procedure to set the Cisco MetroPlanner graphical display:

-
- Step 1** From the Tools menu, choose **Options**.
- Step 2** In the Options Explorer dialog box ([Figure 2-5](#)), right-click the Graphic folder and choose **Expand** from the shortcut menu.

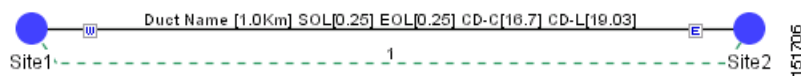
Figure 2-5 Options Explorer Dialog Box



- Step 3** To change the color scheme for Cisco MetroPlanner, click **Look & Feel** and choose the desired scheme from the drop-down list.
- Step 4** To change the appearance of the Project Explorer tree, click **Project Explorer** and complete the following as needed:
- Alarm Mode—Choose **Single** for an alarm icon to report only the condition of that item or **Cumulated** for an alarm icon to summarize the most critical alarm of the item and its children.
 - Bottom Right Icon—(Display only) Displays Locking to indicate that the lock icon appears at the bottom right of each locked item in the Project Explorer.
 - Top Right Icon—(Display only) Displays Alarm to indicate that the alarm icon appears at the top right of each alarmed item in the Project Explorer. The alarm icon will be green, yellow, orange, or red to indicate the alarm severity.
- Step 5** To change the NtVw Net# tab appearance, click **Network View** and complete the following as needed:
- In the Site area, complete the following:
 - Color, Selection Color, and Highlight Color—To change the site colors, click in the Color, Selection Color, and/or Highlight Color fields in the Site list. Click on the drop-down arrow to display a color swatch popup window. Click the desired color.
 - Show Name—Check to display the site name on the NtVw Net# tab.
 - Show Amplifiers—Check to display the amplifier icon for a site on the NtVw Net# tab.
 - Show Forced Amplifiers—Check to display the forced amplifier icon for a site on the NtVw Net# tab.

- In the Fibre area, complete the following, as needed. [Figure 2-6](#) shows an example of a duct with all of the following details shown.
 - Color and Selection Color—To change the fiber color, click in the Color and/or Selection Color fields in the Fibre list and then click on the drop-down arrow.
 - Show Spans—Check to display fiber spans on the NtVw Net# tab.
 - Show Length—Check to display fiber length on the NtVw Net# tab.
 - Show total SOL Loss—Check to display start of life (SOL) loss on the NtVw Net# tab.
 - Show total EOL Loss—Check to display end of life (EOL) loss on the NtVw Net# tab.
 - Show CD C-band—Check to display C-band chromatic dispersion (CD) on the NtVw Net# tab.
 - Show CD L-band—Check to display L-band chromatic dispersion (CD) on the NtVw Net# tab.
- To change the color of the traffic demands on the NtVw Net# tab, in the Point To Point, P-Ring, and Any To Any areas click in the Color and Selection Color fields, and then click on the drop-down arrow to display a color swatch popup window. Click the desired color.

Figure 2-6 Duct Details Shown on the NtVw Net# Tab



- Step 6** To change the Network Mgmt Tree tab appearance, complete the following as needed:
- In the Network area, click in the Color and Selection fields. Click on the drop-down arrow to display a color swatch popup window. Click on the desired color.
 - In the Link area, complete the following:
 - To change the link color, click in the Color field in the Link list and then click on the drop-down arrow. Choose the desired line width from the drop-down list.
 - To change the link appearance, click in the Stroke field in the Link list and then click on the drop-down arrow. Choose the desired line appearance from the drop-down list.
- Step 7** Click **Ok**.

2.2.2 Setting the Default Platform Values

Use the following procedure to establish the default traffic mapping, dense wavelength division multiplexing (DWDM) design, and default layout settings for a particular platform and system release. The default settings will appear during project creation.

- Step 1** From the Tools menu, choose **Options**.
- Step 2** In the Options Explorer dialog box ([Figure 2-5 on page 2-6](#)), right-click **Platform** and choose **Expand** from the shortcut menu.
- Step 3** Click the desired **System Release** folder and complete the following as needed:
- Topology—(Display only) Displays Ring as the default topology.
 - Band—Choose **C-Band** or **L-Band** as the default band.

- Scalable C/L—(System Release 7.0 only) Check to set scalable C bands and L bands as the default setting during project creation. If checked, the design will be scalable to support both C-band and L-band on the same system.
- Scalable C/50GHz—(System Release 7.0 only) Check to set scalable C-band 50 GHz as the default setting during project creation. If checked, the design will be scalable to support 50-GHz channel spacing in C-band.

Step 4 Click the **Traffic Mapping** folder and complete the following as needed:

- In the General area, choose the desired default setting from the C-Band Rules and/or L-Band Rules drop-down lists. Choose the option that will be the maximum per-channel power and channel spacing for the network design.
- In the Fixed traffic area, choose the default routing strategy from the drop-down list:
 - Auto
 - Unprotected optimum optical path—Each node pair is connected using one connection. The unprotected optimum optical path minimizes the number of required optical amplifiers, but also restricts the number of channels that can be deployed among the nodes of the traffic group (maximum of 32 channels between each node pair) in the installed network.
 - Unprotected minimum hop count—Each node pair in the traffic group is connected by one connection. The unprotected minimum hop count maximizes the number of channels (for unprotected traffic types only) that can be deployed among the nodes of the traffic group, but can require a higher number of optical amplifiers on the unprotected optimum optical path (maximum of 32 channels between each node pair) in the installed network.

Step 5 Click the **DWDM Design Rules** folder and complete the following as needed:

- No In-line Bulk Attenuator Design—Check to design the network without using any inline bulk attenuators. In case the network cannot be designed without using external in-line attenuators, Cisco MetroPlanner displays the following error message: “Unfeasible Network design. Site X should require usage of in-line attenuator. Leave unchecked to allow inline bulk attenuators.”
- No TXT/Line-Card Bulk Attenuator Design—Check to design the network without using any external receive (Rx) bulk attenuators on transponder or line cards. If any of the clients require Rx bulk attenuators, then the related channel is shown with the working condition (flagged red, orange, or yellow). No Rx bulk attenuator will be shown in any of the reports (such as Optical Channel Results, Internal Connections, or BoM). Leave unchecked to allow bulk attenuators.
- Prevent Use of E-LEAF Dispersion—Check to prevent Cisco MetroPlanner from using E-LEAF dispersion compensation units (DCUs) on E-LEAF spans for the overall network. Leave unchecked if you want the algorithm to automatically optimize the usage of the E-LEAF DCUs.

Step 6 To define the shelf configuration parameters, click the **Layout** folder and complete the following:

- Place AIC—Check to instruct Cisco MetroPlanner to put the AIC card in Slot 9 of the first shelf in each site.
- Place FiberStorage—Check to instruct Cisco MetroPlanner to put the fiber storage within the rack below the optical shelf.

Step 7 Click **Ok**.

2.2.3 Setting the Default Project Values

Use the following procedure to set the default project settings and repair time. These defaults will appear during project creation.

-
- Step 1** From the Tools menu, choose **Options**.
- Step 2** In the Options Explorer dialog box ([Figure 2-5 on page 2-6](#)), click **Project** and complete the following to set the defaults that appear in the Project Creation wizard:
- Customer—Enter the default customer name (128 character maximum).
 - Created by—Enter the default user name (128 character maximum).
 - Units—Choose the desired default span length unit of measure from the drop-down list, either **Km** or **Miles**.
 - Price List—Choose the desired default price list.
 - Layout—Choose either **ANSI** (American National Standards Institute) or **ETSI** (European Telecommunications Standards Institute) from the drop-down list.
- Step 3** Click **General**.
- Step 4** In the MTTR (hours) field, enter the mean time to repair (MTTR) for all sites in the network. This will apply to every site in the network. If you change the MTTR value after creating sites, the new value will only apply to sites you create after the change.
- Step 5** Click **Ok**.
-

2.2.4 Setting the Fiber Type Default Values

Use the following procedure to set the fiber type default values. The changes do not apply to the current project. After setting the values for the fiber types, you must export the database changes to a file and then import the file. For more information, see the [“2.2.7 Exporting a File” section on page 2-16](#) and the [“2.2.8 Importing a File” section on page 2-17](#).

-
- Step 1** From the Tools menu, choose **DB Parts Mgmt**.



Note You cannot open the DB Parts Manager if a project is open.

- Step 2** In the PartsTreePanel, right-click **PlatformsParts** and choose **Expand**.
- Step 3** Click **parts DB** for the desired release to view the fiber options for that release. The Fibres tab in the PartsTreePanel appears. Each item in the database contains the following information:
- Release—(Display only) Displays the system release when the fiber type was introduced.
 - Group—(Display only) Displays the group identifier for contained items.
 - Category—(Display only) Displays Fibre.
 - Label—(Display only) Displays the fiber types: G652-SMF, ELEAF, and TrueWave.
 - Name—(Display only) Displays the actual part name.

- Step 4** To edit the fiber parameters, right-click on the desired row and choose **Edit** from the shortcut menu. The default values appear in a new window.
- Step 5** To modify the default values, complete the following as needed:
- name—Enter the new part name, such as Dispersion Shifted.
 - label—Enter the new fiber label, such as DS.
 - customer group—(Display only) Displays Cisco.
 - category—(Display only) Displays Fibre.
 - release—(Display only) Displays the selected release.
 - type—Enter a new label to describe the fiber type.
 - loss factor—Type the value of the SOL fiber loss per kilometer that will be used to calculate the loss of each span in the network.
 - CD factor CBand—Type the fiber chromatic dispersion default factor for the C band.
 - CD factor LBand—Type the fiber chromatic dispersion default factor for the L band.
 - pmd factor—Type the default polarization mode dispersion factor.
- Step 6** Click **Ok** to save the changes and close the edit dialog box.
- Step 7** Click **Ok** to close the PartsTreePanel dialog box.
-

2.2.5 Defining Third-Party DWDM Interfaces

Cisco MetroPlanner allows you to define a third-party DWDM interface to be used in project creation. Once you define third-party DWDM interfaces, you can choose them when creating traffic demands.



Note

If you create a network design with a third-party interface and need to share the design with other users, you must provide not only the saved network MPZ file but also the exported database file containing the third-party interface definition. To view this project, the other user first must import the database with the third-party interface values.

Use the following procedure to define a third-party DWDM interface:

- Step 1** Click **Tools > DB Parts Mgmt.** The DB Parts Manager dialog box appears.

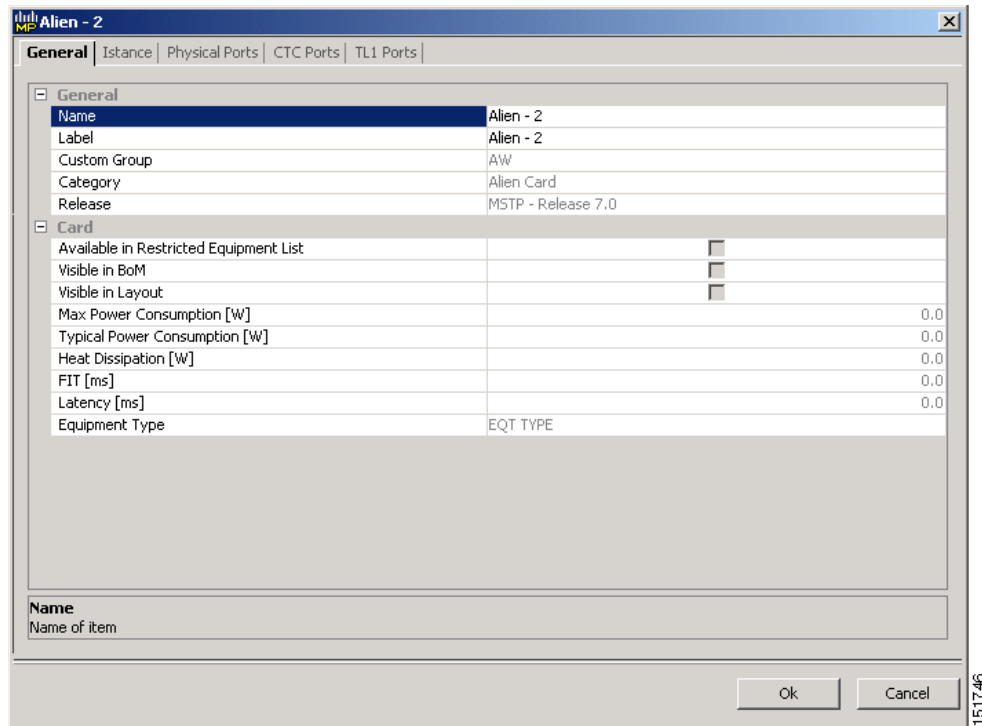


Note You cannot open the DB Parts Manager if a project is open.

- Step 2** Right-click **Platform Parts** and choose **Expand** from the shortcut menu.
- Step 3** Right-click **Group** and choose **New Group** from the shortcut menu. The new group appears under Group and in each system release under parts DB.
- Step 4** In the Group Editor dialog box, complete the following:
- Name of group—Enter the name of the new database.
 - Version of group—Displays 1.0 to indicate that this is the first version of the group.
 - Owner—Enter the group owner name.

- Note—(Optional) Enter a description of the group.
- Step 5** In the parts DB for the desired system release, click the group that you created.
- Step 6** In the Parts tab of the DB Parts Manager dialog box, right-click and choose **Client** and then **Alien** from the shortcut menu. A new row appears on the Parts tab for the client hardware.
- Step 7** Double-click the row to open the Alien dialog box (Figure 2-7).

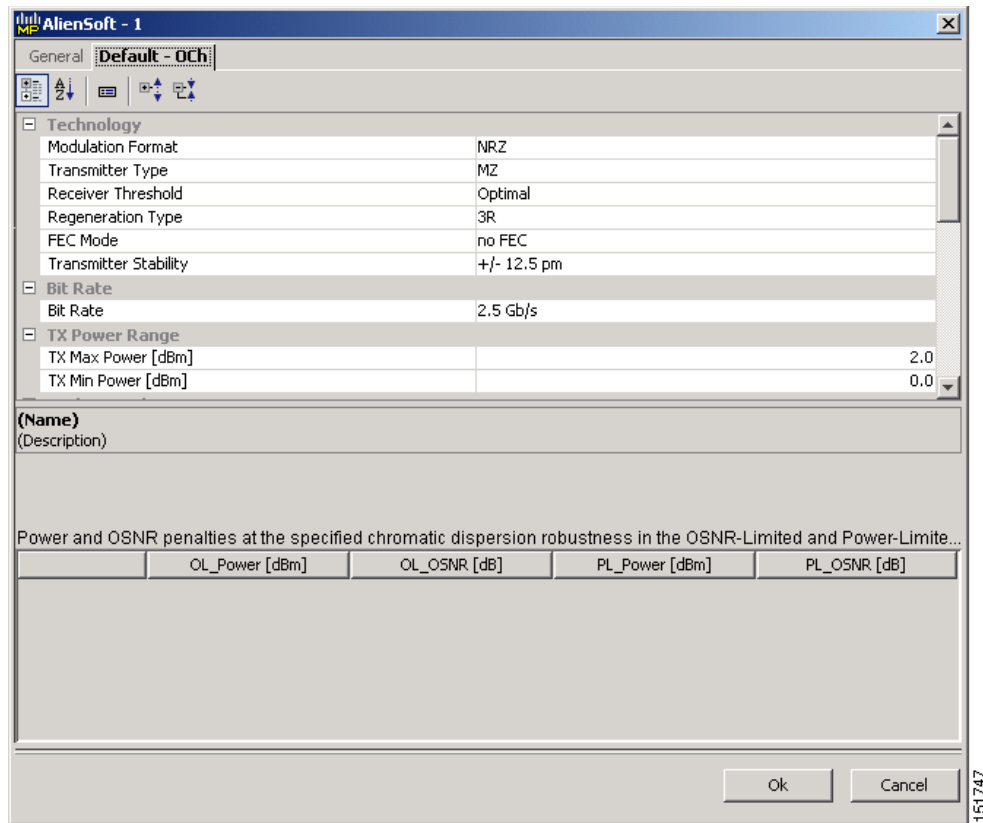
Figure 2-7 Alien Card Dialog Box



- Step 8** In the General tab of the Alien dialog box, complete the following:
- Name—Type the name of the card.
 - Visible in BoM—Check if you want to include this third-party interface in the BoM.
- Step 9** Click the **Instance** tab and complete the following:
- Ansi PID—Enter the product identifier of the ANSI system, as needed. If you select BoM visible for this third-party interface with ANSI PID completed, the third-party interface is included in the BoM with the related product identifier.
 - Etsi PID—Enter the product identifier of the ETSI system, as needed. If you select BoM visible for this third-party interface with ETSI PID completed, the third-party interface is included in the BoM with the related product identifier.
 - TAG—(Display only) For internal use.
 - SYS. NAME ANSI—Not applicable for third-party interfaces.
 - SYS. NAME ETSI—Not applicable for third-party interfaces.
 - WL START—Choose the wavelength starting range that the third-party interface supports from the drop-down menu.

- WL END—Choose the wavelength ending range that the third-party interface supports from the drop-down menu.
- Step 10** Click the **Physical Ports** tab and in the Label column, type a label for each port.
The CTC Ports and TL1 Ports tabs are not applicable for third-party interfaces.
- Step 11** Click **Ok**.
- Step 12** In the Parts tab of the DB Parts Manager dialog box, right-click and choose **Software** and then **Alien** from the shortcut menu. A new row appears on the Parts tab for the client software.
- Step 13** Double-click the row to open the AlienSoft dialog box.
- Step 14** In the General tab, complete the following:
- Name—Type the name in the Name field.
 - Related Item—Choose the client card that you created in Steps 7 to 11.
- Step 15** Click the **Default - OCh** tab (Figure 2-8).

Figure 2-8 Alien Software Dialog Box



- Step 16** Complete the following (see Tables 2-1 through 2-3 for supported value combinations):
- In the Rules area, choose the C- or L-band design rule from the **Design Rule** drop-down list.
 - In the Technology Area, complete the following:
 - Modulation Format—Choose **NRZ** (Non Return to Zero) or **Duo Binary**.
 - Transmitter Type—Choose **MZ** (Mach Zehnder), **DML** (Direct Modulated Laser) or **EML** (Electro-absorption Modulated Laser).

- Receiver Threshold—Choose **Optimal** (minimum BER) or **Average** (average received power).
- Regeneration Type—Choose **3R** or **2R** regeneration mode.
- FEC Mode—Choose **FEC** (Forward Error Correction), **no FEC**, or **E-FEC** (Enhanced FEC).
- Transmitter Stability—Choose the maximum wavelength error allowed (pm). The values are 12.5, 25, 50, or 100 pm.
- Bit Rate—Choose the desired bit rate from the drop-down list.
- In the TX Power Range area, complete the following:
 - TX Max Power—Enter the maximum power output level (dBm).
 - TX Min Power—Enter the minimum power output level (dBm).
- In the Back to Back Receiver Sensitivity area, complete the following as needed to define the working interface area for Back to Back. Back to Back is a configuration where the receiver is placed in front of the transmitter and no other equipment exists between the two. Back to Back is used to measure characteristics of the TX and RX pair. [Figure 2-9](#) shows the interface operative area.
 - Overload Power [dBm]—Enter the overload power level.
 - OL_Power [dBm]—Enter the minimum power level in the Optical Signal-to-Noise Ratio (OSNR)-limited range.
 - OL_OSNR [dB] on 0.5 nm RBW—Enter the minimum OSNR level in the OSNR-limited range (measured in .5 increments).
 - PL_Power [dBm]—Enter the minimum power level in the power-limited range.
 - PL_OSNR [dB] on 0.5 nm RBW—Enter the minimum power level in the OSNL-limited range (measured in .5 increments).
- In the Chromatic Dispersion area, complete the following as needed:
 - Customize CD Robustness—Check to enable the CD Robustness field, as needed. Chromatic dispersion (CD) refers to the broadening of a light pulse after traveling a distance in the fiber.
 - CD Robustness [ps/(nm*km)]—If Customize CD Robustness is checked, choose the maximum positive dispersion, Dmax_pos [ps/(nm*km)], tolerable by the interface: 0dB, 1dB, 1.5dB, 2dB, or 3dB.
- Customize Penalties—Check to enable the Gaussian Cross-Talk Penalties, Single-Interfering Cross-Talk Penalties, and Scale Q factors fields as needed.
- If Customize Penalties is checked, enter the values to determine the Gaussian Cross-Talk Penalties in the A_GXt and B_GXt fields, as needed. Gaussian cross talk refers to random jitter that interferes with a signal. The A_GXt and B_GXt values are the coefficients for the exponential curves that estimate P-penalty(PL), P-penalty(OL), OSNR-penalty(PL), and OSNR-penalty(OL) for Gaussian cross-talk levels in the OL and PL regions of the interface model with dispersion margins added (see [Figure 2-9](#)). The formula is $\text{Penalty}(\text{GXt}) = A_GXt * \exp(B_GXt * \text{GXt})$.
- If Customize Penalties is checked, enter the values to determine the Single-Interfering Cross-Talk Penalties in the A_SIXt and B_SIXt fields, as needed. Single-interfering cross talk refers to interference caused by a single signal. The A_SIXt and B_SIXt values are the coefficients for the exponential curves that estimate P-penalty(PL), P-penalty(OL), OSNR-penalty(PL), and OSNR-penalty(OL) for single-interfering cross-talk in the OL and PL regions of the interface model with dispersion margins added (see [Figure 2-9](#)). The formula is $\text{Penalty}(\text{IXt}) = A_SIXt * \exp(B_SIXt * \text{IXt})$.
- If Customize Penalties is checked, enter Scale Q values in the F-P(PL), F-P(OL), F-OSNR(PL), and F-OSNR(OL) fields, as needed. The scale factors measure how efficient a card is in recovering the signal distortion. The slope of the Q-factor curve versus OSNR or RX power determines how a BER

increase could be recovered with an increase of OSNR, power, or both (depending in which OSNR/power working point the card is). In general, the scale factors are two values (one in OSNR and one in power) for each working point OL and PL of the interface model (see Figure 2-9). The the F-P(PL), F-P(OL), F-OSNR(PL), and F-OSNR(OL) values translate a Q-penalty (that is, a BER increase) into power and OSNR penalties. The formulas follow:

- P-penalty(PL) = Q-penalty * F-P(PL)
- P-penalty(OL) = Q-penalty * F-P(OL)
- OSNR-penalty(PL) = Q-penalty * F-OSNR(PL)
- OSNR-penalty(OL) = Q-penalty * F-OSNR(OL)

F-P(PL) and F-OSNR(PL) are evaluated in the PL working region, while F-P(OL) and F-OSNR(OL) are evaluated in the OL working region of the curve with the dispersion margins added.

Figure 2-9 Interface Operative Area

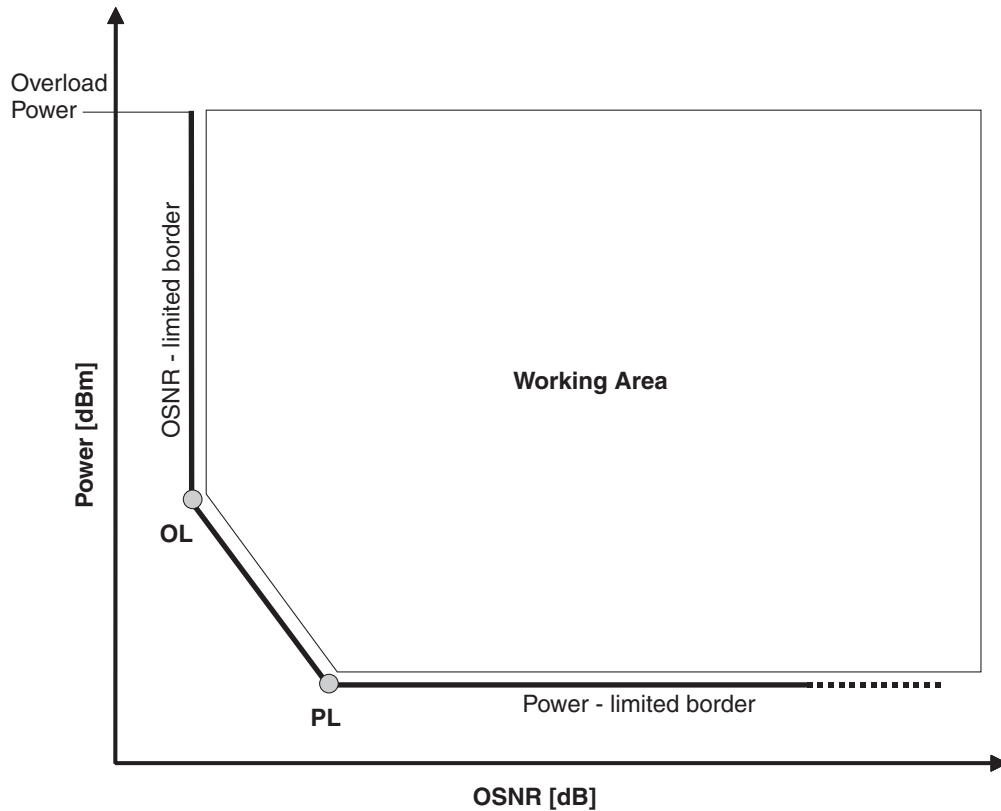


Table 2-1 lists the supported combinations for 40-Gbs third party interfaces.

Table 2-1 Supported Combination for 40-Gbs Third-Party Interface

Modulation Format	TX Type	RX Threshold	FEC	TX Stability [pm]	Chromatic Dispersion Penalties [dBm]			
					P-penalty (OL)	OSNR-penalty(OL)	P-penalty(PL)	OSNR-penalty(PL)
Duo Binary	MZ	Optimal	E-FEC	± 12	0	1	0	1

Table 2-2 lists the supported combinations for 10-Gbs third party interfaces.

Table 2-2 Supported Combinations for 10-Gbs Third-Party Interface

Modulation Format	TX Type	RX Threshold	FEC	TX Stability [pm]	Chromatic Dispersion Penalties [dBm]			
					P-penalty (OL)	OSNR-penalty(OL)	P-penalty(PL)	OSNR-penalty(PL)
NRZ	MZ	Optimal	E-FEC	± 25	0	2	1	0
NRZ	MZ	Optimal	FEC	± 25	0	1.5	1	0
NRZ	MZ	Average	no FEC	± 25	2	0	2	0
NRZ	EML	Average	no FEC	± 100	0	3	3	0

Table 2-3 lists the supported combinations for 2.5-Gbs third party interfaces.

Table 2-3 Supported Combinations for 2.5-Gbs Third-Party Interface

Modulation Format	TX Type	RX Threshold	FEC	TX Stability [pm]	Chromatic Dispersion Penalties [dBm]			
					P-penalty (OL)	OSNR-penalty(OL)	P-penalty(PL)	OSNR-penalty(PL)
NRZ	DML	Average	FEC	± 25	0	2	2	0
NRZ	DML	Average	no FEC	± 25	0	2	2	0
NRZ	DML	Average	no FEC	± 25	3	0	3	0
NRZ	DML	Average	no FEC	± 25	3	3	3	3
NRZ	EML	Average	no FEC	± 25	0	2	2	0
NRZ	DML	Average	no FEC	± 100	0	3	3	0

Step 17 Click **Ok**.

2.2.6 Updating the Restricted Equipment List

Use the following procedure to modify the restricted equipment list, which contains a list of parts that Cisco MetroPlanner cannot use when designing the network. Restricted equipment list changes apply when you create a new project, however you can also update a current project with the changes.

- Step 1** From the Tools menu, choose **Options**.
- Step 2** In the Options Explorer dialog box, right-click **Platform** and choose **Expand** from the shortcut menu.
- Step 3** Click **Restricted Eqpt List** for the desired system release. The list of cards appears in the right pane of the dialog box.
- Step 4** To restrict a card, check the check box in the Restricted column for that card. To change the setting back to unrestricted, uncheck the check box.
- Step 5** Click **Ok** to close the dialog box. The restricted list will be used for any new projects.

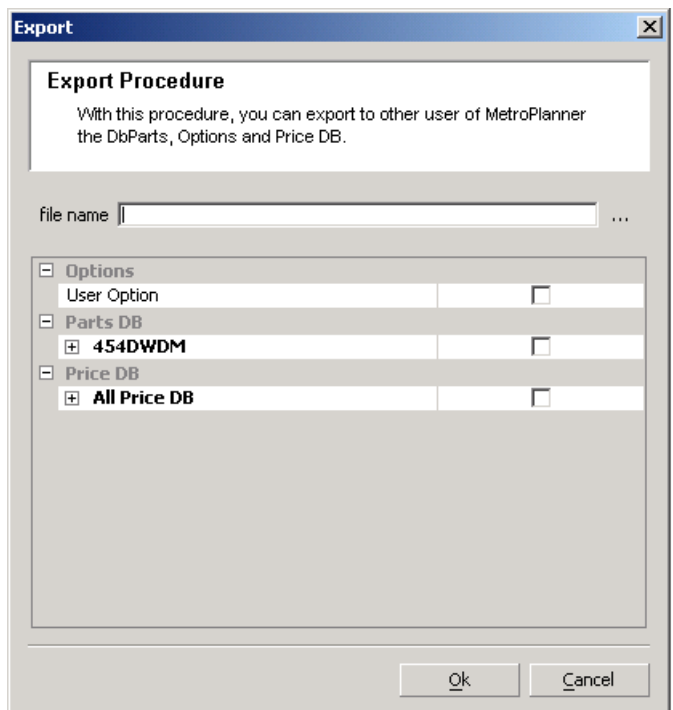
- Step 6** To apply the changes to an existing project, complete the following:
- If the project is not currently open, open the project where you want to update the restricted equipment list.
 - Right-click the folder for the network that you want to update and choose **Expand** from the shortcut menu.
 - Right-click the desired platform and release folder under RestrictedEqptListFolder in the Project Explorer and choose **Edit List** from the shortcut menu. The Restricted Eqpt list for MSTP 454 DWDM[release 7.0] dialog box appears.
 - Click **Update**.
 - Click **Ok** to close the dialog box.

2.2.7 Exporting a File

Use the following procedure to export user options, price lists, maintenance contracts, and the parts database files. The Export command creates a ZIP file that includes all of the created files.

- Step 1** From the Tools menu, choose **Export**. The Export dialog box appears (Figure 2-10).

Figure 2-10 Export Dialog Box



- Step 2** In the Export dialog box, enter a file path and name in the file name field. To export to an existing file, click the ... button and navigate to the desired directory and file. Click **Select** to choose the file.

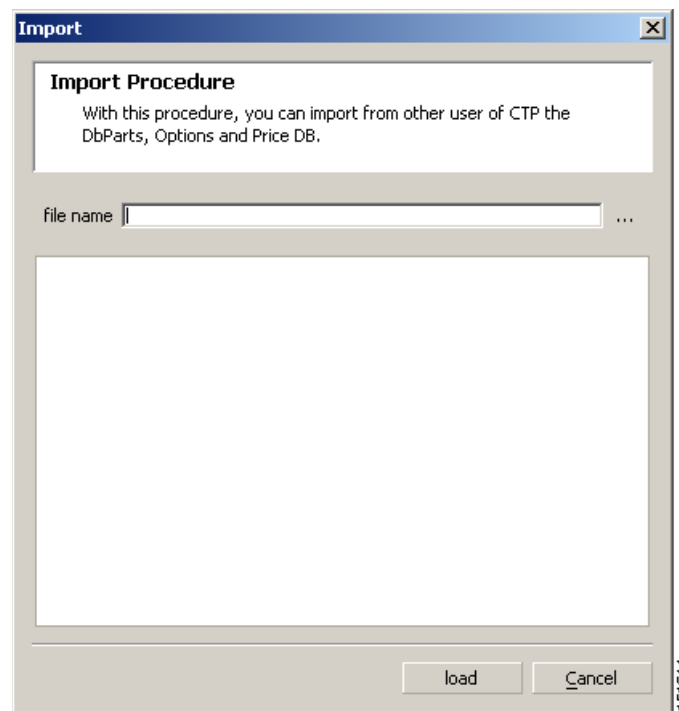
- Step 3** To select the items to export, complete the following as needed:
- User Option—Check to export the user options set using the Tools > Options command.
 - PartsDB—Check the desired platforms.
 - PriceDB—Check **All Price DB** to export all price lists, or expand All Price DB and check the individual price lists that you want to export.
- Step 4** Click **Ok**.
-

2.2.8 Importing a File

Use the following procedure to import user options, price lists, maintenance contracts, and the parts database files. You can import a ZIP file of multiple exported items or an individual TXT file.

- Step 1** From the Tools menu, choose **Import**. The Import dialog box appears (Figure 2-11).

Figure 2-11 Import Dialog Box



- Step 2** In the Import dialog box, click the ... button and navigate to the desired directory and file. Click **Select** to choose the file to import.
- Step 3** Click **load**.
- Step 4** If you selected a single TXT file, skip this step and go to [Step 5](#). If you selected a ZIP file with multiple exported options, complete the following as needed:
- User Option—Leave checked to import a file with the user options that were set with the Tools > Options command.

- PartsDB—Leave checked to import the parts database for the desired platform.
- PriceDB—Leave **All Price DB** checked to import all price lists, or uncheck and check the desired individual price lists.

Step 5 Click **Ok**.

Step 6 In the confirmation dialog box, click **Ok**.

2.2.9 Resetting the Default Layout

Your graphical layout settings are saved when you exit Cisco MetroPlanner. The next time that you launch Cisco MetroPlanner, the layout appears as it did upon exiting. The default graphical layout includes items such as whether the panes are visible and/or docked, etc.

To return to the Cisco MetroPlanner default layout, choose **Default Layout** from the View menu. To restore the user modified layout, choose **My Default View** from the View menu.

2.2.10 Adding Plug-ins

Use the following procedure to add plug-ins to Cisco MetroPlanner. Plug-ins are released separately from Cisco MetroPlanner. Using plug-ins, you can customize the released version of Cisco MetroPlanner.

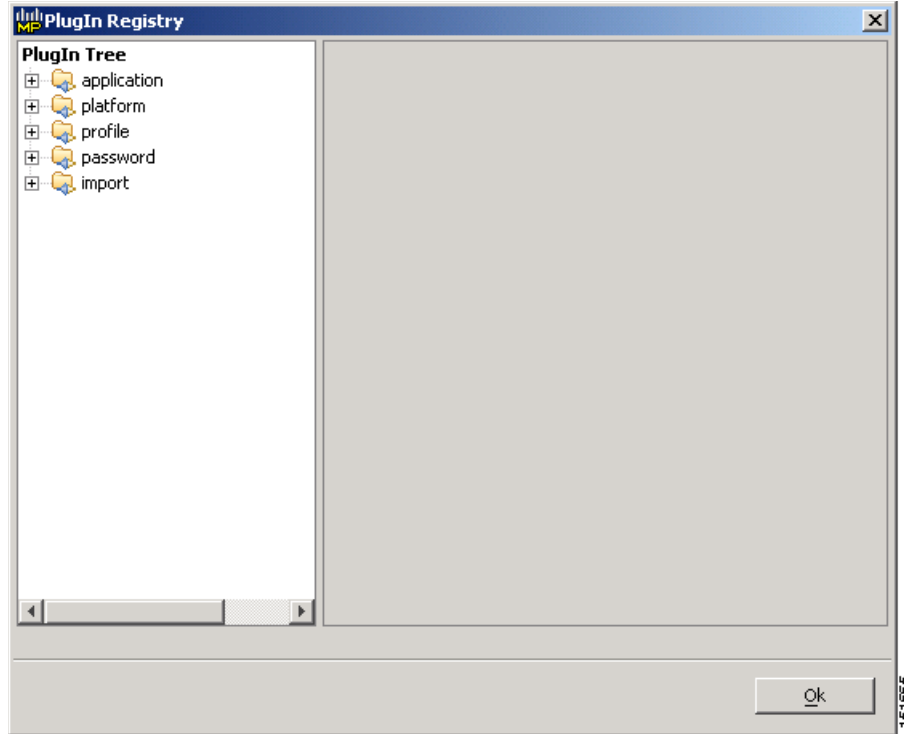
Step 1 Copy the plug-in file into the Documents and Settings*username*\Desktop\MP7\plugins folder.

Step 2 From the File menu, choose **Exit**, then click **Yes** or **No** to save the existing project.

Step 3 Launch Cisco MetroPlanner. For more information, see the [“2.1 Launching Cisco MetroPlanner” section on page 2-1](#).

Step 4 Choose **Tools > Plug-In > View Plugin registry**. The PlugIn Registry dialog box appears ([Figure 2-12](#)).

Figure 2-12 PlugIn Registry Dialog Box



- Step 5** In the PlugIn Tree, right-click the new plug-in folder and choose **Expand** from the shortcut menu.
- Step 6** Right-click the new plug-in and choose **Run at start** from the shortcut menu.
- Step 7** Click **Ok**.
- Step 8** In the confirmation dialog box, click **Ok**.
- Step 9** Close Cisco MetroPlanner and restart. The new plug-in appears as a command under the File menu.

2.2.11 Managing Plug-ins

Use the following procedure to view and manage plug-ins. For information about adding plug-ins, see [“2.2.10 Adding Plug-ins”](#) section on page 2-18.

- Step 1** Choose **Tools > Plug-In > View Plugin registry**. The PlugIn Registry dialog box appears ([Figure 2-12 on page 2-19](#)).
- Step 2** In the PlugIn Tree, right-click the plug-in folder and choose **Expand** from the shortcut menu.
- Step 3** Click a plug-in to view information about it. The right pane of the PlugIn Registry dialog box displays the plug-in information.
- The General area of the PlugIn Registry dialog box identifies the following information:
 - Name—(Display only) Displays the name of the plug-in.
 - Path—(Display only) Displays the location of the plug-in.

- Version—(Display only) Displays the version of the plug-in.
 - Provider—Displays the name of the supplier of the plug-in.
 - Text—(Display only) Displays a brief description of the plug-in.
 - Exclusion—(Display only) Displays the exclusion label. The exclusion attribute is a tag that defines an exclusion rule for a plugin. No more than one plugin with a given exclusion tag can be run at the same time.
- The State area of the PlugIn Registry dialog box identifies the plug-in current state and restrictions:
 - Current State—(Display only) Identifies the state of the plug-in.
 - Can be stopped—(Display only) If True, you can disable the plug-in during the current session of Cisco MetroPlanner. The plug-in will disappear from the File menu. To restart a plug-in that has been stopped, you must exit and relaunch Cisco MetroPlanner. If False, you cannot stop the plug-in during an active Cisco MetroPlanner session.
 - Can be suspend—(Display only) If True, you can disable the plug-in during the current session of Cisco MetroPlanner. The plug-in will disappear from the File menu. To restart a plug-in that has been suspended, you can choose Resume in the PlugIn Registry dialog box. It is not necessary to exit and relaunch Cisco MetroPlanner. If False, you cannot suspend and resume this plug-in during an active Cisco MetroPlanner session.
 - The Run Information area of the PlugIn Registry dialog box displays the Can be deactivated state. If True, you can deactivate a plug-in but must exit and relaunch Cisco MetroPlanner for the deactivation to take effect. When you relaunch Cisco MetroPlanner, the plug-in will not appear in the File menu. If False, you cannot deactivate this plug-in.
- Step 4** To disable or suspend a plug-in, right-click the plug-in and choose one of the following from the shortcut menu:
- Do not run at start—Choose to disable the plug-in the next time Cisco MetroPlanner is launched.
 - Suspend/Resume—Choose **Suspend** if you want to disable the plug-in immediately without restarting Cisco MetroPlanner. Choose **Resume** to enable a suspended plug-in.
- Step 5** Click **Ok**.
- Step 6** In the confirmation dialog box, click **Ok**.
- Step 7** If you chose Do not run at start, exit and relaunch Cisco MetroPlanner for the plug-in to be disabled.

2.2.12 Adding User Profiles

A user profile is a set of privileges used for running Cisco MetroPlanner. Each profile offers different capabilities. Cisco MetroPlanner is packaged with the Network Designer and Base Network Designer profiles, but you can add other user profile types.

[Table 2-4](#) lists the privileges that differ between the Network Designer and the Base Network Designer user profiles. For all other commands and options, the two user profiles have the same privileges.

Table 2-4 Different Privileges for Network Designer and Base Network Designer

Cisco MetroPlanner Command/Option	Network Designer	Base Network Designer
Tools > Parts Database > New group	Yes	No
Tools > View Plug-in registry	Yes	Yes

Table 2-4 Different Privileges for Network Designer and Base Network Designer (continued)

Cisco MetroPlanner Command/Option	Network Designer	Base Network Designer
Tools > Options > Platform Options > Restricted Equipment list	Yes	Read only
Tools > Price List Mgmt > Master Price Database	Yes	Read only
Tools > Export	Yes	Yes
Tools > Import	Yes	Yes

Use the following procedure to add a user profile to Cisco MetroPlanner:

-
- Step 1** Copy the profile JAR file into the Documents and Settings*username*\Desktop\MP7\profiles folder.
- Step 2** Launch Cisco MetroPlanner. For more information, see the [“2.1 Launching Cisco MetroPlanner” section on page 2-1](#). The new profile should appear in the **Choose a profile type** drop-down list.
-

2.2.13 Running a Script

Use the following procedure to run a script. A script is a sequence of commands in a BSH file format that is used to provide additional Cisco MetroPlanner capabilities. Cisco provides scripts to help you customize your Cisco MetroPlanner software.

-
- Step 1** From the Script menu, choose **Run Script**.
- Step 2** In the Choose the script to run dialog box, click the desired script and click **Open**. The script runs.
-

2.3 Creating a Project

A project consists of a single network or multiple networks that you analyze and compare. In a project, you can have multiple copies of a single network with the same customer input data, but use different options in each to investigate multiple solutions.

Use the following procedure to create a single network in a project. A new network is in the Design state. For more information about the different network states, see the [“2.7 Managing the Network Design” section on page 2-77](#).

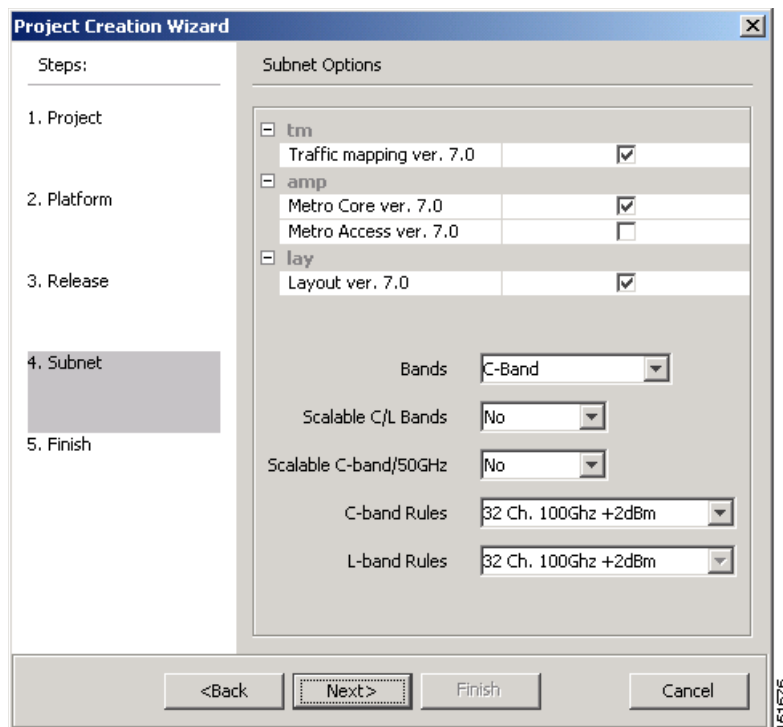
-
- Step 1** From the File menu, choose **New**. The Project Creation Wizard appears ([Figure 2-13](#)).

Figure 2-13 Project Creation Wizard

- Step 2** On the Project page, complete the following:
- Created By—Displays the user login name. You can edit this field (128 character maximum).
 - Customer Name—Type the name of the customer (128 character maximum) requiring this network design.
 - Network Platform Layout—Choose **ANSI** (the North American standard) or **ETSI** (the international standard) from the drop-down list to indicate the platform type. ANSI networks will not allow you to define SDH (ETSI) service demands. ETSI networks will not allow you to define SONET (ANSI) service demands.
 - Span Measurement Units—Choose **Km** (kilometers) or **Miles** from the drop-down list to set the unit of measure used for span length.
 - Price List—Choose the price list from the drop-down list.
- Step 3** Click **Next**.
- Step 4** On the Platform page, check the desired platform and click **Next**.
- Step 5** On the Release page, check the desired software release for the network design and click **Next**. The default is the latest release. This attribute defines the list of hardware parts that cannot be used in the design because they are not supported by a particular release.
- Step 6** On the Subnet page, complete the following (Figure 2-14):
- Traffic mapping—Check to select the ONS 15454 Release 7.0 version of the interface and wavelength routing optimization algorithm to be used in the network design. Release 7.0 is backward compatible and can manage Software Release 4.7, 5.0, and 7.0.
 - Metro Core—Check to select the ONS 15454 Release 7.0 version of the algorithm used to optimize the amplifier and DCU placement within the subnetwork. Release 7.0 is backward compatible and can manage Software Release 4.7, 5.0, and 7.0.

- **Layout**—Check to define the ONS 15454 Release 7.0 version of the algorithm used to generate the layout of each site within the subnetwork. Release 7.0 is backward compatible and can manage Software Release 4.7, 5.0, and 7.0.
- **Bands**—Choose **C-Band** or **L-Band**. L-Band is available only for Release 7.0 networks.
- **Scalable C/L Bands**—Choose **Yes** or **No** to specify if the design will be scalable to support both C-band and L-band on the same system. This option is available only for Release 7.0 networks.
- **Scalable C-band/50GHz**—Choose **Yes** or **No** to specify if the design will be scalable to support 50-GHz channel spacing in C-band. This option is available only for Release 7.0 networks.
- **C-band Rules**—Choose the option that will be the maximum per-channel power and channel spacing for the network design. This option is available when the selected band is C-band.
- **L-band Rules**—Choose the option that will be the maximum per-channel power and channel spacing for the network design. This option is available when the selected band is L-band or when Scalable C/L Bands is set to Yes.

Figure 2-14 Project Creation Wizard Subnet Page



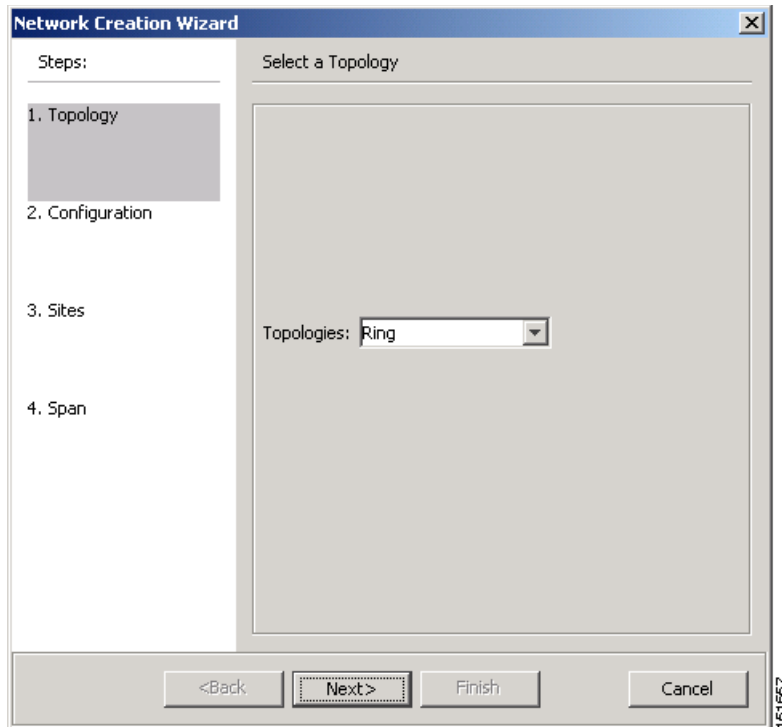
Step 7 Click **Next**.

Step 8 Complete one of the following:

- To run the Network Creation wizard, check the **Run the Network Wizard Now** check box and click **Finish**. Continue with [Step 9](#).
- To create an empty project to add sites and fibers manually, uncheck the **Run the Network Wizard Now** check box and click **Finish**. Project Wizard creates the project and an empty network and subnetwork under which you can manually add sites and fibers. Skip the remaining steps in this procedure. To add sites manually, see the [“2.3.1 Adding Sites”](#) section on [page 2-27](#).

- Step 9** In the Topology page of the Network Creation wizard (Figure 2-15), choose **Ring** or **Linear** from the Topologies drop-down list and click **Next**.

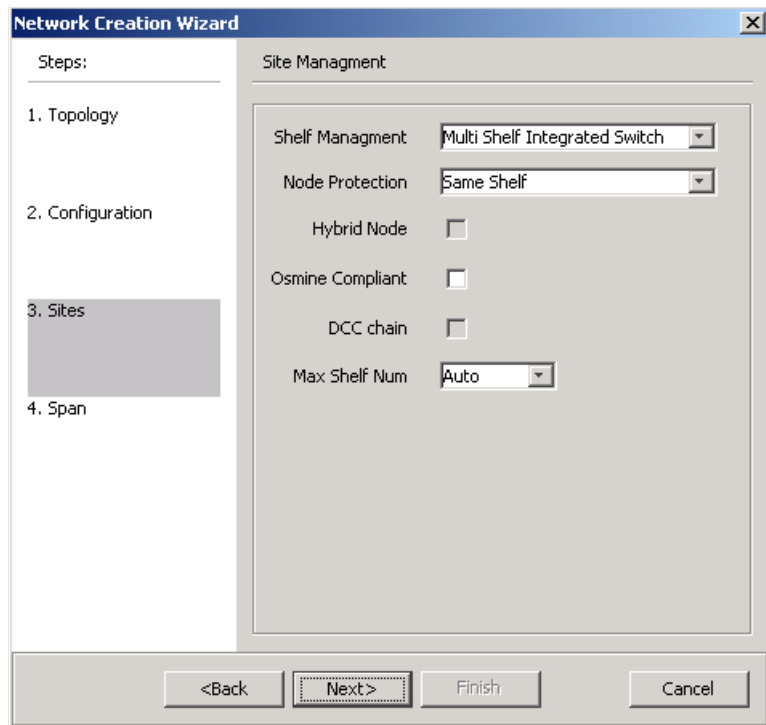
Figure 2-15 Network Creation Wizard Topology Page



- Step 10** On the Configuration page, enter the number of sites in the Site number field and click **Next**. The maximum number of sites per network design is 60 sites and the default is 3 sites.
- Step 11** On the Site Management page, complete the following (Figure 2-16):
- Shelf Management—Choose the shelf management configuration:
 - Multi Shelf Integrated Switch—All the Multi Service Transport Platform (MSTP) optical cards (optical add/drop multiplexers [OADMs] and amplifiers) reside in different shelves connected by a LAN. The LAN is implemented with switches connected to the MSTP shelves.
 - Multi Shelf External Switch—All the MSTP optical card (OADMs and amplifiers) reside in different shelves connected by a LAN. The LAN is implemented with switches external to the MSTP shelves.
 - Individual Shelf—All the MSTP optical cards (OADMs and amplifiers) reside in the same shelf.
 - Node Protection—Choose **Same Shelf** (single shelf configurations) or **Separated Shelves** (multishelf configurations). Same Shelf is the only option if you chose Individual Shelf as the Shelf Management type.
 - Hybrid Node—Check to create all the nodes configured as hybrid MSTP/Multi Service Provisioning Platform (MSPP) nodes. Hybrid Node is only available if you chose Individual Shelf as the Shelf Management type.
 - Osmine Compliant—Check to create all the nodes in the network design with transponder and line cards that are compliant with Operations Systems Modifications of Intelligent Network Elements (OSMINE).

- DCC chain—Check to put a TXP(P)_MR_2.5G card in Slot 12 on each shelf of each site. This option is available for individual shelves.
- Max Shelf Num—Choose the maximum number (from 1 to 4) of ANSI or ETSI shelves (equipping optical cards or TXP/MXP card) that can be placed in each rack in the site when generating the layout of the site.

Figure 2-16 Network Creation Wizard Site Management Page



Step 12 Click Next.

Step 13 In the Span Parameters, complete the following (Figure 2-17):

- Span Label Tag—Type the desired span label; the default label is Duct.
- Span Fibre Type—Choose the fiber type for each span in the network.
- Span Length—Type the span length. The displayed unit of measure is retrieved from the Span Measurements Units field.
- EOL Ageing Factor—Type the number to use when factoring fiber aging. This factor is multiplied by the SOL total span loss without connectors.
- EOL Ageing loss [dB]—Type the EOL aging loss value. The EOL loss-per-span value is added at the end of life to each discrete fiber in the network (for example, to add an EOL margin for splicing).



Note Enter a value in either EOL Ageing Factor or EOL Ageing loss; you do not need to enter a value in both fields.

- Connector loss [dB]—Type the concentrated loss at the end of the span.

- CD factor [ps/nm/km]—Type the fiber chromatic dispersion (CD) factor. The default value is dependent on the selected fiber type. Any value that you enter in this field is lost whenever you change the fiber type. Chromatic dispersion is always entered in ps/nm/km. Fiber chromatic dispersion is defined for the middle of the wavelength band. C-band is defined at 1545.3 nm; L-band is defined at 1590.4 nm.
- PMD factor [ps/sqrt(km)]—Type the polarization mode dispersion (PMD) factor. The default value is dependent on the selected fiber type. Any value that you enter in this field is lost whenever you change the fiber type. PMD is always entered in kilometers.
- Length Based Loss—Check to define whether the fiber loss is specified as an absolute value or derived from the span length.
- Loss factor [dB/km]—Type the value of the SOL fiber loss per kilometer that is used to calculate the loss of each span in the network. The fiber loss factor is always entered in dB/km.
- Tot SOL loss w/o conn [dB]—Type the start of life link fiber loss for each span, without the connector concentrated loss. The total SOL loss without connectors is equal to the loss factor multiplied by the length. In the Length Based model, this value is calculated automatically.

Figure 2-17 Network Creation Wizard Span Parameters Page

The screenshot shows the 'Network Creation Wizard' window with the 'Span Parameters' tab selected. On the left, a 'Steps' pane shows four steps: 1. Topology, 2. Configuration, 3. Sites, and 4. Span (which is highlighted). The main area contains the following parameters:

Span Label Tag	Duct
Span Fibre Type	G652-SMF
Span Length [Km]	1.0
EOL Ageing Factor	1.0
EOL Ageing loss [dB]	0.0
Connector loss [dB]	0.0
CD factor [ps/nm/km]	16.7
PMD factor [ps/sqrt(km)]	0.1
Length Based Loss	<input checked="" type="checkbox"/>
Loss factor [dB/km]	0.25
Tot SOL loss w/o conn [dB]	0.0

At the bottom, there are four buttons: '<Back', 'Next>', 'Finish' (which is highlighted with a dashed border), and 'Cancel'. A small vertical number '151659' is visible on the right side of the window.

- Step 14** Click **Finish**. Cisco MetroPlanner checks the validity of the fiber factor values. If the fiber factor values are within the valid range (Table 2-5), Cisco MetroPlanner creates a visual representation of the network. If the values are out of range, Cisco MetroPlanner issues a warning, asking you to confirm the input values.

Table 2-5 Valid Ranges for Fiber Factor Values

Fiber Type	Parameter	Min. Error Value	Min. Warning Value	Default Value	Max. Warning Value	Max. Error Value	Unit
ITU-T G.652-SMF	Loss factor	0	0.2	(*)	0.4	10	dB/km
	Chromatic dispersion factor at 1545.3 nm (C-band)	0	16.2	16.7	17.1	30	ps/nm/km
	Chromatic dispersion factor at 1590.4 nm (L-band)	0	18.53	19.03	19.43	30	ps/nm/km
	PMD factor	0 ps/	0.0	0.1	0.5	10	ps/(√km)
ITU-T G.655-E-LEAF	Loss factor	0	0.2	(*)	0.4	10	dB/km
	Chromatic dispersion factor at 1545.3 nm	0	3.4	3.80	4.2	10	ps/nm/km
	PMD factor	0	0	0.1	0.5	10	ps/(√km)
ITU-T G.655-True Wave	Loss factor	0	0.2	(*)	0.4	10	dB/km
	Chromatic dispersion factor at 1545.3 nm	0	3.8	4.19	4.6	10	ps/nm/km
	PMD factor	0	0	0.1	0.5	10	ps/(√km)
ITU-T G.652-DS (Dispersion shifted)	Loss factor	0	0.2	(*)	0.4	10	dB/km
	Chromatic dispersion factor at 1590.4 nm (L-band)	0	2.43	2.83	3.23	30	ps/nm/km
	PMD factor	0	0	0.1	0.5	10	ps/(√km)

2.3.1 Adding Sites

Use the following procedure to add new sites to an existing network. A site is a customer premise location where any equipment can be co-located in a rack within a building.



Note

Cisco MetroPlanner supports up to 60 sites. However, the ONS 15454 DWDM platform will only support up to 16 non-pass-through sites on any given network. Although Cisco MetroPlanner will allow you to add more than 16 sites, it will generate errors when the network analysis runs.

Step 1 Right-click the network folder in the Project Explorer and choose **Expand** from the shortcut menu.

- Step 2** Right-click the Sites folder and choose **New Site** from the shortcut menu. The Site Creation wizard appears. As an alternative, if sites already exist in the network design and you have the NtVw Net# tab open, click the Create a new site icon in the toolbar. For more information about the Cisco MetroPlanner icons, see [Appendix A, “GUI Information and Shortcuts.”](#)
- Step 3** Choose the interface type:
- **Line**—Two pairs of fibers are terminated at the node.
 - **Terminal**—A single pair of fibers is terminated at the node.
 - **Line+**—Two pairs of fibers are terminated at the node but the number of fibers can be increased. An MMU card (topology upgrade) must be installed.
 - **Terminal+**—A single pair of fibers is terminated at the node but the number of fibers can be increased. An MMU card (topology upgrade) must be installed.
- Step 4** Click **Finish**.
-

2.3.2 Deleting Sites

Use the following procedure to delete sites from a network. You can delete a site if the site is in the Unlocked state and does not have a traffic demand set up on it.

- Step 1** Verify that the site is in the Unlocked state in the Project Explorer pane. For more information, see the [“2.7.4 Unlocking Parameters in the Network Design”](#) section on page 2-80.
- Step 2** Delete any traffic demands. For more information, see the [“2.6.9 Deleting a Traffic Demand”](#) section on page 2-71.
- Step 3** On the NtVw Net# tab, click the Site icon and choose **Delete** from the Tasks Pane. For more information about the Cisco MetroPlanner icons, see [Appendix A, “GUI Information and Shortcuts.”](#)
-

2.3.3 Adding Fiber Spans

Use the following procedure to manually add fiber spans between sites. A fiber span consists of a pair of fibers (one transmit and one receive) between two sites. A span is represented by a fiber duct in the NetView Net# tab. Within a fiber duct, more than one fiber pair can exist.

- Step 1** In the NtView Net# tab, click the Create a new duct icon in the toolbar. For more information about the Cisco MetroPlanner icons, see [Appendix A, “GUI Information and Shortcuts.”](#)
- Step 2** Click one of the sites that you want to connect with a fiber span. This site will be the source site for later network analysis output.
- Step 3** Click the destination site. A fiber span appears between the two sites. This site will be the destination site for later network analysis output.

For the first span, the source site is set as East and the destination site is set as West. Cisco MetroPlanner automatically adjusts East and West for additional spans.

2.3.4 Creating a Point-to-Point Demand

Use the following procedure to add a point-to-point traffic demand:

- Step 1** In the NtView Net# tab, click the Create a new P2P demand icon in the toolbar. For more information about the Cisco MetroPlanner icons, see [Appendix A, “GUI Information and Shortcuts.”](#)
- Step 2** Click the source site of the demand.
- Step 3** Click the destination site of the demand. The Point to Point Demand Creation Wizard appears ([Figure 2-18](#)).

Figure 2-18 Point to Point Demand Creation Wizard

- Step 4** In the General Parameters area, complete the following:
- Label—Type the name of the demand.
 - Source—(Display only) Displays the source site name.
 - Destination—(Display only) Displays the destination site name.
 - Service Type—Choose the service type from the drop-down list. For a list of services, see the [“1.2.6 Service Support”](#) section on page 1-4.
 - Present # ch—Enter the number of channels to be created. The Forecast # ch field automatically updates with the number entered in this field.
 - Forecast # ch—Enter the number of channels to be installed at a later date. This value includes the Present # ch value. For example, if you entered 4 in the Present # ch value and want to add two channels in the future, enter 6.
- Step 5** Click Next.

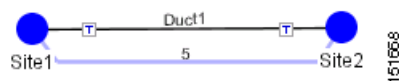
- Step 6** In the Platform Parameters area, complete the following:
- Protection—Choose the protection type from the drop-down list: **Y-Cable Protected**, **Client 1+1**, **Fiber Switched**, or **Unprotected**. For more information on protection types, see the “[1.2.5 Protection Scheme Support](#)” section on page 1-3.
 - Path—(Unprotected only) Choose the routing type from the drop-down list:
 - **Auto**—Allows the highest degree of flexibility in routing the channels. Cisco MetroPlanner routes the channels with the lowest possible cost given the other constraints.
 - **EAST->WEST**—Routes all the channels from the east side of the source site.
 - **WEST->EAST**—Routes all the channels from the west side of the source site.
 - Optical Bypass—(Unprotected only) Choose the site where the channels for the current demand will be optically dropped.
- Step 7** Complete the following fields in the Interface Parameters area. The options available are based on the service type selected in [Step 4](#).
- Transponder—Click to expand, then check the card type check box to select the card at the end sites of the service channels.
 - Line Card—Click to expand, then check the card type check box to select the card at the end sites of the service channels.
 - Alien Card—Displays only if you created a third-party interface as described in the “[2.2.5 Defining Third-Party DWDM Interfaces](#)” section on page 2-10. Click to expand, and then check the card type check box to select the card at the end sites of the service channels.
 - Pluggable Card—Click to expand, then check the card type check box to select the card at the end sites of the service channels.
- Step 8** In the Client Interface area, define the client interface type (SR, IR, or LR) for the source and destination from the Source and Destination drop-down lists. This option is available only for transponder interfaces and depends on the selected service type and card type.
- Step 9** Click **Finish**. The Edit Point to Point Demand dialog box appears listing the present and forecast channels.

The demand appears in the NtVw Net# tab. A demand is a solid line when selected and a dotted line when not selected. The line has a number above it that indicates the number of channels that are present. [Figure 2-19](#) shows a selected point-to-point demand with five channels between Sites 1 and 2.



Note To make changes to the demand parameters, see the “[2.6.6 Editing a Point-to-Point Demand](#)” section on page 2-67, or click **Cancel** to close the Edit Point to Point Demand dialog box.

Figure 2-19 Point-to-Point Demand Between Two Sites

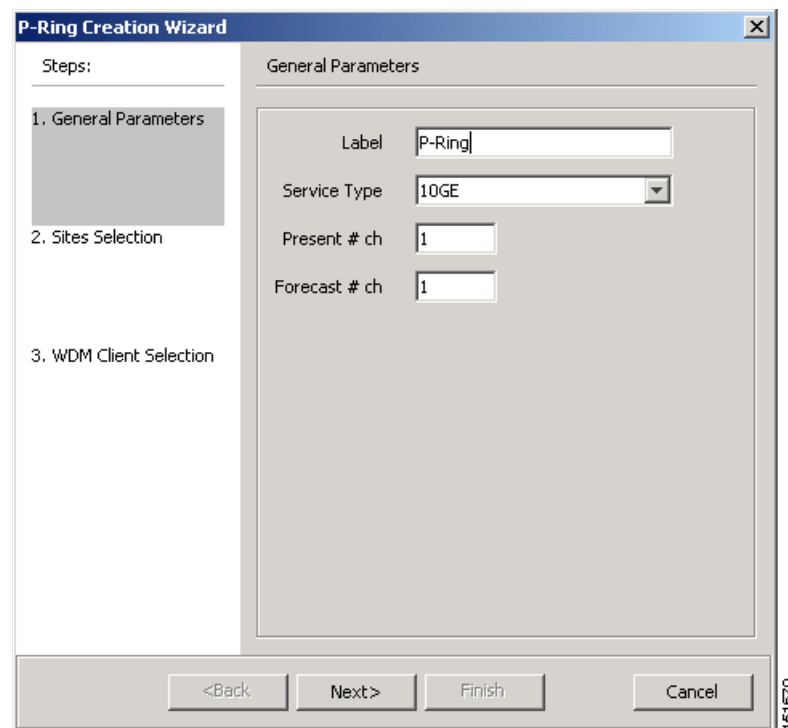


2.3.5 Creating a Protected Ring Demand

Use the following procedure to create a P-ring traffic demand.

- Step 1** Create a ring network using either the procedures in the “2.3 Creating a Project” section on page 2-21 or by manually placing sites into a ring configuration.
- Step 2** In the Native Net# tab, click the Create a new P-Ring demand icon in the toolbar. The P-Ring Creation Wizard appears (Figure 2-20). For more information about the Cisco MetroPlanner icons, see Appendix A, “GUI Information and Shortcuts.”

Figure 2-20 P-Ring Creation Wizard



- Step 3** In the General Parameters area, complete the following:
- **Label**—Enter the name of the demand.
 - **Service Type**—Choose the service type from the drop-down list. For a list of services, see the “1.2.6 Service Support” section on page 1-4.
 - **Present # ch**—Enter the number of channels to be created. The Forecast # ch field automatically updates with the number entered in this field.
 - **Forecast # ch**—Enter the number of channels to be installed at a later date. This value includes the Present # ch value. For example, if you entered 4 in the Present # ch value and want to add two channels in the future, enter 6.
- Step 4** Click **Next**.
- Step 5** In the Protection Sites area, press **Ctrl** and click the sites that you want to add to the P-ring. A P-ring requires at least three sites. Click the right arrow button.

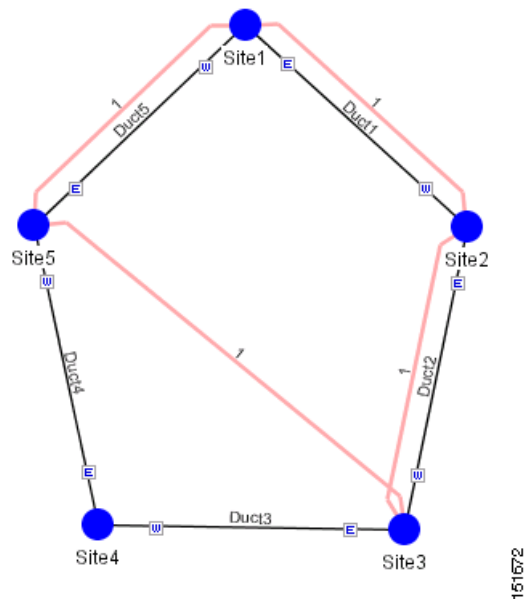
- Step 6** In the Optical Bypass area, press **Ctrl** and click the sites that you want to add to the P-ring. Click the right arrow button.
- Step 7** Click **Next**.
- Step 8** Complete the following interface parameters. The options available are based on the service type selected in [Step 3](#).
- Transponder—Click to expand, then check the card type check box to select the card at the end sites of the service channels.
 - Line Card—Click to expand, then check the card type check box to select the card at the end sites of the service channels.
 - Alien Card—Displays only if you created a third-party interface as described in the “[2.2.5 Defining Third-Party DWDM Interfaces](#)” section on [page 2-10](#). Click to expand, and then check the card type check box to select the card at the end sites of the service channels.
 - Pluggable Card—Click to expand, then check the card type check box to select the card at the end sites of the service channels.
- Step 9** In the Client Interface area, define the client interface type (SR, IR, or LR) for the source and destination from the Source and Destination drop-down lists. This option is available only for transponder interfaces and depends on the selected service type and card type.
- Step 10** Click **Finish**. The Edit P-Ring Demand dialog box appears.

The demand appears in the NtVw Net# tab. A demand is a solid line when selected and a dotted line when not selected. The line has a number above it that indicates the number of channels present. [Figure 2-21](#) shows a selected one-channel P-ring between Sites 1, 2, 3, and 5 with an optical bypass of Site 4.

**Note**

To make changes to the demand parameters, see the “[2.6.7 Editing a P-Ring Demand](#)” section on [page 2-68](#), or click **Cancel** to close the Edit P-Ring Demand dialog box.

Figure 2-21 P-Ring Demand



2.3.6 Creating a ROADM Demand

Use the following procedure to create ROADM traffic groups and demands:

- Step 1** In the Project Explorer, right-click the **Groups** folder and choose **Expand** from the shortcut menu.
- Step 2** Right-click the ROADM folder and choose **Create new ROADM group** from the shortcut menu. The ROADM Group Creation Wizard appears.
- Step 3** Type the ROADM traffic group name in the Group Name field.
- Step 4** Check the desired sites.
- Step 5** Click **Finish**. The new ROADM traffic group appears under the ROADM folder in the Project Explorer.
- Step 6** Right-click the new ROADM traffic group and choose **Create new ROADM demand** from the shortcut menu. The Create ROADM Demand dialog box appears (Figure 2-22).

Figure 2-22 Create ROADM Demand Dialog Box

Service Types	Yes/No	Client Interface	Y-Cable	1+1	Fiber Switched	Supported
<input type="checkbox"/> 10GE LAN PHY	<input type="checkbox"/>	MXP_MR_2.5G	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> 10GE WAN PHY	<input type="checkbox"/>	MXP_MR_2.5G	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input type="checkbox"/> 15530 10-Gbps Aggregated	<input type="checkbox"/>	MXP_MR_100ME-wjFEC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> 15530 2.5-Gbps Aggregated	<input type="checkbox"/>	MXP_MR_100ME-wjFEC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> 15530 Data MXP	<input type="checkbox"/>	MXP_MR_100ME-wjFEC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> 15530 MR Transport	<input type="checkbox"/>	MXP_MR_100ME-wjFEC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> 1G-FICON	<input type="checkbox"/>	TXP_MR_10E-wjFEC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> 2G-FICON	<input type="checkbox"/>	TXP_MR_10E-wjFEC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> 2R Any Rate	<input type="checkbox"/>	TXP_MR_10E-wjFEC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> D1 Video	<input type="checkbox"/>	TXP_MR_10E-wjFEC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> DV-6000	<input type="checkbox"/>	TXP_MR_10E-y-wjFEC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> DVB ASI	<input type="checkbox"/>	TXP_MR_10E-y-wjFEC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> ESCON	<input type="checkbox"/>	TXP_MR_10E-y-wjFEC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> Fast Ethernet 100Mbps	<input type="checkbox"/>	TXP_MR_10E-y-wjFEC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> Fibre Channel	<input type="checkbox"/>	MXP_2.5G_10E-wjFEC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

- Step 7** Enter a name for the demand in the Demand Name field.
- Step 8** Select a traffic pattern type (Hub or Meshed) from the Traffic Type drop-down list. If you select Hub, the First Site drop-down list becomes available. If you selected Meshed, proceed to [Step 10](#).
- Step 9** For Hub traffic types, select the originating site from the First Site drop-down list.
- Step 10** Select a connectivity type from the Connectivity type drop-down list: **Protected**, **Unprotected Minimum Hop**, **Unprotected Optimum Path**, or **Unprotected Subnet**. Refer to the “[1.5.3 ROADM Traffic Groups](#)” section on page 1-9 for more information on the connectivity choices. If you chose Unprotected Subnet, continue with the next step; otherwise proceed to [Step 12](#).
- Step 11** If you chose Unprotected Subnet, choose the starting site and the direction the ring must be traversed from the drop-down lists.
- Step 12** In the Service Types list, check the boxes for one or more client service types for the ROADM demand. The client interfaces that support each service type appear in the table to the right of the Service Types list.
- Step 13** To further define the client interfaces, complete the following options for each client interface listed in the table. Check boxes in gray are not available for selection.
- Yes/No—Check to select this card to implement the service type.
 - Client Interface—(Display only) Displays the card type for the selected service type.
 - Y Protected—Check to select Y-cable protection if the connectivity type is Protected.
 - 1+1 Protected—Check to select 1+1 protection if the connectivity type is Protected.
 - Fiber Switched—Check to select fiber-switching protection if the connectivity type is Protected.
 - Supported Service—(Display only) Displays the service types supported for the card.
- You can select more than one client interface to support the same service type. By default, Cisco MetroPlanner checks the best client interface to support each service.
- Step 14** Click **Ok** to create the demand.

2.3.7 Deleting a Network

To delete a network from a project, in the Network Mgmt Tree tab click the network and choose **Delete** from the Tasks Pane. You cannot delete a network if it is the only network in a project.

2.3.8 Adding Notes to a Project

Use the following procedure to add a note to any item in the Project Explorer. Each network has a Notes folder in the Project Explorer. After you have created a note, it appears in the Notes folder for that particular network.

-
- Step 1** Right-click the desired item in the Project Explorer and choose **Edit Note** from the shortcut menu.
 - Step 2** In the Edit Note creation box, enter the desired text.
 - Step 3** To close the Edit Note creation box and to save the note, click the **X** in the upper right corner of the window.
 - Step 4** To view notes, double-click the **Notes** folder. The Notes window appears. [Table 2-6](#) lists the columns in the Notes window.

Table 2-6 Notes Window

Column	Description
Header	Displays the note text. To view the entire note, click the plus (+) sign next to the header to expand the text.
Action	Click Go to open the item in the Project Explorer where the note was created.
Source	Displays the location of the note, for example, ProjectManager.Nets.Net2.Sites.Site2.W.

- Step 5** To close the Notes window, click the **X** in the upper right corner of the window.
-

2.3.9 Deleting Notes

Use the following procedure to delete a note from any item in the Project Explorer:

-
- Step 1** Double-click the **Notes** folder.
 - Step 2** In the Notes window, click **Go** in the Action column for the note that you want to delete. The item is highlighted in the Project Explorer.
 - Step 3** Right-click the item in the Project Explorer and choose **Delete Note** from the shortcut menu.
-

2.4 Analyzing the Network

After you have created the desired sites, fiber spans, and service demands, you must analyze the network to determine network performance. The network must be in the Design, Install, or Upgrade state before you can analyze it. Cisco MetroPlanner automatically optimizes the design and summarizes the optical transmission performance. If there are problems with the design, Cisco MetroPlanner lists the problems and descriptions in the Analyzer Messages pane.

Use the following procedure to analyze the network:

-
- Step 1** Click the **Networks Mgmt Tree** tab, and click the network that you want to analyze.
- Step 2** Click the Analyze Network icon in the toolbar. For more information about the Cisco MetroPlanner icons, see [Appendix A, “GUI Information and Shortcuts.”](#) As an alternative, click **Analyze** in the Tasks Pane.
- The MetroPlanner analyzer status window appears to indicate the progress. The Cisco MetroPlanner analysis status bar indicates when the network analysis is complete.
- Step 3** If any problems occur during the analysis, click the **Analyzer** tab to view the results on the Analyzer Messages pane. The Summary report appears. See the [“2.5.1 Viewing the Summary Report”](#) section on [page 2-37](#) for more information.
- Step 4** If necessary, resolve the problems listed in the Summary report. After you resolve the problems in the network, you can analyze the network again.



Note

You can return a Design-Analyzed network to the design state to make further changes by clicking the network icon in the Networks Mgmt Tree and clicking **Design** in the Tasks Pane.

2.5 Viewing Network Reports

Cisco MetroPlanner provides the reports listed in [Table 2-7](#). Report availability depends on whether a network has been analyzed or whether it is in the Install or Upgrade state. Reports are also available by site. See [Table 2-7](#) for report availability details.

Table 2-7 Report Availability

Report	Network Availability	Site Availability
NE Update	Analyzed	—
Installation Parameters	Analyzed	Analyzed
Traffic Matrix	Analyzed	Analyzed
Layout	Install, Upgrade, and Analyzed	Install, Upgrade, and Analyzed
Link Availability	Analyzed	Analyzed
Internal Connections	Analyzed	—
Optical Results	Analyzed	Analyzed
Wavelength Routing	Analyzed	—

Table 2-7 Report Availability (continued)

Report	Network Availability	Site Availability
Summary	Install, Upgrade, and Analyzed	Install, Upgrade, and Analyzed
Bill of Material	Install, Upgrade, and Analyzed	Install, Upgrade, and Analyzed

For more information on the Bill of Materials report, see the “[2.8 Generating a BoM](#)” section on [page 2-80](#). In addition, you can compare the following reports using the Reports Diff tool: Bill of Material, Internal Connections, and Installation Parameters.

To complete the procedures in this section, you must have a project open and the network(s) loaded. See the “[2.1.1 Opening a Project](#)” section on [page 2-3](#) and the “[2.1.2 Loading and Unloading Networks](#)” section on [page 2-3](#).

2.5.1 Viewing the Summary Report

The Summary report summarizes design information, optical results, design cost, and analyzer messages. You can view it before or after you analyze a network. It automatically appears when you analyze a network. Use the following procedure to view the report at another time:

-
- Step 1** Complete one of the following:
- To view the Summary report for a network, click the **Networks Mgmt Tree** tab and click the network.
 - To view the Summary report for a site, click the **NtView Net#** tab and click the site.
- Step 2** In the Tasks Pane, click **Summary**. The Summary tab appears ([Figure 2-23](#)).

Figure 2-23 Summary Tab

Design info

Version	7.0.0.13
Customer name	-
Created by	kimmcc
Release	release 7.0

Optical results

	Demands	●	●	●	●
PointToPoint	0	-	-	-	-
P-Rings	1	-	-	-	-
ROADMs	0	-	-	-	-
Totals	1	0	0	0	0

Detailed optical results data are available through [Optical Results Report](#)

Design cost info

Price list	MasterPriceDB
Currency	Usd
BoM total discounted	2,338,605.00
Spare total discounted	0.00
BoM + Spare total discounted	2,338,605.00

For a detailed report, see [Network Bill Of Material](#)

Messages

Legend

i Info messages ⚠ Warning messages ✖ Error messages ⊘ Fatal errors

	Header	Action	Source
i	No specific anti-ASE node is required for...		
i	Analysis ended successfully		

Summary

Table 2-8 lists the categories in the Summary tab and their descriptions.

Table 2-8 Summary Tab Categories

Category	Description
Design info	Displays the following information: <ul style="list-style-type: none"> Version—Displays the Cisco MetroPlanner software release version. Customer name—Displays the name of the customer requiring this network design. Created By—Displays the user login name. Release—Displays the Cisco MetroPlanner software release number.
Optical results	Indicates how many demands are included in the network, and identifies the number and severity of alarms for each demand.

Table 2-8 Summary Tab Categories (continued)

Category	Description
Design cost info	Displays the following information: <ul style="list-style-type: none"> • Price list—Displays the price list used. • Currency—Displays the currency selected for the price list. • BoM total discounted—Displays the total price of the products (excluding spare parts) in the network with the discount applied. • Spare total discounted—Displays the total price of the spare parts in the network with the discount applied • BoM + Spare total discounted—Displays the total price of the products (including spare parts) in the network with the discount applied.
Messages	Displays any analyzer messages that occurred as a result of network analysis.

2.5.2 Saving the NE Update File

After Cisco MetroPlanner calculates the installation parameters, you can create a configuration file in XML format for each site in the network. This file can be directly imported to a site using the NE Update feature in CTC. CTC uses this file to preprovision a node.

Cisco MetroPlanner generates one text file for each site in the network in the Cisco MetroPlanner installation folder. Each file is named with the site name string by default. File data format and the list of reported installation parameters depend on the system release selected for the designed network. You generally save this file after you analyze an Install network.

Use the following procedure to save the NE Update file:

-
- Step 1** Click the **Networks Mgmt Tree** tab, and click the analyzed network.
- Step 2** In the Tasks Pane, click **NE Update**. The Network Element Update File dialog box appears.
- Step 3** Check the **Include wavelength parameters** check box to include trunk wavelength preprovisioning in the NE Update XML file. Do not check this box if the network on which you import the NE Update file is using system release 7.0.0. If this option is checked, trunk wavelength is preprovisioned in CTC for all the TXP and MXP units required to support present traffic demands.



Note During project creation, selecting MSTP- Release 7.0 allows you to create projects for system releases 7.0.0 and 7.0.x. However, when importing the NE Update file on a node using system release 7.0.0, the node cannot read the NE Update XML file if Include wavelength parameters is checked.

- Step 4** To save the file in a different directory than the Destination Folder, click **Change** and navigate to the desired directory. Click **Save**.
- Step 5** Click **Finish**.

Step 6 Click **Cancel** to close the window without saving a configuration setup file.

2.5.3 Viewing the Installation Parameters

The Installation Parameters reports shows the values to be set (provisioned) at installation time on each site in the network. These parameters are exported when you save the NE Update file and are used to automatically provision a node using CTC.

Use the following procedure to view the installation parameters after a network has been analyzed:

Step 1 Complete one of the following:

- To view the Installation Parameters report for a network, click the **Networks Mgmt Tree** tab and click the network.
- To view the Installation Parameters report for a site, click the **NtView Net#** tab and click the site.

Step 2 In the Tasks Pane, click **Installation Parameters**. The Installation Parameters tab appears (Figure 2-24). The ANS view subtab appears by default. This tab displays the automatic node setup information.

Figure 2-24 ANS View Subtab in the Installation Parameters Tab

Name	Side	Position	Unit	Port #	Port ID	Port Label	Parameter	Value	Measurement Unit
Site1	W						dwdm::Tx::Power::Add-and-DropOutputP...	-0.1	dBm
	E						dwdm::Rx::Power::DropPowerBand	-3.0	dBm
	W						dwdm::Tx::Threshold::FiberStageInput	-3.0	dBm
	W						dwdm::Rx::Power::DropPowerBand	-3.0	dBm
	E						dwdm::Tx::Power::Add-and-DropOutputP...	-0.1	dBm
	E						dwdm::Tx::Threshold::FiberStageInput	-3.0	dBm
	E						dwdm::Rx::Power::Add-and-DropInputPo...	-3.7	dBm
Site2	W						dwdm::Rx::Power::Add-and-DropInputPo...	-3.7	dBm
	W						dwdm::Tx::Power::Add-and-DropOutputP...	-0.1	dBm
Site3	W						dwdm::Rx::Power::DropPowerBand	-3.0	dBm
	E						dwdm::Tx::Threshold::FiberStageInput	-3.0	dBm
	W						dwdm::Rx::Power::DropPowerBand	-3.0	dBm
	E						dwdm::Tx::Power::Add-and-DropOutputP...	-0.1	dBm
	E						dwdm::Tx::Threshold::FiberStageInput	-3.0	dBm
	E						dwdm::Rx::Power::Add-and-DropInputPo...	-3.7	dBm
	W						dwdm::Rx::Power::Add-and-DropInputPo...	-3.7	dBm

Table 2-9 describes the columns on the ANS view tab of the Installation Parameters report.

Table 2-9 Installation Parameters Report ANS View Tab Columns

Category	Description
Name	Displays the name of the site.
Side	Displays the node interface: T (terminal), E (east), or W (west).
Position	Displays the rack, shelf, and slot position of the card from which the patchcord originates.
Unit	Displays the name of the card.
Port #	Displays the port number from which the patchcord originates.

Table 2-9 Installation Parameters Report ANS View Tab Columns (continued)

Category	Description
Port ID	Displays the port ID.
Port Label	Displays the name of the port.
Parameter	Displays the name of the parameter to be set, such as RX Power Low.
Value	Displays the name of the value to be set.
Measurement Unit	Displays the measurement unit for the related installation parameter value, such as dBm.
Manual Set	Indicates with a Yes or No which parameters must be manually set using the CTC interface.

- Step 3** Click the **ANP view** tab to view the automatic node provisioning information. [Table 2-10](#) describes the columns on the ANP view tab of the Installation Parameters report.

Table 2-10 Installation Parameters Report ANP View Tab

Category	Description
Name	Displays the name of the site.
Shelf ID	Displays the shelf identifier.
Rack number	Displays the rack number.
Rack position	Identifies the rack position in the shelf.
Slot position	Identifies the slot position in the shelf for the card.
Equipment type	Displays the card type.

- Step 4** Click the **PP view** tab to view the provisioning parameters information. [Table 2-11](#) describes the columns on the PP view tab of the Installation Parameters report.

Table 2-11 Installation Parameters Report PP View Tab

Category	Description
Name	Displays the name of the site.
Shelf ID	Displays the shelf identifier.
Slot position	Displays the slot number for the card with the PPM.
Port position	Displays the port number.
Ppm position	Displays the PPM location on the card.
Pp name	Displays the name of the PPM.
value	Displays the installation parameter value.

- Step 5** To close the Installation Parameters report, click the **X** on the top right of the Installation Parameters tab.

2.5.4 Viewing Internal Connections

Use the following procedure to view the network internal connections after a network has been analyzed.

You can also use this procedure to view the patchcord connections between transponders and the Y-Cable Protection FlexLayer modules. The Y-Cable Protection FlexLayer position is defined using the rack and shelf number. The slots are numbered from left to right on each of the four FlexLayer modules that can be placed in a shelf.

Step 1 Click the **Networks Mgmt Tree** tab, and click the analyzed network.

Step 2 In the Tasks Pane, click **Internal Connections**. The Internal Connections tab appears (Figure 2-25).

Figure 2-25 Internal Connections Tab

The screenshot shows the 'Internal Connections' tab in the Cisco MetroPlanner interface. The table displays connections between Site1 and Site2. The columns are Name, Position, Unit, Port label, Attenuator, and Position. The connections are as follows:

Name	Position	Unit	Port label	Attenuator	Position
Cable	Rack 1.ShelfAnsi 1.Slot 2	OadmItem1Ch	EXP TX		Rack 1.ShelfAnsi 1.Slot 16
Cable	Rack 1.ShelfAnsi 1.Slot 16	OadmItem1Ch	EXP TX		Rack 1.ShelfAnsi 1.Slot 2
Cable	Rack 1.ShelfAnsi 1.Slot 2	OadmItem1Ch	AD_TX0		Rack 1.ShelfAnsi 1.Slot 3
Cable	Rack 1.ShelfAnsi 1.Slot 3	Monviso10G	DWDM-TX		Rack 1.ShelfAnsi 1.Slot 2
Cable	Rack 1.ShelfAnsi 1.Slot 16	OadmItem1Ch	AD_TX0		Rack 1.ShelfAnsi 1.Slot 15
Cable	Rack 1.ShelfAnsi 1.Slot 15	Monviso10G	DWDM-TX		Rack 1.ShelfAnsi 1.Slot 16
Cable	Rack 1.ShelfAnsi 1.Slot 1	OscCsm	COM TX		Rack 1.ShelfAnsi 1.Slot 2
Cable	Rack 1.ShelfAnsi 1.Slot 2	OadmItem1Ch	COM TX		Rack 1.ShelfAnsi 1.Slot 1
Cable	Rack 1.ShelfAnsi 1.Slot 17	OscCsm	COM TX		Rack 1.ShelfAnsi 1.Slot 16
Cable	Rack 1.ShelfAnsi 1.Slot 16	OadmItem1Ch	COM TX		Rack 1.ShelfAnsi 1.Slot 17

The interface also shows a 'Patchcord installation view' subtab selected, and a 'SW provisioning view' subtab. The date and time are January 11, 2006 at 10:15:12. The interface includes a 'Details' header, an 'Export' button, and a 'Networks Mgmt Tree' tab with 'NtReports Net1' selected.

Table 2-12 lists the columns in the Internal Connections tab and their descriptions. Click a columns to sort the table information by that column.

- Click the **Patchcord installation view** subtab to view all the patchcord connections that the installer has to mechanically cable within the site between the different ports of the cards.
- Click the **SW Provisioning view** subtab to view the patchcord representation on the local Cisco Transport Controller (CTC) interface. This subtab contains all the connections to be manually set or removed with respect to the default connections that are automatically generated by the software running on the node.

Table 2-12 Internal Connections Tab Columns

Column Name	Description
Name	Displays the name of the site. On the SW provisioning view subtab, this column indicates whether the connection should be manually set using the CTC interface or removed.
Position-1	Displays the rack, shelf, and slot position of the card from which the patchcord originates.
Unit-1	Displays the name of the card.
Port Num	(SW provisioning view subtab only) Displays the port number where the patchcord terminates.
Port ID-1	(SW provisioning view subtab only) Displays the port ID.
Port label-1	Displays the name of the port.
Attenuator	When indicated, this is the product ID of the bulk attenuator to be equipped on this connection. It also reports when an internal attenuator must be placed between the DC-TX and DC-RX ports on the preamplifier (when no DCU is equipped).
Position-2	Displays the rack, shelf, and slot position of the card where the patchcord terminates.
Unit-2	Displays the name of the card.
Port Num	(SW provisioning view subtab only) Displays the port number where the patchcord terminates.
Port ID-2	(SW provisioning view subtab only) Displays the port ID.
Port Label-2	Displays the name of the port.
P/F	Displays whether the connection relates to a present or forecast circuit.

- Step 3** To export the information to an external file, click **Export**. In the Internal connections export dialog box, type the name of the file and navigate to the desired folder. Click **Save**.
- Step 4** To close the Internal Connections tab, click the **X** in the upper right corner of the tab.

2.5.5 Viewing the Traffic Matrix Report

The Traffic Matrix report displays the point-to-point, P-ring, and ROADM channel data. Use the following procedure to view the traffic matrix report:

- Step 1** Complete one of the following:
- To view the Traffic Matrix report for a network, click the **Networks Mgmt Tree** tab and click the network.
 - To view the Traffic Matrix report for a site, click the **NtView Net#** tab and click the site.
- Step 2** In the Tasks Pane, click **Traffic Matrix**. The Traffic Matrix tab appears.
- Step 3** Click **New Query** to open the Query Dialog (Figure 2-26). The Query Dialog allows you to filter the optical results using a variety of parameters and templates.

Figure 2-26 Query Dialog

- Step 4** To perform a query using individual parameters, select the desired parameters from the drop-down lists in the Query Definition area. The selected parameters appear in the Query Preview area at the bottom of the screen. [Table 2-13](#) describes the fields in the Query Dialog.

Table 2-13 Query Dialog Fields

Column Label	Description
Group	Allows you to filter the report to include only the data in the selected group. You can also view groups in the Project Explorer view under the network folder.
Demand	Allows you to filter the report to include only the data in the selected demand. The demand field is available only when you select a specific traffic group.
DWDM Card Type	Allows you to filter the report to include only the data in the selected DWDM card type.
Source	Allows you to filter the report to include only the results of incoming/outgoing services to or from a specific source site.
Destination	Allows you to filter the report to include only the results of incoming/outgoing services to or from a specific destination site.
Wavelength	Allows you to filter the report to include only services using the specified wavelength.
Alarm	Allows you to filter the report to include only services flagged with a green, yellow, orange, or red indicator.
P/F	Allows you to filter the report to include only present services, only forecast services, or both.
Virtual	Allows you to filter the report to include or exclude virtual channels in the Optical Results Table.

Step 5 Choose one of the following, as needed:

- Click **Run Query**. The window closes, and the query results appear in the Traffic Matrix tab (Figure 2-27). The parameters of the query appear in the horizontal area just below the button bar.
- Click **Reset Query** to clear your selections in the Query Dialog.
- Click **Close** to close the window without running a query.

Figure 2-27 Traffic Matrix Tab

Group	Serv. Circuit	Source	Source Position	Source Unit	Source Port	Destination	Destination Position	Destination Unit
P-Ring 1	Site1-Site2	Site1	Rack 1.ShelfAnsi 1.Slot 4	TXP_MR_10E_C	Client-RX	Site2	Rack 1.ShelfAnsi 1.Slot 3	TXP_MR_10E_C
	Site2	Site2	Rack 1.ShelfAnsi 1.Slot 3	TXP_MR_10E_C	Client-RX	Site1	Rack 1.ShelfAnsi 1.Slot 4	TXP_MR_10E_C
	Site2-Site3	Site2	Rack 1.ShelfAnsi 1.Slot 4	TXP_MR_10E_C	Client-RX	Site3	Rack 1.ShelfAnsi 1.Slot 3	TXP_MR_10E_C
	Site3	Site3	Rack 1.ShelfAnsi 1.Slot 3	TXP_MR_10E_C	Client-RX	Site2	Rack 1.ShelfAnsi 1.Slot 4	TXP_MR_10E_C
	Site3-Site1	Site3	Rack 1.ShelfAnsi 1.Slot 4	TXP_MR_10E_C	Client-RX	Site1	Rack 1.ShelfAnsi 1.Slot 3	TXP_MR_10E_C
	Site1	Site1	Rack 1.ShelfAnsi 1.Slot 3	TXP_MR_10E_C	Client-RX	Site3	Rack 1.ShelfAnsi 1.Slot 4	TXP_MR_10E_C

Each row in the tab shows the performance of one optical path. Table 2-18 describes the information in the columns. The Traffic Matrix report displays separate rows for the TX and RX direction of the optical channels.

Table 2-14 Traffic Matrix Tab Columns

Column Label	Description
Group	Categorizes each demand type (Point-to-Point, P-ring, and ROADM). Click the plus (+) sign by a demand type to expand and show the optical channels.
Serv. Circuit	Displays the optical channel label; for example, Site1-Site2.
Source	Displays the site name for the optical channel source.
Source Position	Displays the rack, shelf, and slot identifiers for the source of the optical channel. The format of the field is Rack.Shelf.Slot.
Source Unit	Displays the product ID for the optical channel source.
Source Port	Displays the port for the source of the optical channel; for example, Client RX.
Destination Side	Displays the site name for the optical channel destination.
Destination Position	Displays the rack, shelf, and slot identifiers for the destination of the optical channel. The format of the field is Rack.Shelf.Slot.
Destination Unit	Displays the product ID for the optical channel destination.
Destination Port	Displays the port for the destination of the optical channel; for example, Client TX.
Cl. Serv. Type	Displays the client service type of the demand; for example, OC-48.
Protection	Displays the protection type of the demand; for example, P-ring or Y-cable.
Wavelength	Displays the wavelength of the optical channel.

Table 2-14 Traffic Matrix Tab Columns (continued)

Column Label	Description
Opt Bypass	Identifies where the optical channel is dropped and reinserted when it is not terminated on a TXP or MXP card (optical bypass). If “none” appears in the Op Bypass column, no optical bypass is defined for the optical channel.
DWDM Interface Type	Identifies the DWDM interface type that is used for the optical channel: <ul style="list-style-type: none"> • Transponder indicates that an MSTP transponder, an MSTP muxponder, or a DWDM pluggable port module is used for the optical channel. • Line Card indicates that an ITU line card is used for the optical channel.
DWDM Card Type	Identifies the type of transponder or line card used for the optical channel.

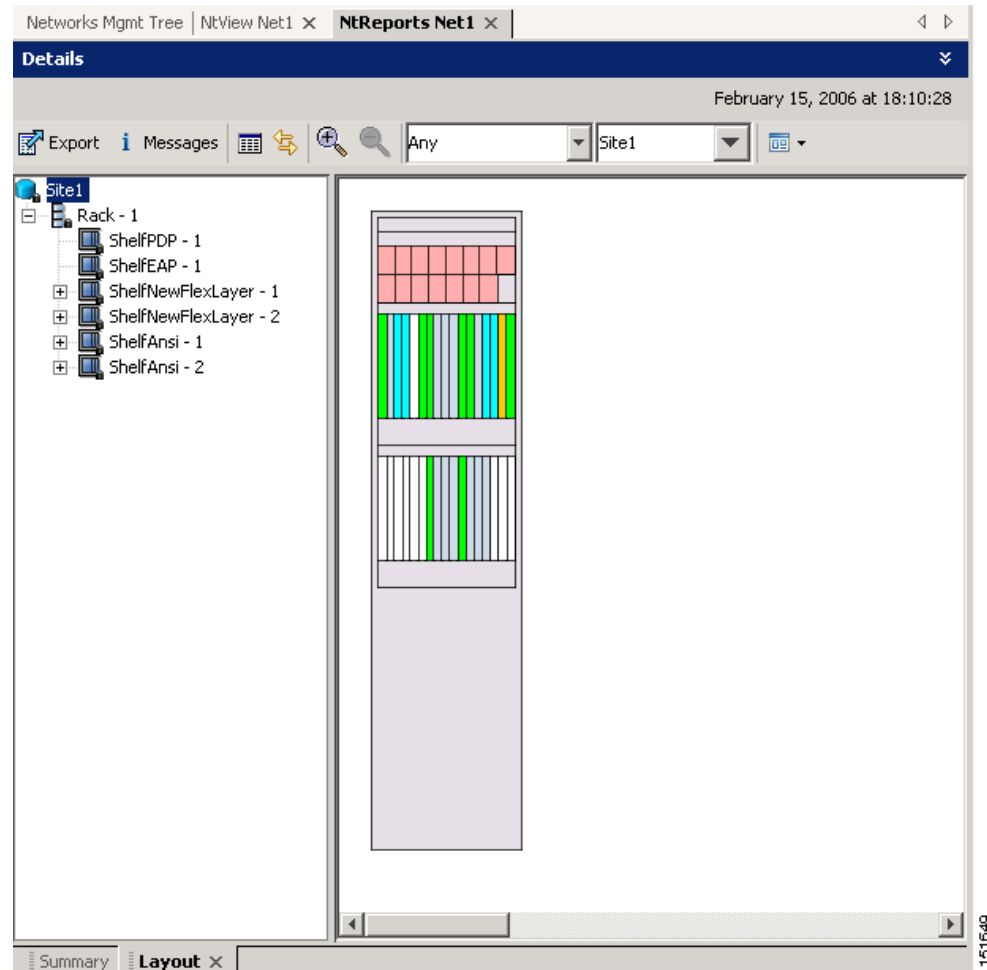
Step 6 To close the Traffic Matrix report, click the **X** in the upper right corner of the tab.

2.5.6 Displaying the Layout

Use the following procedure to view a graphical representation of each site in an analyzed network:

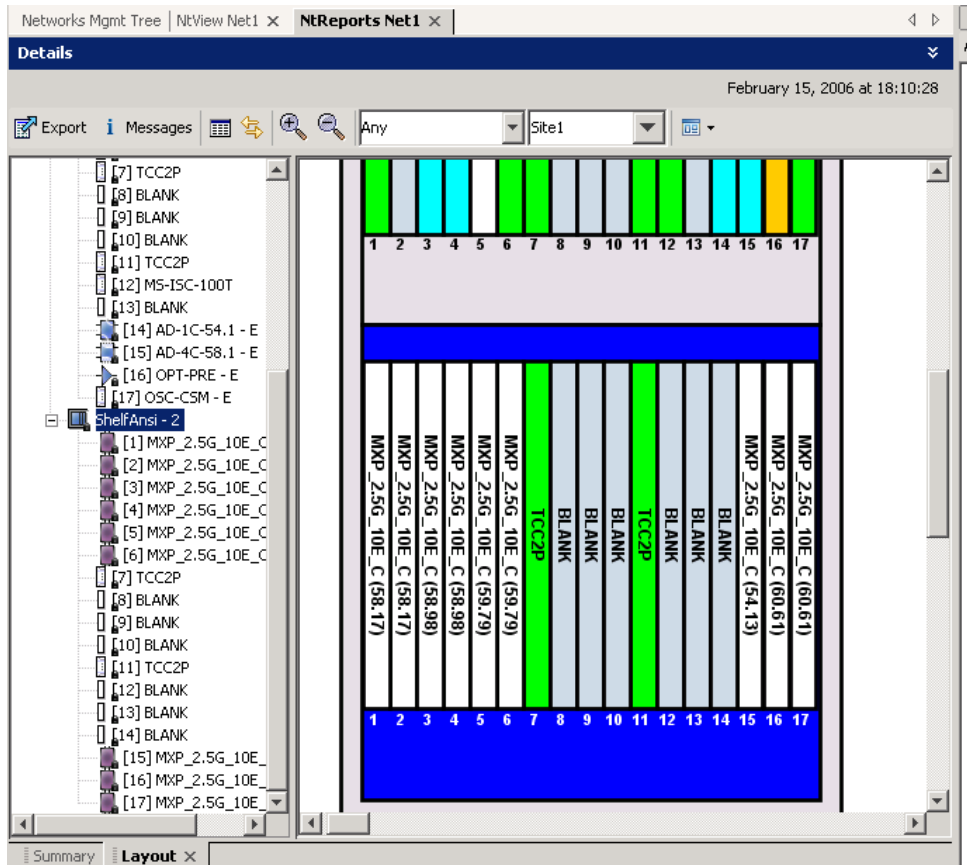
- Step 1** Complete one of the following:
- To view the Layout report for a network, click the **Networks Mgmt Tree** tab and click the network.
 - To view the Layout report for a site, click the **NtView Net#** tab and click the site.
- Step 2** In the Tasks Pane, click **Layout**. The Layout tab appears ([Figure 2-28](#)).

Figure 2-28 Layout Report (Rack View)



- Step 3** From the **Site** drop-down list, choose the site in the network to display in the layout report.
- Step 4** In the tree view on the left of the tab, right-click a rack and choose **Expand** to view a list of all shelves and cards in the rack.
- Step 5** Click the desired rack or shelf to view it in the layout graphic. [Figure 2-29](#) displays the shelf view.

Figure 2-29 Layout Report (Shelf View)



Step 6 To view details about a card, double-click the card. The Details dialog box opens with client information:

- Label—Displays the name of the card.
- Product ID—Displays the product ID of the card.
- Service Category—Future use.
- Description—Provides a brief description of the card functionality.
- Price—Lists the price for the card based on the price list selected during project creation.
- ITU Channel—Identifies the ITU channel wavelength for the card.

Click **Close** to close the Details dialog box.

Step 7 To filter the layout display, choose one of the following from the drop-down list:

- Any—Displays all cards for both the present and forecast traffic demand.
- Present—Displays cards for only the present traffic demand.
- Locked & Unlocked—Highlights the locked and unlocked cards in the layout.
- Alarmed—Highlights the alarmed cards in the layout.

Step 8 After network analysis, all items are in locked mode. To unlock cards so that Cisco MetroPlanner can rearrange the layout to optimize slot usage during network analysis, right-click locked card in the rack tree and choose **Unlock**.

- Step 9** To export the graphical representation of the layout in JPEG format, click **Export**. In the Layout export dialog box, type the name of the file and navigate to the desired folder. Click **Save**.
- Step 10** To zoom the layout graphic in or out, click the Zoom In and Zoom Out icons. For more information about the Cisco MetroPlanner icons, see [Appendix A, “GUI Information and Shortcuts.”](#)
- Step 11** To close the Layout report, click the **X** in the upper right corner of the tab.

2.5.7 Viewing the Link Availability Report

Cisco MetroPlanner determines link availability based on circuit failure rate and time to repair. Use the following procedure to view the Link Availability report:

- Step 1** Complete one of the following:
- To view the Link Availability report for a network, click the **Networks Mgmt Tree** tab and click the network.
 - To view the Link Availability report for a site, click the **NtView Net#** tab and click the site.
- Step 2** In the Tasks Pane, click **Link Availability**. The Link Availability tab appears.
- Step 3** Click **New Query** to open the Query Dialog ([Figure 2-26 on page 2-44](#)). The Query Dialog allows you to filter the optical results using a variety of parameters and templates.
- Step 4** To perform a query using individual parameters, select the desired parameters from the drop-down lists in the Query Definition area. The selected parameters appear in the Query Preview area at the bottom of the screen. [Table 2-15](#) describes the fields in the Query Dialog.

Table 2-15 Query Dialog Fields

Column Label	Description
Group	Allows you to filter the report to include only the data in the selected group. You can also view groups in the Project Explorer view under the network folder.
Demand	Allows you to filter the report to include only the data in the selected demand. The demand field is available only when you select a specific traffic group.
DWDM Card Type	Allows you to filter the report to include only the data in the selected DWDM card type.
Source	Allows you to filter the report to include only the results of incoming/outgoing services to or from a specific source site.
Destination	Allows you to filter the report to include only the results of incoming/outgoing services to or from a specific destination site.
Wavelength	Allows you to filter the report to include only services using the specified wavelength.
Alarm	Allows you to filter the report to include only services flagged with a green, yellow, orange, or red indicator.
P/F	Allows you to filter the report to include only present services, only forecast services, or both.
Virtual	Allows you to filter the report to include or exclude virtual channels in the Optical Results Table.

Step 5 Choose one of the following, as needed:

- Click **Run Query**. The window closes, and the query results appear in the Link Availability tab (Figure 2-30). The parameters of the query appear in the horizontal area just below the button bar.
- Click **Reset Query** to clear your selections in the Query Dialog.
- Click **Close** to close the window without running a query.

Figure 2-30 Link Availability Report

Group	Serv. Circuit	P/F	DWDM Card Type	Protection	Cl. Serv. Type	Source	Destination ...	L. A. (%)
P-Ring 1	Site1-Site2	P/F	TXP_MR_10E_y - w/EFEC	P-Ring	10GE LAN PHY	Site1	Site2	0.99999
P-Ring 1	Site2-Site3	P/F	TXP_MR_10E_y - w/EFEC	P-Ring	10GE LAN PHY	Site2	Site3	0.99999
P-Ring 1	Site3-Site1	P/F	TXP_MR_10E_y - w/EFEC	P-Ring	10GE LAN PHY	Site3	Site1	0.99999

Each row in the tab shows the performance of one optical path. Table 2-16 describes the information in the columns.

Table 2-16 Link Availability Tab Columns

Column Label	Description
Group	Categorizes each demand type (Point-to-Point, P-ring, and ROADM). Click the plus (+) sign by a demand type to expand and show the optical channels.
Serv. Circuit	Displays the optical channel label; for example, Site1-Site2.
P/F	Identifies whether the channel is present and forecast (P/F) or forecast (F).
DWDM Card Type	Identifies the type of transponder or line card used for the optical channel.
Protection	Displays the protection type of the demand; for example, P-ring or Y-cable.
Cl. Serv. Type	Displays the client service type of the demand; for example, OC-48.
Source	Displays the site name for the optical channel source.
Destination	Displays the site name for the optical channel destination.
L.A. (% Complete)	Displays the link availability percentage. Link availability is calculated based on the failure rate and time to repair.

Step 6 To close the Link Availability report, click the **X** in the upper right corner of the tab.

2.5.8 Viewing Optical Results

Use the following procedure to view the optical results of the network that you created and analyzed:

- Step 1** Complete one of the following:
- To view the Optical Results report for a network, click the **Networks Mgmt Tree** tab and click the network.
 - To view the Optical Results report for a site, click the **NtView Net#** tab and click the site.
- Step 2** In the Tasks Pane, click **Optical Results**. The Optical Results tab appears.
- Step 3** Click **New Query** to open the Query Dialog (Figure 2-26 on page 2-44). The Query Dialog allows you to filter the optical results using a variety of parameters and templates.
- Step 4** To perform a query using individual parameters, select the desired parameters from the drop-down lists in the Query Definition area. The selected parameters appear in the Query Preview area at the bottom of the screen. Table 2-17 describes the fields in the Query Dialog.

Table 2-17 Query Dialog Fields

Column Label	Description
Group	Allows you to filter the report to include only the data in the selected group. You can also view groups in the Project Explorer view under the network folder.
Demand	Allows you to filter the report to include only the data in the selected demand. The demand field is available only when you select a specific traffic group.
DWDM Card Type	Allows you to filter the report to include only the data in the selected DWDM card type.
Source	Allows you to filter the report to include only the results of incoming/outgoing services to or from a specific source site.
Destination	Allows you to filter the report to include only the results of incoming/outgoing services to or from a specific destination site.
Wavelength	Allows you to filter the report to include only services using the specified wavelength.
Alarm	Allows you to filter the report to include only services flagged with a green, yellow, orange, or red indicator.
P/F	Allows you to filter the report to include only present services, only forecast services, or both.
Virtual	Allows you to filter the report to include or exclude virtual channels in the Optical Results Table.

- Step 5** Choose one of the following, as needed:
- Click **Run Query**. The window closes, and the query results appear in the Optical Results tab (Figure 2-31). The parameters of the query appear in the horizontal area just below the button bar.
 - Click **Reset Query** to clear your selections in the Query Dialog.
 - Click **Close** to close the window without running a query.

Figure 2-31 Optical Results Tab

Name	Group	Protect	SOL	EOL	SE	P/F	Source	Destination	Wavelength	Tx Type	Span(km)	BER target
OCB Trail - 1	P-Ring_1	P-Ring	●	●	●	P/F	Site1 - E	Site2	54.13	MXP_2.5G_10E_C		
OCB-1			●	●	●	P/F	Site2 - W	Site1				
OCB-2			●	●	●	P/F						
Circuit	P-Ring_1	P-Ring							54.13	MXP_2.5G_10E_C		
OCB Trail - 2	P-Ring_1	P-Ring	●	●	●	P/F	Site2 - E	Site3				
OCB-1			●	●	●	P/F	Site3 - W	Site2				
OCB-2			●	●	●	P/F						
Circuit	P-Ring_1	P-Ring							54.13	MXP_2.5G_10E_C		
OCB Trail - 3	P-Ring_1	P-Ring	●	●	●	P/F	Site3 - E	Site1				
OCB-1			●	●	●	P/F	Site1 - W	Site3				
OCB-2			●	●	●	P/F						
Circuit	P-Ring_1	P-Ring							58.17	MXP_2.5G_10E_C		
OCB Trail - 4	Site1-Site3	Y-Cable	●	●	●	P/F	Site1 - E	Site3				
OCB-1			●	●	●	P/F	Site3 - W	Site1				
OCB-2			●	●	●	P/F						
Circuit	Site1-Site3	Y-Cable							58.17	MXP_2.5G_10E_C		
OCB Trail - 5	Site1-Site3	Y-Cable	●	●	●	P/F	Site3 - E	Site1				
OCB-1			●	●	●	P/F	Site1 - W	Site3				
OCB-2			●	●	●	P/F						
Circuit	Site1-Site3	Y-Cable										

Each row in the tab shows the performance of one optical path. Table 2-18 describes the information in the columns.

Table 2-18 Optical Results Tab Columns

Column Label	Description
Name	Displays the identification number automatically given to each path in the order that the channels were entered into the design.
Group	Identifies the demand group for the optical channel.
Protect	Displays the protection type of the channel. For a protected channel, both paths are shown. The path leaving the east side of the source is shown first.
SOL	Displays the results of the start of life analysis. The indicator shows the optical performance for the path. Green indicates success, yellow indicates success with a marginal failure risk (between 0 and 16 percent), orange indicates that the channel has a higher risk of failure (between 16 and 50 percent), and red indicates failure.
EOL	Displays the end of life analysis. The indicator shows the optical performance for the path at the end of the fiber's life. Green indicates success, yellow indicates success with a marginal failure risk (between 0 and 16 percent), orange indicates that the channel has a higher risk of failure (between 16 and 50 percent), and red indicates failure.
SE	Displays an indicator to identify if a system error or untested configuration prevents the connection from working properly. Green indicates no errors and red indicates failure.
Wavelength	Displays the assigned wavelength of the optical path.
P/F	Displays the present/forecast services indication.
Source	Displays the name of the source site and source interface; for example, Site 1-E.
Destination	Displays the name of the destination site.
Span (km)	Displays the total span length (source -> destination) for this path in kilometers.
Tx Type	Displays the type of transceiver.

Table 2-18 Optical Results Tab Columns (continued)

Column Label	Description
BER target	Displays the bit error rate (BER) target for this channel based on the capability of the channel's optical interface. It is 1.0E-15 for the interfaces using forward error correction (FEC) and 1.0E-12 for interfaces without FEC.
SOL OSNR (dB)	Displays the start of life average optical signal-to-noise ratio (OSNR) value at the receiver. OSNR refers to the selected resolution bandwidth (RBW) bandwidth.
EOL OSNR (dB)	Displays the end of life average OSNR value at the receiver. OSNR refers to the selected RBW bandwidth.
SOL OSNR Margin (dB)	Displays the SOL OSNR margin calculation, which is the difference between the OSNR value at a certain power of the working point of the receiver client and the working area boundary.
EOL OSNR Margin (dB)	Displays the EOL OSNR margin calculation, which is the difference between the OSNR value at a certain power of the working point of the receiver client and the working area boundary.
SOL RX (dBm)	Displays the SOL received average power at the destination site in dBm.
EOL RX (dBm)	Displays the EOL received average power at the destination site in dBm.
SOL Power margin (dB)	Displays the SOL power budget margin at the receiver in decibels. It is defined as the offset between the receiver working point and the BER curve with margin. A positive value indicates no power problems.
EOL Power margin (dB)	Displays the EOL power budget margin at the receiver in decibels. It is defined as the offset between the receiver working point and the BER curve with margin. A positive value indicates no power problems.
SOL Overload (dB)	Displays the SOL overload margin at the receiver in decibels. A positive value indicates no overload problems.
EOL Overload (dB)	Displays the EOL overload margin at the receiver in decibels. A positive value indicates no overload problems.
RX atten	Displays the attenuation at the input of the receiver.
PMD (ps)	Displays the calculated total PMD for each circuit. If the overall PMD for the link overcomes the maximum allowed, the PMD value is colored red. The maximum allowed value depends on the client interface. For these special cases, the network must be manually resolved by contacting a Cisco optical sales engineer.
Latency	Displays the latency time for the current circuit.
Chr. Disp. check	Displays the status of the chromatic dispersion check. Green indicates that the dispersion check passed. Red indicates that the dispersion check failed.

Step 6 To close the Optical Results report, click the **X** in the upper right corner of the tab.

2.5.9 Viewing Wavelength Routing

Use the following procedure to view the wavelength routing map for an analyzed network:

- Step 1** Click the **Networks Mgmt Tree** tab, and click the analyzed network.
- Step 2** In the Tasks Pane, click **Wavelength Routing**. The Wavelength Routing tab appears (Figure 2-32).

Figure 2-32 Wavelength Routing Tab

wl	Site1		Site2		Site3		Site1	
	E	Couple1	W	E	W	E	Couple1	W
42.94								
43.73								
44.53								
46.12								
46.92								
47.72								
48.51								
50.12								
50.92								
51.72								
52.52								
54.13								
54.94								
55.75								
56.55								
58.17	█	█	█	█	█	█	█	█
58.98	█	█	█	█	█	█	█	█
59.79	█	█	█	█	█	█	█	█
60.61								

- Step 3** Choose one of the following from the drop-down list: **Any** (to view both forecast and present routing), **Present** (to view only the present routing), or **Forecast** (to view only the forecast routing).

Table 2-19 describes the information in the columns.

Table 2-19 Wavelength Routing Tab Columns

Column Label	Description
wl	Lists the wavelengths supported by the platform.
Site #	Represents a site in the network.
Duct #	Represents a duct in the network.
W	Represents the west side of a site.
E	Represents the east side of a site.
Couple	Represents a pair of fibers at a site.

- Step 4** To export the graphical representation of the layout in JPEG format, click **Export**. In the Wavelength Routing export dialog box, type the name of the file and navigate to the desired folder. Click **Save**.
- Step 5** To close the Wavelength Routing report, click the **X** in the upper right corner of the window.

2.5.10 Viewing Report Differences

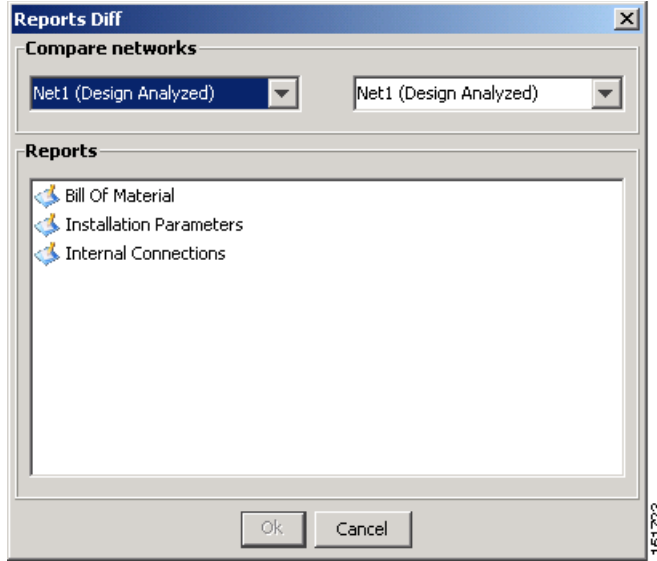
You can compare the BoM, Internal Connections, and Installation Parameters reports for two networks. This is useful to see the differences between a baseline network and an Install or Upgrade network.

- The BoM Diff report lists the units that were added and/or removed from the BoM.
- The Internal Connection Diff report lists changed connections. If at least one of the two end points of an internal connection is different, Cisco MetroPlanner reports that the internal connection has changed. The report shows all internal connections that were present in the baseline network but are not present in the final network, and all internal connections not present in the baseline network but present in the final network.
- The Installation Parameters Diff report lists changed parameters between the baseline network and the final network.

Use the following procedure to compare networks:

- Step 1** Click the Reports Diff icon. For more information about Cisco MetroPlanner icons, see [Appendix A, “GUI Information and Shortcuts.”](#) The Reports Diff dialog box appears. [Figure 2-33](#) shows the Reports Diff dialog box as it appears when at least two analyzed networks exist in a project.

Figure 2-33 Reports Diff Dialog Box



- Step 2** In the Compare networks area, choose the baseline network from the drop-down list on the left. Choose the network to compare from the drop-down list on the right.
- Step 3** Click the report you would like to view. If you chose one non-analyzed network, you can view only the Bill of Material differences report.
- Bill of Material—(Figure 2-34 on page 2-57) For a description of the columns, see Table 2-20 on page 2-58.
 - Installation Parameters—(Figure 2-35 on page 2-59) For a description of the columns, see Table 2-21 on page 2-59.
 - Internal Connections—(Figure 2-36 on page 2-60) For a description of the columns, see Table 2-22 on page 2-61.
- Step 4** Click **Ok**.

Figure 2-34 shows the BoM Diff report.

Figure 2-34 BOM Diff Report

The screenshot shows the Cisco MetroPlanner interface with a 'BoM Diff Report Net1-Net6' window. The window is split into two panes for 'Net1' and 'Net6'. Each pane displays summary statistics: 'BoM + Spare total discounted', 'BoM total discounted', and 'Spare total discounted'. Below these panes is a table titled 'BoM Diff Report Net1-Net6' with columns: Name, PID, Quantity, Unit Price, Total Price, and Disc. The table lists various components with their respective quantities and prices. The total price for Net1 is 840,845.00 and for Net6 is 823,100.00.

Name	PID	Quantity	Unit Price	Total Price	Disc
OADM	=				
ONS 15454 OADM - 1 Chn - 100GHz - 1558.17	15454-AD-1C-58.1	1	20,000.00	20,000.00	20,000.00
ONS 15454 OADM - 2 Chs - 100GHz - 1554.13 - 1554.94	15454-AD-2C-54.1	1	30,000.00	30,000.00	30,000.00
ONS 15454 OADM - 4 Chs - 100GHz - 58.17-58.98-59.79-60.61	15454-AD-4C-58.1	1	40,000.00	40,000.00	40,000.00
Transponder	=	5		157,000.00	157,000.00
PPM	=	5		15,695.00	15,695.00
Mech Unit	≠	22/18		11,715.00/7,845.00	11,715.00
Common Unit	≠	6/4		38,000.00/29,000.00	38,000.00
SW License	≠	6/3		7,980.00/3,990.00	7,980.00
Opt Common Unit	=	2		18,000.00	18,000.00
Amplifier	=				
ONS 15454 Optical Pre-Amplifier Module	15454-OPT-PRE	1	22,000.00	22,000.00	22,000.00

The upper section of the BoM Diff Report tab displays the following information for each network:

- **BoM total discounted**—Displays the price for the overall network (without spare parts) for each item in the BoM. If Use global discount is checked, the total includes the discount from the Global discount percentage field.
- **Spare total discounted**—Displays the price for all of the recommended spare parts in all of the maintenance centers for the overall network. It is the sum of each spare item using the discounted price. The total appears after you check the Spare Part Report check box.
- **BoM + Spare total discounted**—Displays the sum of the BoM total discounted price and spare total discounted price.
- **Price List**—Displays the name of the price list database selected for the project.
- **Price List last update**—Displays the date that the selected price list was last updated.
- **Currency**—Displays the value of the currency used for each of the price values as specified within the selected price list database.

Table 2-20 describes the information in the BoM Diff report columns. Click a column to sort the table information by that column.

Table 2-20 BoM Diff Report Columns

Column Label	Description
Name	Displays the name of the equipment.
(Diff Summary)	Indicates a difference exists between the two network BoMs: = (equal sign)—Indicates that no difference exists between the two networks. ≠ (crossed-out equal sign)—Indicates that the item is present on both networks, but the number per network is different. 1—Indicates that this item is present in the first network but not in the second network. 2—Indicates that this item is present in the second network but not in the first network.
PID	Displays the ID string of the product.
Quantity	Displays the number of specific products in the BoM. If the networks have a different quantity, Cisco MetroPlanner displays both numbers in red in the following format: <i>first network Quantity/second network Quantity</i> .
Unit Price	Displays the price for each unit.
Total Price	Displays the total price of the products before applying the discount. If the networks have a different quantity, Cisco MetroPlanner displays both numbers in red in the following format: <i>first network Total Price/second network Total Price</i> .
Discounted Total Price	Displays the total price of the products after applying the discount. If the networks have a different quantity, Cisco MetroPlanner displays both numbers in red in the following format: <i>first network Discounted Total Price/second network Discounted Total Price</i> .

Figure 2-35 shows the Installation Parameters Diff report.

Figure 2-35 Installation Parameters Diff Report

Table 2-21 describes the columns on Installation Parameters Diff report. Click a column to sort the table information by that column.

Differences between networks appear in red and in the following format: *baseline network value/final network value*.

Table 2-21 Installation Parameters Diff Report Columns

Category	Description
Name	Displays the name of the site.
(Diff Summary)	Indicates a difference exists between the two network BoMs: = (equal sign)—Indicates that no difference exists between the two networks. ≠ (crossed-out equal sign)—Indicates that the item is present on both networks, but the number per network is different. 1—Indicates that this item is present in the first network but not in the second network. 2—Indicates that this item is present in the second network but not in the first network.
Side	Displays the node interface: T (terminal), E (east), or W (west).
Position	Displays the rack, shelf, and slot position of the card from which the patchcord originates.
Unit	Displays the name of the card.
Port #	Displays the port number from which the patchcord originates.
Port ID	Displays the port ID.
Port Label	Displays the name of the port.
Parameter	Displays the name of the parameter to be set, such as RX Power Low.
Value	Displays the name of the value to be set.

Table 2-21 Installation Parameters Diff Report Columns (continued)

Category	Description
Measurement Unit	Displays the measurement unit for the related installation parameter value, such as dBm.
Manual Set	Indicates with a Yes or No which parameters must be manually set using the CTC interface.

Figure 2-25 shows the Internal Connections Diff report.

Figure 2-36 Internal Connections Diff Report

Name	Position	Unit	Port label	Attenuator	Position	Unit	Port label	P/F
Site1								
Cable	Rack 0, 0.Slot 0	AD-2C-54.1 / AD-1...	port Label ?	...	Rack 0, 0.Slot 0	AD-1C-58.1 / AD-2...	port Label ?	P/F /...
Cable	Rack 1.ShelfAnsi 1.Slot 1	OSC-CSM	COM TX		Rack 1.ShelfAnsi 1.Slot 2	OPT-PRE	COM RX	P/F
Cable	Rack 1.ShelfAnsi 1.Slot 13	TXP_MR_2.5G-58.1	DWDM-TX		Rack 1.ShelfAnsi 1.Slot 3	AD-4C-58.1	AD_RX0	P/F
Cable	Rack 1.ShelfAnsi 1.Slot 14	MXP_MR_2.5G-58.1	DWDM-TX		Rack 1.ShelfAnsi 1.Slot 3	AD-4C-58.1	AD_RX1	P/F
Cable	Rack 1.ShelfAnsi 1.Slot 15	TXP_MR_10E_C	DWDM-TX		Rack 1.ShelfAnsi 1.Slot 4	AD-2C-54.1	AD_RX0	P/F
Cable	Rack 1.ShelfAnsi 1.Slot 16	AD-1C-58.1	AD_TX0		Rack 1.ShelfAnsi 2.Slot 1	TXP_MR_2.5G-58.1	DWDM-RX	P/F
Cable	Rack 1.ShelfAnsi 1.Slot 16	AD-1C-58.1	COM TX		Rack 1.ShelfAnsi 1.Slot 17	OSC-CSM	COM RX	P/F
Cable	Rack 1.ShelfAnsi 1.Slot 16	AD-1C-58.1	EXP TX		Rack 1.ShelfAnsi 1.Slot 4	AD-2C-54.1	EXP RX	P/F
Cable	Rack 1.ShelfAnsi 1.Slot 17	OSC-CSM	COM TX		Rack 1.ShelfAnsi 1.Slot 16	AD-1C-58.1	COM RX	P/F
Cable	Rack 1.ShelfAnsi 1.Slot 2	OPT-PRE	COM TX		Rack 1.ShelfAnsi 1.Slot 3	AD-4C-58.1	COM RX	P/F
Cable	Rack 1.ShelfAnsi 1.Slot 2	OPT-PRE	DC TX		Rack 1.ShelfAnsi 1.Slot 2	OPT-PRE	DC RX	P/F
Cable	Rack 1.ShelfAnsi 1.Slot 3	AD-4C-58.1	AD_TX0		Rack 1.ShelfAnsi 1.Slot 13	TXP_MR_2.5G-58.1	DWDM-RX	P/F
Cable	Rack 1.ShelfAnsi 1.Slot 3	AD-4C-58.1	AD_TX1		Rack 1.ShelfAnsi 1.Slot 14	MXP_MR_2.5G-58.1	DWDM-RX	P/F
Cable	Rack 1.ShelfAnsi 1.Slot 3	AD-4C-58.1	AD_TX2		Rack 1.ShelfAnsi 1.Slot 5	TXP_MR_10E_C	DWDM-RX	P/F
Cable	Rack 1.ShelfAnsi 1.Slot 3	AD-4C-58.1	AD_TX3		Rack 1.ShelfAnsi 2.Slot 2	TXP_MR_10E_C	DWDM-RX	P/F
Cable	Rack 1.ShelfAnsi 1.Slot 3	AD-4C-58.1	COM TX		Rack 1.ShelfAnsi 1.Slot 1	OSC-CSM	COM RX	P/F
Cable	Rack 1.ShelfAnsi 1.Slot 3	AD-4C-58.1	EXP TX		Rack 1.ShelfAnsi 1.Slot 4	AD-2C-54.1	COM RX	P/F
Cable	Rack 1.ShelfAnsi 1.Slot 4	AD-2C-54.1	AD_TX0		Rack 1.ShelfAnsi 1.Slot 15	TXP_MR_10E_C	DWDM-RX	P/F
Cable	Rack 1.ShelfAnsi 1.Slot 4	AD-2C-54.1	AD_TX1		Rack 1.ShelfAnsi 2.Slot 3	TXP_MR_10E_C	DWDM-RX	P/F

Table 2-22 lists the columns in the Internal Connections Diff report and their descriptions. Click a column to sort the table information by that column.

Differences between networks appear in red and in the following format: *baseline network value/final network value*.

Table 2-22 Internal Connections Tab Columns

Column Name	Description
Name	Displays the name of the site. On the SW provisioning view subtab, this column indicates whether the connection should be manually set using the CTC interface or removed.
(Diff Summary)	Indicates a difference exists between the two network BoMs: = (equal sign)—Indicates that no difference exists between the two networks. ≠ (crossed-out equal sign)—Indicates that the item is present on both networks, but the number per network is different. 1—Indicates that this item is present in the first network but not in the second network. 2—Indicates that this item is present in the second network but not in the first network.
Position	Displays the rack, shelf, and slot position of the card from which the patchcord originates.
Unit	Displays the name of the card.
Port label	Displays the name of the port.
Attenuator	When indicated, this is the product ID of the bulk attenuator to be equipped on this connection. It also reports when an internal attenuator must be placed between the DC-TX and DC-RX ports on the preamplifier (when no DCU is equipped).
Position	Displays the rack, shelf, and slot position of the card where the patchcord terminates.
Unit	Displays the name of the card.
Port Label	Displays the name of the port.
P/F	Displays whether the connection relates to a present (P/F) or forecast (F) circuit.

2.6 Editing a Project

Cisco MetroPlanner allows you to edit the a project either before or after network analysis. Error messages that occur during network analysis often cannot be resolved until you edit one or more network components.

To complete the procedures in this section, you must have a project open and the network(s) loaded. See the [“2.1.1 Opening a Project”](#) section on page 2-3 and the [“2.1.2 Loading and Unloading Networks”](#) section on page 2-3.

2.6.1 Editing Project Parameters

Use the following procedure to edit project parameters:

-
- Step 1** Click **Project** in the Project Explorer.
- Step 2** In the Properties pane, complete the following as needed:
- Customer—Type the name of the customer (128 character maximum) requiring this network design.
 - Created by—Type the user name (128 character maximum).
 - Units—Choose the span measurement unit: **Km** (kilometers) or **Miles**.
 - Price List—Choose the price database from the drop-down list.
 - Layout—Choose **ANSI** (the North American standard) or **ETSI** (the international standard) from the drop-down list to indicate the platform type. ANSI networks will not allow you to define SDH (ETSI) service demands. ETSI networks will not allow you to define SONET (ANSI) service demands.
-

2.6.2 Editing Network Parameters

Use the following procedure to edit network parameters:

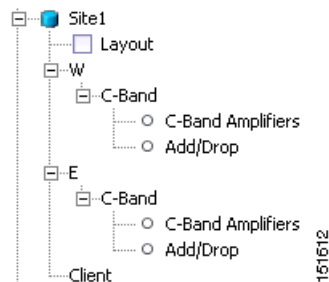
-
- Step 1** Click a network in the Project Explorer or Networks Mgmt Tree.
- Step 2** In the Properties pane, complete the following as needed:
- Name—Type the network name (128 character maximum).
 - Position—Type the object location in pixels.
 - Created by—Type the user name (128 character maximum).
 - Status—Displays the state of the network (Design, Design-Analyzed, Install, etc.).
 - Use Bundles—Check to use the Multishelf Management Integrated Kit bundle when generating the BoM instead of the single items.
 - Use Maintenance Center—Check to determine the spare parts required by the network. If the network is in the Upgrade state, the parts required to support the implemented services and the newly added present services are included. To generate a spare parts report, you must associate the sites in a network with a maintenance center before network analysis.
 - Use Global Discount—Check to use the global discount for the entire network. The global discount is applied to all components in the BoM.
 - Global Discount—Enter a new global discount in the form of a percentage.
 - Include SW Licenses—Check to include software licenses in the BoM.
 - Include Paper Documentation—Check to include paper documentation in the BoM.
 - Include CD Documentation—Check to include CD documentation in the BoM.
 - Hide Bom/price discount—Check to hide the global discount in the Unit Price column of the BoM.
 - Dimension—Type the network size in pixels.
 - Background color—Click to choose a color for the network background.

- Background image—Displays the JPEG or GIF filename used as a background, if any. To choose a JPEG or GIF file as a background graphic for the network, click the down arrow and navigate to the desired directory.

2.6.3 Editing Site Parameters

Editing the site parameters allows you to make changes to the current site configuration. A site folder in the Project Explorer displays the interface node information. Figure 2-37 shows a site in the Project Explorer before network analysis.

Figure 2-37 Site in the Project Explorer



A site folder for an analyzed network design also contains the following items, many of which you can edit:

- E, W, T—For a Line or Line+ site, two interface nodes appear in the Project Explorer under the Site folder, labeled W (West) and E (East). For a Terminal or Terminal+ site, only one interface node (T) appears.
- C-Band or L-Band—Displays the supported band for the side (E, W, or T interface).
- Amplifiers—Lists the amplifiers and all related cards for each band and for each side (E, W, or T interface).
- Add/Drop—Displays all of the add/drop and related cards for the band and side (E, W, or T interface).
- Site Type Parameters—When selected, shows the site functionality and type in the Properties pane.
- Band Parameters—When selected, shows the output power in the Properties pane.
- Client—Lists the client cards.

Use the following procedure to edit site parameters:

- Step 1** In the Project Explorer, right-click the network folder and choose **Expand** from the shortcut menu.
- Step 2** Click the desired Site folder. The site parameters appear in the Properties pane.
- Step 3** Complete the following to modify the site parameters in the Properties pane, as needed:
 - Label—(Display only) Displays the site label, such as Site 1.
 - Name—Enter the desired site name.
 - Position—Enter the desired site pixel position; for example, an entry of 0,0 positions the Site icon in the upper left corner of the NtView Net# tab.

- Topology—Choose the topology type from the drop-down list:
 - Line—Two pairs of fibers are terminated at the node.
 - Terminal—A single pair of fibers is terminated at the node.
 - Line+—Two pairs of fibers are terminated at the node but the number of fibers can be increased if an MMU card (topology upgrade) is installed.
 - Terminal+—A single pair of fibers is terminated at the node but the number of fibers can be increased in if an MMU card (topology upgrade) is installed.
- Maintenance Center—Choose the name of the maintenance center from the drop-down list. To create a maintenance center, see the “[2.6.5 Creating a Maintenance Center](#)” section on page 2-67.
- IP Address—Type the IP address of the node.
- Shelf Config—Choose the shelf configuration type from the drop-down list:
 - Multi Shelf Integrated Switch—A multishelf node configuration using an Ethernet Adapter Panel (EAP).
 - Multi Shelf External Switch—A multishelf node configuration using a Cisco Catalyst 2950.
 - Individual Shelf—A node in single-shelf mode.
- Node Protection—Choose the node protection type from the drop-down list: Same Shelf or Separated Shelves.
- DCC Chain—When checked, indicates that a TXP(P)_MR_2.5G card is in Slot 12 on each shelf at each site.
- Osmine Layout Compliance—When checked, indicates that all the nodes in the network design have transponder and line cards compliant with OSMINE.
- Hybrid Layout—When checked, indicates that all the nodes are configured as hybrid MSTP/MSPP nodes.
- Max Shelf Num—Choose the maximum number (from 1 to 4) of ANSI or ETSI shelves (that equip optical cards or transponder/muxponder [TXP/MXP] cards) that can be placed in each rack in the site when generating the site layout.
- Functionality—Choose the site functionality from the drop-down list. [Table 2-23](#) summarizes the site design rules. The site icon changes depending on the functionality. For a description of the site icons, see [Appendix A, “GUI Information and Shortcuts.”](#)
 - Auto—Allows the highest degree of flexibility in creating the network. Cisco MetroPlanner generates a design for the site with the lowest possible cost given the other constraints.
 - Pass Through—Indicates that no equipment will be located at this site.
 - Line amplifier—Prevents any add/drop traffic at this site.
 - OSC site—Indicates that site is designated for network communication, providing the possibility to access the optical service channel (OSC) for management of the MSTP network. By default, no amplifiers are included in this site. However, if Cisco MetroPlanner determines that an amplifier is required in the network, it can automatically place it at this location. Cisco MetroPlanner allows you to set (force) preamplifier and booster amplifiers for each direction on a OSC Site node.
 - Add/Drop—Indicates that this site has add/drop capability. Only point-to-point and P-ring circuits can be added/dropped at this site.
 - Hub—Indicates that this site is equipped with filters for adding and dropping all the channels (on both West and East sides). All express paths are open in hub configurations.

- Gain equalizer—Indicates that this site uses WSS cards to control the generated tilt and extend unregenerated distances. The site is realized as an ROADM site without demultiplexer cards.
- R-OADM—Indicates that this site supports Any-to-Any and also Fixed (point-to-point and P-ring) traffic types.
- Type—Choose the site type from the drop-down list (see [Table 2-23](#)):
 - Auto—Allows the highest degree of flexibility in creating the network. Cisco MetroPlanner generates a design for the site with the lowest possible cost given the other set of constraints.
 - Glass Through—Indicates a low-priority amplification site.
 - Line—Indicates a high-priority amplification site.
 - OADM—Indicates that it is a site with add/drop channels using discrete channel filters (1, 2, 4-ch 1, 4-band).
 - WSS—Indicates that it is a site equipped with 32DMX or 32DMX-O.
 - Mux/Demux—Indicates that this is a full multiplexer/demultiplexer (FMD) site that adds and drops all 32MUX-O and 32DMX-O channels on both sides.
- Anti ASE—Choose **Yes** to configure the site so that all the express channels on the site are optically dropped and reinserted. In addition, all the patchcords between the West and East sections are removed. Choose **Auto** to allow Cisco MetroPlanner to decide if the site should be configured as anti-amplified spontaneous emissions (Anti-ASE). See [Table 2-23](#) for a summary of the site design rules.

Table 2-23 Site Design Rules

Topology	Functionality	Type	Card Options	C-Band 32/16 Ch. 100 GHz	C-Band 8 Ch. 100 GHz	C-Band 64 Ch. 50 GHz	L-Band 32 Ch. 100 GHz
Line	Pass Through	—	—	Yes	Yes	Yes	Yes
	Line amplifier	Line amplifier	In line at 1	Yes	Yes	Yes	Yes
		Glass Through	—	Yes	Yes	Yes	Yes
	OSC Site	—	—	Yes	Yes	Yes	Yes
	Add/Drop	OADM (Anti-ASE)	OADM cards	Yes	Yes	No	No
		Mux/Demux	—	Yes	Yes	No	No
	Hub	Mux/Demux	—	Yes	Yes	No	No
		WSS	32DMX-O	Yes	Yes	Yes	No
			32DMX	Yes	Yes	Yes	Yes
	Gain equalizer	WSS	32DMX	Yes	No	Yes	Yes
ROADM	WSS	32DMX-O	Yes	No	Yes	No	
		32DMX	Yes	No	Yes	Yes	
Line+	ROADM	WSS	32DMX-O	Yes	No	No	No
			32DMX	Yes	No	No	Yes
	Hub	WSS	32DMX-O	Yes	No	No	No
			32DMX	Yes	No	No	Yes

Table 2-23 Site Design Rules (continued)

Topology	Functionality	Type	Card Options	C-Band 32/16 Ch. 100 GHz	C-Band 8 Ch. 100 GHz	C-Band 64 Ch. 50 GHz	L-Band 32 Ch. 100 GHz
Terminal	Add/Drop	OADM-xc (Anti-ASE)	OADM cards	Yes	Yes	No	No
		Mux/Demux	—	Yes	Yes	No	No
	ROADM	WSS	32DMX-O	Yes	Yes	Yes	No
32DMX			Yes	Yes	Yes	Yes	
Terminal+	ROADM	WSS	32DMX-O	Yes	No	No	No
			32DMX	Yes	No	No	Yes

- Step 4** To modify the band parameters, click **C-Band** or **L-Band** in the Project Explorer for the desired site interface. In the Properties pane, enter the desired Output power.
- Step 5** To modify amplifier parameters, click **C-Band Amplifiers** or **L-Band Amplifiers** in the Project Explorer for the desired site interface.
- a. In the Properties pane From Fibre area, complete the following as needed:
 - PRE—Choose the desired preamplifier from the drop-down list (**None**, **Auto**, or **OPT-PRE**).
 - DCU 1/2—Choose the desired DCU from the drop-down lists.
 - Attenuator—Choose the desired attenuator from the drop-down list.
 - Output power—Enter the desired output power.
 - Tilt—Enter the desired tilt value.
 - b. In the Properties pane To Fibre area, complete the following as needed:
 - BST—Choose the desired booster from the drop-down list (**None**, **Auto**, **OPT-BST**, or **OPT-BST-E**).
 - Output power—Enter the desired output power.
 - Tilt—Enter the desired tilt value.
 - c. In the Properties pane General area, choose the OSC from the drop-down list (**OSC-CSM** or **OSCM**).
- Step 6** To modify OADM parameters, click **Add/Drop** in the Project Explorer for the desired site interface. In the Properties pane, complete the following as needed:
- In the Line/OADM area, choose the desired attenuator from the drop-down list.
 - In the Mux/Demux WSS area, complete the following as needed:
 - Patch Panel—Choose the patch panel from this drop-down list.
 - Demux—Choose the demultiplexer from this drop-down list.
 - Mux—Choose the multiplexer from this drop-down list.

2.6.4 Deleting a Site

Use the following procedure to delete an existing site from the network design:

-
- Step 1** Delete any traffic demands used by the site. See the “[2.6.9 Deleting a Traffic Demand](#)” section on [page 2-71](#).
- Step 2** Right-click the site in the NtView Net# tab and choose **Delete** from the shortcut menu. As an alternative, you can click **Delete** in the Tasks Pane. A confirmation message appears, asking you to confirm the deletion of the site.
- Step 3** Click **Yes** to delete the site.
-

2.6.5 Creating a Maintenance Center

Use the following procedure to add maintenance centers that will supply your network with spare parts in the event of a failure. This feature helps your customer determine the quantity of spares that should be purchased, depending on the number of maintenance centers and their availability. Maintenance centers appear in the Maintenance Center folder under a site in the Project Explorer.

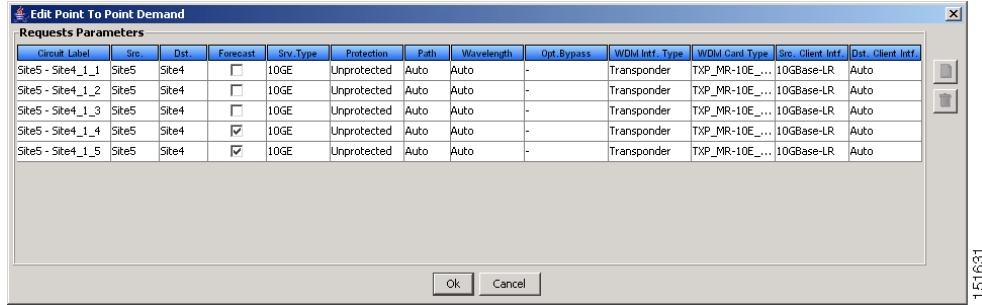
-
- Step 1** In the Project Explorer, right-click the network folder and choose **Expand** from the shortcut menu.
- Step 2** Scroll down the Project Explorer, right-click the **Maintenance Center** folder, and choose **New Maintenance Center** from the shortcut menu.
- Step 3** Highlight the new maintenance center in the Project Explorer.
- Step 4** In the Properties pane, complete the following as needed:
- Availability percentage—Choose the percentage that represents the required confidence level for finding needed spare parts in the maintenance center: **50**, **75**, **95**, or **99** percent.
 - Mean repair time—Enter the time (including transportation) required to restock the part in the maintenance center.
- Step 5** To associate a maintenance center with a site, see the “[2.6.3 Editing Site Parameters](#)” section on [page 2-63](#).
-

2.6.6 Editing a Point-to-Point Demand

Use the following procedure to edit a point-to-point demand:

-
- Step 1** In the Project Explorer, right-click the network folder and choose **Expand** from the shortcut menu.
- Step 2** In the Project Explorer, right-click the point-to-point demand and choose **Edit** from the shortcut menu. The Edit Point to Point Demand dialog box appears ([Figure 2-38](#)).

Figure 2-38 Edit Point to Point Demand Dialog Box



- Step 3** To modify the information for each channel, complete the following as needed:
- **Forecast**—Check to change a present channel to a forecast channels.
 - **Srv. Type**—Choose the desired service type from the drop-down list. Changing the service type for one channel automatically changes the service type for all channels.
 - **Protection**—Choose the desired protection type from the drop-down list. Changing the protection type for one channel automatically changes the protection for all channels.
 - **Path**—Choose **W** (west-to-east) or **E** (east-to-west) from the drop-down list.
 - **Wavelength**—Choose the desired wavelength type from the drop-down list. If you choose Auto, Cisco MetroPlanner assigns wavelength to the channels with the lowest possible cost given the other constraints.
 - **Optical Bypass**—Choose the site for optical bypass from the drop-down menu.
 - **WDM Intf. Type**—Choose the desired card interface type from the drop-down list.
 - **WDM Card Type**—Choose the desired card type from the drop-down list. The available options depend on the card interface type that is selected. Changing the card type for one channel automatically changes the card type for all channels.
 - **Src. Client Intf.**—Choose the desired source client interface from the drop-down list. The available options depend on the card type that is selected.
 - **Dst. Client Intf.**—Choose the desired destination client interface from the drop-down list. The available options depend on the card type that is selected.
- Step 4** To add a new channel, click the Create a new circuit icon on the right of the Edit Point to Point Demand dialog box. A new row appears. Repeat [Step 3](#) as needed to complete the parameters for the new channel.
- Step 5** To delete an existing channel, select the row and click the Remove the selected circuit icon on the right of the Edit Point to Point Demand dialog box.
- Step 6** Click **Ok** to save the changes to the channels and close the Edit Point to Point Demand dialog box, or **Cancel** to close the dialog box without saving the changes.

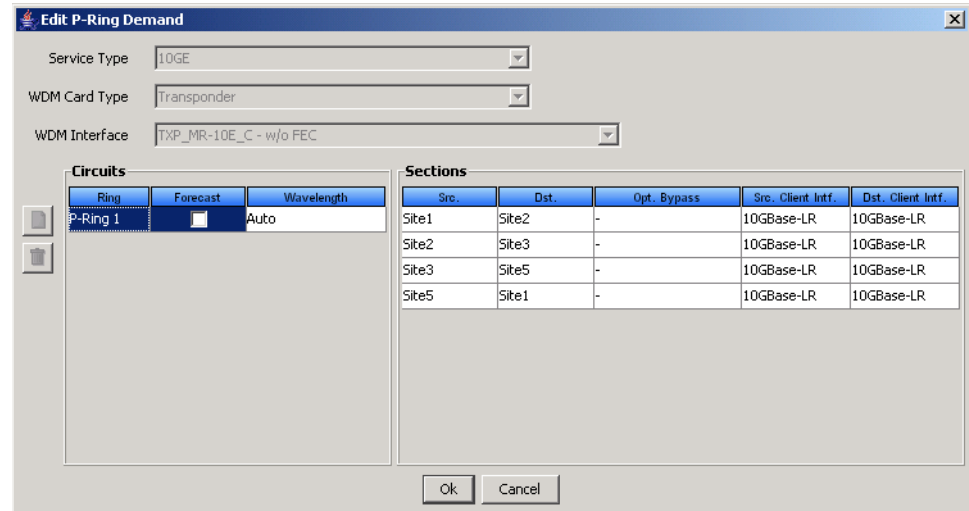
2.6.7 Editing a P-Ring Demand

Use the following procedure to change the distribution of services in a P-ring service demand:

- Step 1** In the Project Explorer, right-click the network folder and choose **Expand** from the shortcut menu.

- Step 2** In the Project Explorer, right-click the P-ring demand and choose **Edit** from the shortcut menu. The Edit P-Ring Demand dialog box appears (Figure 2-39).

Figure 2-39 Edit P-Ring Demand Dialog Box



- Step 3** Complete the following as needed in the Edit P-Ring Demand dialog box to modify the P-ring:

- Service Type—Choose the desired service type from the drop-down list.
- WDM Card Type—Choose the desired card type from the drop-down list. The available options depend on the service type selected.
- WDM Interface—Choose the desired card interface type from the drop-down list. The available options depend on the card type selected.

In the Circuits area of the Edit P-Ring Demand dialog box, complete the following as needed:

- Ring—(Display only) Displays the name of the P-ring.
- Forecast—Check to change the present channels to forecast channels.
- Wavelength—Choose the desired wavelength type from the drop-down list. If you choose Auto, Cisco MetroPlanner assigns wavelengths to the channels with the lowest possible cost given the other constraints.

In the Sections area of the Edit P-Ring Demand dialog box, complete the following as needed:

- Src—(Display only) Displays the source site name for a section.
- Dst—(Display only) Displays the destination site name for a section.
- Opt. Bypass—Choose the sites from the drop-down list where the channels for the current demand will be optically dropped. Only the sites between the source and destination sites along the path of this section are available as options.
- Src. Client Intf.—Choose the desired source client interface from the drop-down list. The available options depend on the card type selected.
- Dst. Client Intf.—Choose the desired destination client interface from the drop-down list. The available options depend on the card type selected.

- Step 4** To add a new P-ring channel, click the Create a new P-Ring circuit icon on the left of the Edit Point to Point Demand dialog box. A new row appears. Repeat [Step 3](#) as needed to complete the parameters for the new P-Ring.

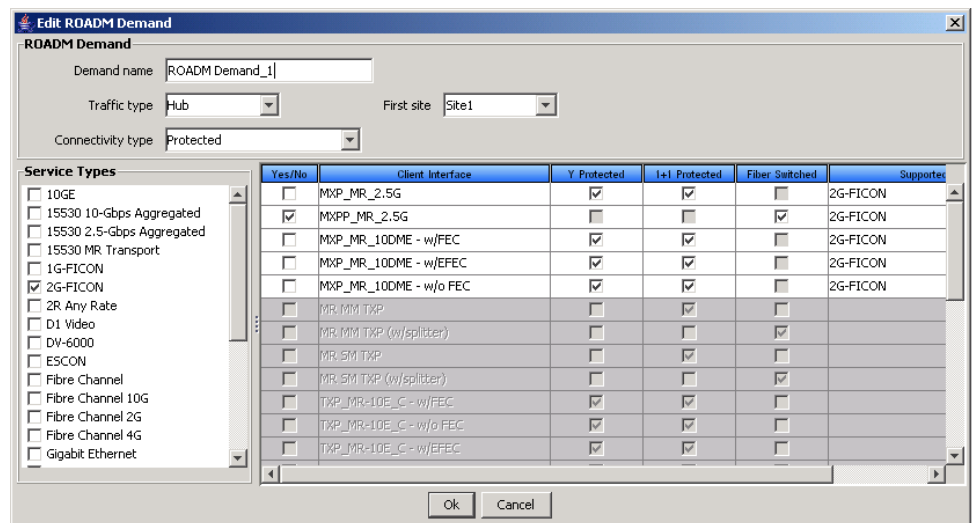
- Step 5** To delete an existing channel from the P-ring, select the row and click the Remove the selected P-Ring circuit icon on the left of the Edit P-Ring Demand dialog box.
- Step 6** Click **Ok** to save the changes to the channels and close the Edit P-Ring Demand dialog box, or **Cancel** to close the dialog box without saving the changes.

2.6.8 Editing a ROADM Demand

Use the following procedure to change the distribution of services in a ROADM service demand:

- Step 1** In the Project Explorer, right-click the network folder and choose **Expand** from the shortcut menu.
- Step 2** Right-click the ROADM traffic group and choose **Edit** from the shortcut menu. The Edit ROADM Demand dialog box appears (Figure 2-40).

Figure 2-40 Edit ROADM Demand Dialog Box



- Step 3** Select a traffic pattern type (**Hub** or **Meshed**) from the drop-down list. If you select Hub, the First Site drop-down button becomes available. If you selected Meshed, go to [Step 5](#).
- Step 4** For Hub traffic types, select the originating site from the First Site drop-down list.
- Step 5** Select a connectivity type from the Connectivity type drop-down list. The choices are **Protected**, **Unprotected Minimum Hop**, **Unprotected Optimum Path**, and **Unprotected Subnet**. Refer to the “[1.5.3 ROADM Traffic Groups](#)” section on page 1-9 for more information about the connectivity type choices.
- Step 6** In the Service types pane, check the boxes for one or more client service types for the ROADM demand. The client interfaces that support each service type appear in the right pane.
- Step 7** To further refine the client interfaces, complete the following options for each row in the right pane. Check boxes in gray are not available for the client interface selection.
- Yes/No—Check to select this card to implement the service type.
 - Client Interface—Displays the card type for the selected service type.

- Y Protected—Check to select Y-cable protection if the connectivity type is Protected.
- 1+1 Protected—Check to select 1+1 protection if the connectivity type is Protected.
- Fiber Switched—Check to select fiber-switching protection if the connectivity type is Protected.
- Supported Service—Displays the service types supported for the card.

You can select more than one client interface to support the same service type. By default, Cisco MetroPlanner checks the best client interface to support each service.

Step 8 Click **Ok** to save the changes to the demand.

2.6.9 Deleting a Traffic Demand

A traffic demand must be in the Unlocked state before you can delete it. Use the following procedure to delete a traffic demand:

- Step 1** In the Project Explorer, right-click the network folder and choose **Expand** from the shortcut menu.
- Step 2** Verify that the demand is in the Unlocked state. For more information, see the “[2.7.4 Unlocking Parameters in the Network Design](#)” section on page 2-80.
- Step 3** Right-click the demand that you want to delete in the Project Explorer and choose **Delete** from the shortcut menu. As an alternative, you can click **Delete** in the Tasks Pane.


2.6.10 Editing Fiber Span Parameters

Using the Properties pane, you can manage a fiber span, a fiber pair, and individual fibers. A fiber pair consists of two different fibers (clockwise and counter-clockwise). [Table 2-24](#) lists the properties that you can modify for a fiber span, pair, or fiber.

Table 2-24 Editable Fiber Properties

Property	Fiber Span	Fiber Pair	Fiber
Name	Yes	Yes	No
Ageing loss	Yes	No	No
Ageing factor	Yes	No	No
Fiber type	Yes	Yes	No
Fiber length	Yes	Yes	Yes
Length-based loss	Yes	Yes	Yes
Connector loss (per site)	Yes	Yes	Yes
Absolute loss without connectors	Yes	Yes	No
CD factor	Yes	Yes	No
PMD factor	Yes	Yes	No
Loss	Yes	Yes	Yes

Use the following procedure to edit fiber span parameters:

-
- Step 1** In the Project Explorer, right-click the **Fibers** folder and choose **Expand** from the shortcut menu.
- Step 2** In the Project Explorer tree, click one of the following. The options available for editing in the Properties pane change depending on your selection.
- To edit a fiber span, click the duct identifier.
 - To edit a fiber pair, click the fiber pair identifier.
 - To edit an individual fiber, click the fiber identifier.
- Step 3** In the Properties pane, edit the following parameters, as necessary. See [Table 2-24](#) for the properties that you can change for a fiber span, fiber pair, or individual fiber.
- Name—Type the desired name for the fiber span, pair, or fiber.
 - Ageing loss—Type the EOL aging loss value. The EOL loss per span value is added at the end of life to each discrete fiber in the network (for example, to add an EOL margin for splicing). If you set the ageing factor, you do not need to set the ageing loss.
 - Ageing factor—Type the number to factor fiber aging. This factor is multiplied by the SOL total span loss without connectors. If you set the ageing loss, you do not need to set the ageing factor.
 - Type—Choose the type of fiber for each span in the network: **G652-SMF**, **E-LEAF**, or **True Wave**.
 - Length—Type the span length. The displayed unit of measure is retrieved from the Span Measurements Units field.
 - Length Based Loss—Check to define if the fiber loss is specified as an absolute value or leave unchecked if fiber loss is derived from the span length.
 - Connector loss [Site 1]—Type the concentrated connector loss at the end of the span.
 - Connector loss [Site 2]—Type the concentrated connector loss at the end of the span.
 - Abs loss w/o conn [dB]—Type the start of life link fiber loss for each span, without the connector concentrated loss. The total SOL loss without connectors is equal to the loss factor multiplied by the length. In the Length Based model, this value is calculated automatically.
 - CD—Type the fiber CD factor. The default value is dependent on the selected fiber type. Any value that you enter is lost whenever you change the fiber type. Chromatic dispersion is always entered in ps/nm/km. Fiber chromatic dispersion is defined for the middle of the wavelength band. C band is defined at 1545.3 nm; L band is defined at 1590.4 nm.
 - PMD—Type the PMD factor. The default value is dependent on the selected fiber type. Any value that you enter is lost whenever you change the fiber type. PMD is always entered in ps/nm/km.
 - Loss—Type the value of the SOL fiber loss per kilometer used to calculate the loss of each span in the network. The fiber loss factor is always entered in dB/km.
- Step 4** As needed, view the following totals for a fiber span, fiber pair, or individual fiber on the Properties pane:
- Loss BOL—(Display only) Displays the total loss beginning of life (BOL) calculation.
-  **Note** BOL is also referred to as SOL.
-
- Loss EOL—(Display only) Displays the total loss EOL calculation.
 - CD—(Display only) Displays the total chromatic dispersion.

- PMD—(Display only) Displays the total polarization mode dispersion.
-

2.6.11 Deleting a Fiber Span

Use the following procedure to delete a fiber span from the network design:

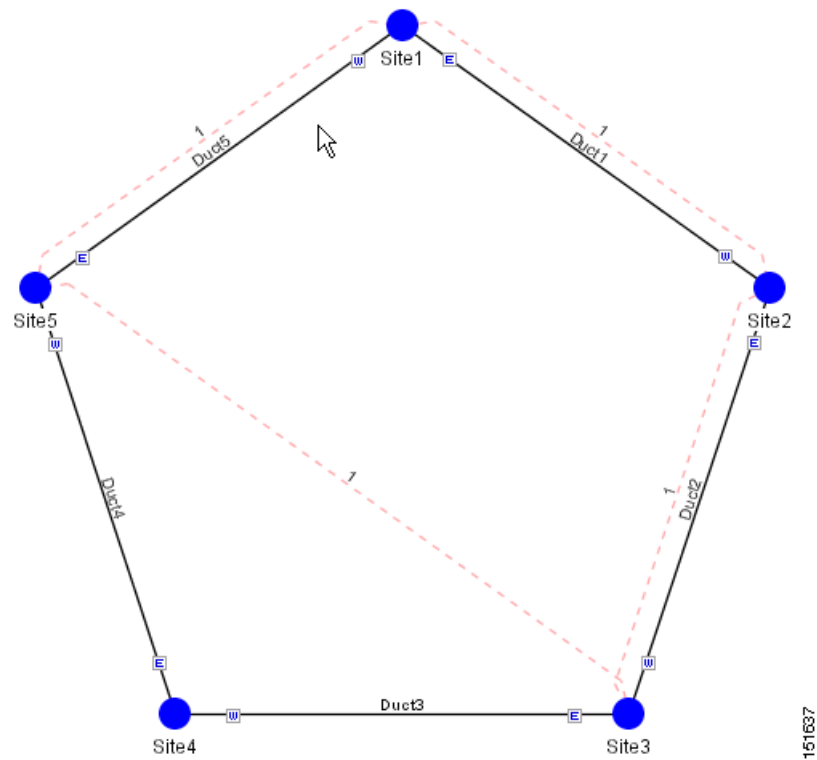
-
- Step 1** In the Project Explorer, right-click the network folder and choose **Expand** from the shortcut menu.
- Step 2** In the Project Explorer, right-click the duct that you want to delete and choose **Delete** from the shortcut menu. As an alternative, you can click **Delete** in the Tasks Pane.
- Step 3** Click **Yes** to confirm the fiber deletion.
-

2.6.12 Arranging Sites

Sites can be arranged into four different configurations. Use the following procedure to arrange the sites into a configuration or to move all of the sites so that they appear in the Cisco MetroPlanner window:

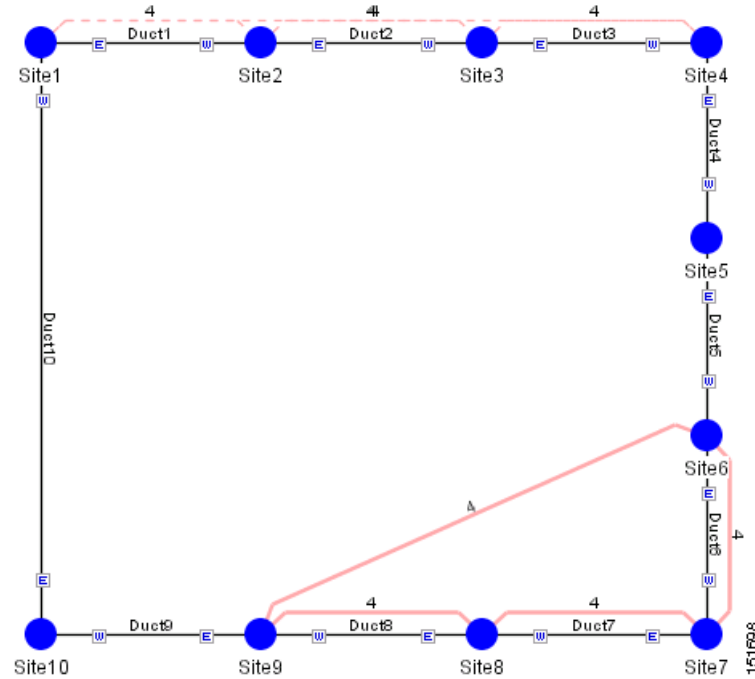
-
- Step 1** Click the **NtView Net#** tab.
- Step 2** Click the Arrange Sites drop-down list, and choose one of the following:
- Fit to visible rectangle view—Zooms to display all sites in the NtView Net# tab.
 - Arrange to an ellipse—Rearranges all sites in an ellipse form ([Figure 2-41](#)).

Figure 2-41 Ellipse Shape



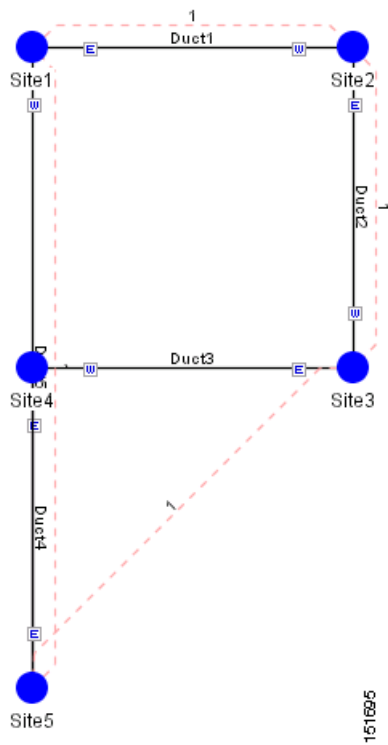
- Arrange to a square—Rearranges all sites in a square form so that the sites appear clockwise around the square (Figure 2-42). To complete a full square, this arrangement requires at least four sites.

Figure 2-42 Square Shape



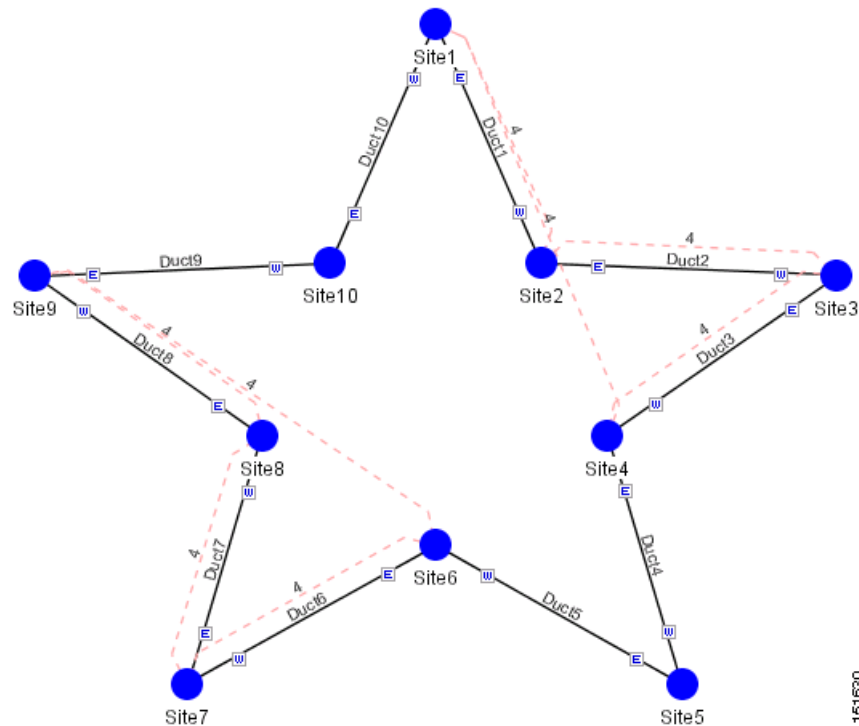
- Arrange to a snake—Rearranges all sites so that they cross the NtVw Net# tab from right to left and then left to right in a serpentine, linear format (Figure 2-43).

Figure 2-43 Snake Shape



- Arrange to a double ring—Rearranges the sites into a dual ring format (Figure 2-44).

Figure 2-44 Double Ring Shape



2.7 Managing the Network Design

After creating and analyzing a network design, you must prepare the design for installation at a customer site. After a network has been installed, you can reanalyze to correct any problems.

Network designs have several possible states:

- **Design**—The initial state for any new network design. You can add, delete, or change any aspect of the network design. In the Design state, no locks exist. After analyzing a design, you can put it back into the Design state to modify it by choosing Design in the Tasks Pane.
- **Design-Analyzed**—The state of the network design after you run the network analyzer. All reports are available and updated. You cannot change any aspect of the network design. You can modify the BoM, such as changing global discounts and spare parts. You can return to the Design state after analyzing the network by choosing Design in the Tasks Pane.
- **Copy**—A copy of a network. You can create a copy of a network in any state. A copy is useful for testing different design options. You can copy a network before or after analyzing it. A copied network inherits the set of project options defined in the original network. For more information, see the “2.7.1 Creating a Copy of the Network” section on page 2-78.
- **Install**—A network is initially designed with theoretical fiber values (such as loss, length, etc.). When a network is installed in the field, you can move the network into the Install state so that you can enter and check the real fiber parameter values. You can create an Install network from a network in the Design-Analyzed or Upgrade-Analyzed state. A network in the Install state inherits the set of project options defined in the analyzed network. All sites in an Install network are locked. You

cannot modify any aspect of the network design except the span parameters and (on unlocked sites) amplifiers. You can, however, modify the BoM. All routed circuits are fixed, and cannot be changed while in this state. For more information, see the “[2.7.2 Creating a Network in the Install State](#)” section on page 2-78.

- **Install-Analyzed**—The state of the Install network design after you run the network analyzer. All reports are available and updated. Cisco MetroPlanner locks all sites, spans, demands, and equipment when a network is in the Install-Analyzed state.
- **Upgrade**—During network design, you define a number of the channels to be implemented at the present time and a number of channels to be implemented in the future (forecast). After installing the network, you might decide to implement the forecast circuits. To do this, you create an Upgrade network and then select the forecast or traffic demand services that you want to implement. You can create an Upgrade network from a network in the Design-Analyzed or Install-Analyzed state. You can unlock specified parameters to alter the design to include forecasted channels and traffic demands. A network in the Upgrade state inherits the set of project options defined in the analyzed network. For more information, see the “[2.7.3 Creating an Upgrade Network](#)” section on page 2-79.
- **Upgrade-Analyzed**—The state of the Upgrade network design after you run the network analyzer. All reports are available and updated. Cisco MetroPlanner locks all sites, spans, demands, and equipment when a network is in the Upgrade state.

To complete the procedures in this section, you must have a project open and the network(s) loaded. See the “[2.1.1 Opening a Project](#)” section on page 2-3 and the “[2.1.2 Loading and Unloading Networks](#)” section on page 2-3.

2.7.1 Creating a Copy of the Network

To create a copy of a network in any state, right-click the network and choose **Copy** from the shortcut menu. A new copy appears in the Network Mgmt Tree tab.

2.7.2 Creating a Network in the Install State

Use the following procedure to create a network in the Install state:

- Step 1** If the network is not analyzed, complete the “[2.4 Analyzing the Network](#)” section on page 2-36.
- Step 2** Click the **Networks Mgmt Tree** tab.
- Step 3** Right-click the network and choose **Install** from the shortcut menu. A new network appears in the Networks Mgmt Tree in the Install state. All results from the analyzed network are imported into the Install network and are placed in the Locked mode.
- Step 4** Make the necessary changes to the Install network. You can edit the following fiber parameters: fiber loss value, fiber CD, fiber PMD, and fiber length. See the “[2.6.10 Editing Fiber Span Parameters](#)” section on page 2-71. Cisco MetroPlanner also allows you to unlock site parameters for modification. To change site parameters, see the “[2.6.3 Editing Site Parameters](#)” section on page 2-63.
- Step 5** In the Networks Mgmt Tree view, click the **Analyze Network** icon in the toolbar. For more information about the Cisco MetroPlanner icons, see [Appendix A, “GUI Information and Shortcuts.”](#) The MetroPlanner Analyzer status window appears to indicate the progress. As an alternative, click **Analyze** in the Tasks Pane. The Cisco MetroPlanner analysis status bar indicates when the network analysis is complete. The network now appears in the Install-Analyzed state.

**Note**

If you have changed parameters that are inconsistent with the present network layout (for example, if you set an output tilt value that the amplifier cannot reach), during network analysis an error message on the Analyzer Messages pane identifies which parameter is causing the problem.

- Step 6** When you have analyzed the network and are satisfied with the results, import the new generated installation parameters to each site of the network. For more information, see the [“2.5.2 Saving the NE Update File”](#) section on page 2-39.

2.7.3 Creating an Upgrade Network

In an Upgrade network, you can perform the following tasks:

- Modify the fiber span properties (such as length, dispersion, PMD coefficient, excess losses, and aging).
- Add or delete traffic.
- Convert forecasted traffic to present traffic.
- Convert ROADM traffic to present traffic.
- Modify the type of a node.
- Force the presence or the absence of a card or a module (this includes amplifiers, OSC modules, OADM cards, and DCU modules).

In an Upgrade network, you can force certain installation parameters:

- Amplifier per-channel output power setpoint
- Amplifier output tilt setpoint
- OADM card aggregate output power setpoint
- Full multiplexer/demultiplexer or ROADM output power setpoint

You cannot change the following parameters when in Upgrade state:

- Node input channel fail threshold
- Node OSC channel fail threshold
- Preamplifier input power threshold
- OADM card aggregate input power setpoint
- Full muxponder/demuxponder or ROADM input power setpoint
- Channels drop power

Use the following procedure to put a network in the Upgrade state:

- Step 1** If the network is not analyzed, complete the [“2.4 Analyzing the Network”](#) section on page 2-36.
- Step 2** Click the **Networks Mgmt Tree** tab.
- Step 3** Right-click the analyzed network and choose **Upgrade** from the shortcut menu. A new Upgrade network appears in the Networks Mgmt Tree tab. All results from the analyzed network are imported into the Upgrade network.

- Step 4** Make the necessary changes to the Upgrade network. For more information, see the “[2.6.10 Editing Fiber Span Parameters](#)” section on page 2-71 and the “[2.6.3 Editing Site Parameters](#)” section on page 2-63.
- Step 5** In the Networks Mgmt Tree view, click the **Analyze Network** icon in the toolbar. For more information about the Cisco MetroPlanner icons, see [Appendix A, “GUI Information and Shortcuts.”](#) The MetroPlanner Analyzer status window appears to indicate the progress. As an alternative, click **Analyze** in the Tasks Pane in any view. The Cisco MetroPlanner analysis status bar indicates when the network analysis is complete. The network now appears in the Upgrade-Analyzed state.



Note If you have changed parameters that are inconsistent with the present network layout (for example, if you set an output tilt value that the amplifier cannot reach), during network analysis an error message on the Analyzer Messages pane identifies which parameter is causing the problem.

2.7.4 Unlocking Parameters in the Network Design

The Locked state occurs when you did not set (force) any value for a parameter and instead chose Auto. During network analysis, Cisco MetroPlanner assigns a value for each parameter set with Auto and puts them in the Locked state. The Locked state indicates that the next time the network is analyzed, the analyzer cannot change the value. Locking a site forces the presence or absence of all preamplifiers, boosters, add/drop filters, and DCU cards required by the site/network as a result of running the analyzer previously. Locked elements are indicated by a closed padlock icon in the Project Explorer ([Figure 2-45](#)).

Figure 2-45 Locked Sites in the Project Explorer View



To unlock network components to edit parameters, right-click the desired element in the Project Explorer and choose **Unlock** from the shortcut menu.

2.8 Generating a BoM

You can generate a BoM when a network is in the Install or Upgrade state, or after you have successfully analyzed your network design. The price database selected during project creation is used to generate the BoM.

To complete the procedures in this section, you must have a project open and the network(s) loaded. See the “[2.1.1 Opening a Project](#)” section on page 2-3 and the “[2.1.2 Loading and Unloading Networks](#)” section on page 2-3.

2.8.1 Viewing BoM Report Totals

Use the following procedure to view the BoM report totals:

-
- Step 1** Click the **Networks Mgmt Tree** tab and click the network.
- Step 2** In the Tasks Pane, click **Bill of Material**. The Bill of Material tab appears.
- The upper section of the BoM tab (in the Net view, Site view, and Spare subtabs) displays the following information:
- **BoM total discounted**—Displays the price for the overall network (without spare parts) for each item in the BoM. If Use global discount is checked, the total includes the discount from the Global discount percentage field.
 - **Spare total discounted**—Displays the price for all of the recommended spare parts in all of the maintenance centers for the overall network. It is the sum of each spare item using the discounted price. The total appears after you check the Spare Part Report check box.
 - **BoM + Spare total discounted**—Displays the sum of the BoM total discounted price and spare total discounted price.
 - **Price List**—Displays the name of the price list database selected for the project.
 - **Price List last update**—Displays the date that the selected price list was last updated.
 - **Currency**—Displays the value of the currency used for each of the price values as specified within the selected price list database.
- Step 3** To use the Multishelf Management Integrated Kit bundle when generating the BoM instead of the single items, check **Use bundle**.
- Step 4** Check **Spare Part Report** to include the spare parts in the report totals.
- Step 5** The Global discount percentage field shows the percentage from the Global Discount Percentage option in the Default Project Options window. To change the global discount for the entire network, check **Use global discount** and enter a new global discount in the form of a percentage in the **Global discount percentage** field. The global discount is applied to all components in the BoM.
-

2.8.2 Generating a Network BoM

Use the following procedure to generate a BoM for the network:

-
- Step 1** Click the **Networks Mgmt Tree** tab and click the network.
- Step 2** In the Tasks Pane, click **Bill of Material**. The Bill of Material tab (Figure 2-46) appears. The Net View subtab is selected by default. Items that do not appear in the price list appear in red.

Figure 2-46 Bill of Material Tab, Net View Subtab

Product ID	Description	Quantity	Unit price	Unit Discount	Total price
15454-SA-HD	15454 SA NEBS3 ANSI w/RCA and Ship Kit, I-T...	18	2,700.00	0.0 %	48,600.00
15454-BLANK	Empty slot Filler Panel	150	225.00	0.0 %	33,750.00
15454-TCC2	Timing Communications Control Two, I-Temp	36	4,500.00	0.0 %	162,000.00
ANSI VALUE	SoftwarePackage	128	Not found in Price List	0.0 %	0.00
15454-OSC-CSM	ONS 15454 Combiner and Separator with OSC ...	40	9,000.00	0.0 %	360,000.00
15454-AD-4C-54.1	ONS 15454 OADM - 4 Chs - 100GHz - 54.13-54...	8	40,000.00	0.0 %	320,000.00
15454-AD-4C-58.1	ONS 15454 OADM - 4 Chs - 100GHz - 58.17-58...	8	40,000.00	0.0 %	320,000.00
15454-10E-L1-54.1	ITEM NOT ORDERABLE: PLEASE CONTACT ONG	32	75,000.00	0.0 %	2,400,000.00
15454-10T-L1-58.2	TXP_MR_10G	16	Not found in Price List	0.0 %	0.00
15454-10T-L1-58.8	TXP_MR_10G	16	Not found in Price List	0.0 %	0.00

Table 2-25 describes the Net view subtab columns. See the “2.8.1 Viewing BoM Report Totals” section on page 2-81 for a description of the data, check boxes, and fields at the top of the window.

Table 2-25 BoM Net View Columns

Column Label	Description
Product ID	Displays the ID string of the product.
Description	Displays a description of the product.
Quantity	Displays the number of specific products in the BoM.
Unit price	Displays the price for each unit. If the price does not appear, one of the following will: <ul style="list-style-type: none"> Invalid—Appears when the price list reports “NaN” (Not a Number) for the item. This occurs when a price list has never been updated. Invalid items appear in the list in orange. Not Found in Price List—Appears when the price list does not contain any entry with the PID. These items appear in the list in red.
Unit Discount	Displays the per-unit discount amount that you assigned in the Global Discount Percentage field. If you leave the field blank, the discount amount is zero.
Total price	Displays the total price of the products before applying the discount.
Discounted Total Price	Displays the total price of the products after applying the discount.
Site #	Displays the number of products to be assigned to a particular site. The number of Site columns is the same as the number of sites in the network.

Step 3 To close the Bill of Material report, click the **X** in the upper right corner of the Bill of Material tab.

2.8.3 Generating a Site BoM

A site BoM lists all of the hardware and software parts required for the system to work as designed at a given site. Use the following procedure to generate a BoM for a site:

Step 1 Click the **NtView Net#** tab and click the site.

Step 2 In the Tasks Pane, click **Bill of Material**. The Site view subtab is selected by default (Figure 2-47). Items that do not appear in the price list appear in red.

Figure 2-47 Bill of Material Tab, Site View Subtab

Name	PID	Quantity	Unit Price	Unit Discount
Site1				
Mech Unit				
15454 ETSI Blank Module for FMEC (Slot Filler)	15454E-BLANK-FMEC	10	50.00	0.0
Empty slot Filler Panel	15454-BLANK	7	225.00	0.0
ONS 15454 SDH Air Ramp comes with ETSI Rack ...	15454E-AIR-RAMP	1	120.00	0.0
ONS 15454 SDH ETSI Chassis	15454E-SA-ETSI	1	2,950.00	0.0
Rack	ETSI VALUE	3	Not found in...	0.0
Common Unit				
MS100T	ETSI VALUE	2	Not found in...	0.0
ONS15454SDH Alarm, -48V PwrMgmt IF Conn	15454E-AP-MIC48V	1	400.00	0.0
ONS15454SDH Craft, Timing, -48V PwrMgmt IF Conn	15454E-CTP-MIC48V	1	400.00	0.0
Timing Communications Control Two	15454E-TCC2	2	4,500.00	0.0
SW License		3	Not found in...	
Documentation		2	Not found in...	
Opt Common Unit		4		

Table 2-26 describes the Site view subtab columns. See the “2.8.1 Viewing BoM Report Totals” section on page 2-81 for a description of the data, check boxes, and fields at the top of the window.

Table 2-26 BoM Site View Columns

Column Label	Description
Name	Displays the name of the item at the site.
PID	Displays the ID string of the product.
Quantity	Displays the number of that specific item in the BoM.

Table 2-26 BoM Site View Columns (continued)

Column Label	Description
Unit Price	Displays the price per unit. If the price does not display, one of the following will: <ul style="list-style-type: none"> Invalid—Appears when the price list reports NaN (Not a Number) for the item. This occurs when a price list has never been updated. Invalid items appear in the list in orange. Not Found in Price List—Appears when the price list does not contain any entry with the PID. These items appear in the list in red.
Unit Discount	Displays the per-unit discount amount that you assigned in the Global Discount Percentage field. If you leave the field blank, the discount amount is zero.
Total Price	Displays the total price of the products before applying the discount.
Discounted Total Price	Displays the total price of the products after applying the discount.

Step 3 To close the Bill of Material report, click the **X** in the upper right corner of the Bill of Material tab.

2.8.4 Generating a Spare Parts Report

After you generate the BoM, use the following procedure to determine the spare parts required by the network. If the network is in the Upgrade state, the report includes the parts required to support the implemented services and the new additional present services. To generate a spare parts report, you must associate a site with a maintenance center before network analysis. For more information, see the [“2.6.3 Editing Site Parameters”](#) section on page 2-63.

Step 1 Click the **Networks Mgmt Tree** tab and click the network.

Step 2 In the Tasks Pane, click **Bill of Material**. Click the **Spare** subtab (Figure 2-48).

Figure 2-48 Bill of Material Tab, Spare Subtab

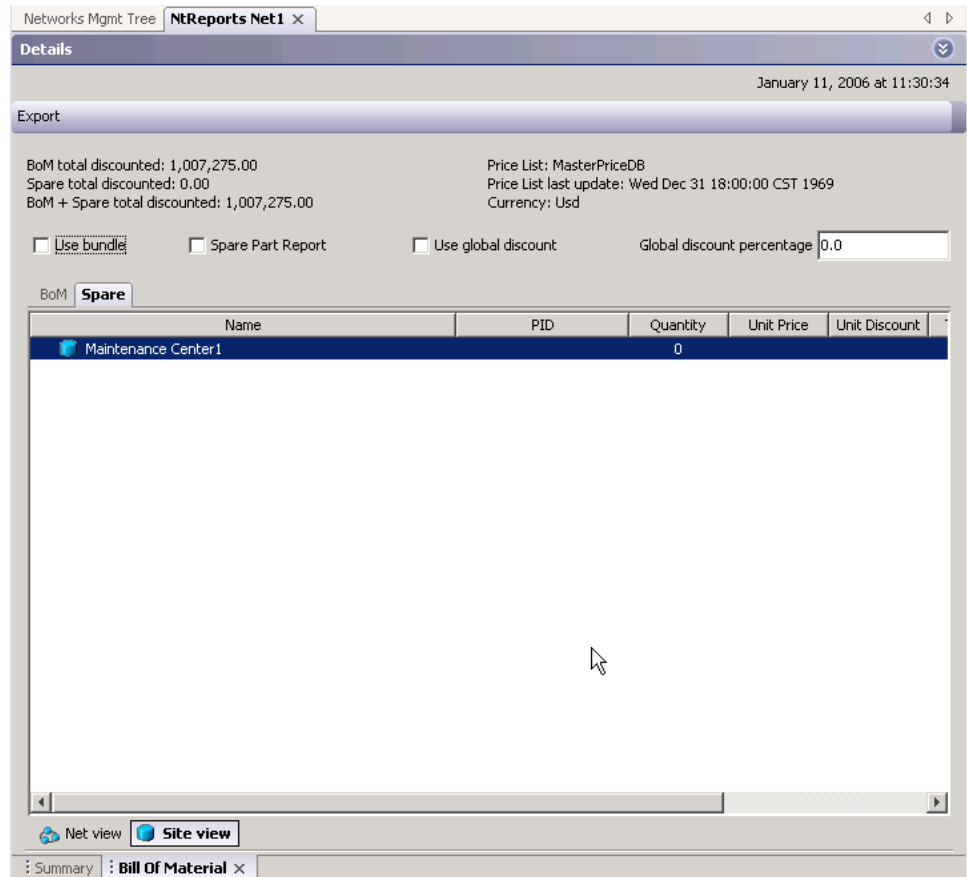


Table 2-27 describes the Spare subtab columns. See the “2.8.1 Viewing BoM Report Totals” section on page 2-81 for a description of the data, check boxes, and fields at the top of the window.

Table 2-27 BoM Spare Subtab Columns

Column Label	Description
Name	Displays the name of the item at the site. Right-click the maintenance center and choose Expand All from the shortcut menu to view all spare parts.
PID	Displays the ID string of the product.
Quantity	Displays the number of specific items in the BoM.
Unit Price	Displays the price per unit. If the price does not appear, one of the following will: <ul style="list-style-type: none"> Invalid—Appears when the price list reports NaN (Not a Number) for the item. This occurs when a price list has never been updated. Invalid items appear in the list in orange. Not Found in Price List—Appears when the price list does not contain any entry with the PID. These items appear in the list in red.
Unit Discount	Displays the per-unit discount amount that you assigned in the Global Discount Percentage field. If you leave the field blank, the discount amount is zero.

Table 2-27 BoM Spare Subtab Columns (continued)

Column Label	Description
Total Price	Displays the total price of the parts before applying the discount.
Discounted Total Price	Displays the total price of the parts after applying the discount.

Step 3 To close the Bill of Material report, click the **X** in the upper right corner of the Bill of Material tab.

2.8.5 Exporting a BoM

Use the following procedure to export the BoM to an external file in XML, Excel spreadsheet, HTML, or text format:

-
- Step 1** Click the **Networks Mgmt Tree** tab and click the network.
 - Step 2** In the Tasks Pane, click **Bill of Material**. The Bill of Material tab appears.
 - Step 3** Click **Export**. The BoM export dialog box appears.
 - Step 4** In the BoM export dialog box, type the name of the file, choose the file type (**.xml**, **.xls**, **.html**, or **.txt**) from the drop-down list, and navigate to the desired folder. Click **Save**.
-

2.9 Managing the Price List

A price list is defined for each project and is used to generate a BoM. Cisco MetroPlanner can manage multiple price lists. You can even change a project price list after a project has been established. The Master Price list is the Global Price List in US dollars. You can download new price lists from Cisco Connection Online (CCO).

Only the selected price value is saved with a project; the actual price database is not saved with the project. When opening a saved project (for example, a project received from another designer), the associated price database might not be available. If this is the case, Cisco MetroPlanner notifies you that the Master Price list will be used.

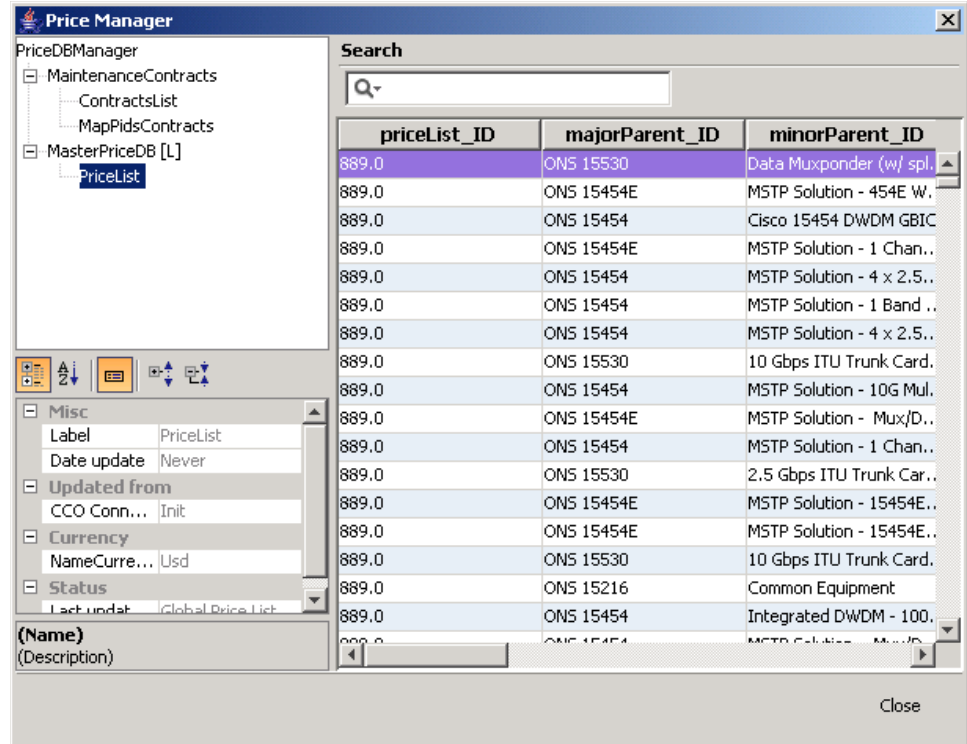
To save memory, Cisco MetroPlanner automatically loads only the price list selected for the current project.

2.9.1 Creating a New Price List

Use the following procedure to download a price list from CCO:

-
- Step 1** From the Tools menu, choose **Price List Mgmt**. The Price Manager dialog box appears ([Figure 2-49](#)).

Figure 2-49 Price Manager Dialog Box



- Step 2** In the Price Manager dialog box, right click **PriceDBManager** and choose **New Price DB** from the shortcut menu.
- Step 3** In the Create a New Price DB dialog box, enter the price list name.
- Step 4** From the drop-down list, choose the desired CCO price list.
- Step 5** Click **OK**.
- Step 6** Click **OK** to update from CCO.
- Step 7** In the CCO User Name/Password dialog box, type your user name and password, and click **OK**. Cisco MetroPlanner downloads the CCO price list.
- Step 8** When the update is complete, click **OK** to close the confirmation dialog box. The new price list appears in the PriceDBManager tree.
- Step 9** Click **Close** to close the Price Manager dialog box.

2.9.2 Viewing a Price List

Use the following procedure to view and filter a price list:

- Step 1** From the Tools menu, choose **Price List Mgmt**. The Price Manager dialog box appears (Figure 2-49 on page 2-87).

The PriceDB Manager tree lists all of the created price lists. To save memory, Cisco MetroPlanner automatically loads only the price list selected for the current project (unless the user requests otherwise). An L indicates that the price list is loaded in memory and is available. A U indicates that a price list is currently not loaded in memory and is not available.

Step 2 To load or unload a price list, right-click a price list and choose **Load** or **Unload** from the shortcut menu.

Step 3 Click **PriceList** under the desired price list identifier in the PriceDBManager tree. The list displays in the right pane of the Price Manager dialog box. The properties of the price list appear in the bottom left corner of the Price Manager dialog box:

- Label—Identifies the name of the price list.
- Date update—Indicates the date of the last download from CCO for this price list. If Never appears, this indicates that the user created a price list without downloading from CCO.
- NameCurrency—Identifies the currency used in the price list.
- Last updated by—Identifies the way in which the price list was updated.

The price list displays the following columns:

- priceList_ID—For internal use.
- majorParent_ID—Lists the platform.
- minorParent_ID—Lists the equipment type.
- product_ID—Identifies the part number.
- description—Provides detail about the item.
- serviceCategory—For internal use.
- listPrice—Indicates the price of the item. If NaN (Not a Number) appears in the field, the list has not been updated.
- major_ID—For internal use.
- minor_ID— For internal use.
- updateStatus—Identifies how the last update was made to an item:
 - Never—Indicates that the price list has never been updated.
 - local_file—Indicates that the price list has been updated from a local file.
 - CCO—Indicates that the price list has been updated from CCO.
 - user—Indicates that the price list has been manually updated by the user who directly edited the price list.
- discount—If a discount applies, identifies the discount percentage. To modify this field, enter the new percentage.

Step 4 To search for a specific item in a price list, type the desired item in the Search field at the top of the list. As you type, Cisco MetroPlanner filters the list items to match your search entry. To choose Search options, click the Search Tool icon to the left of the Search field and choose one of the following:

- Column name—Searches only the specified column for the search string.
- Case sensitive—Matches the case of the search string.
- Case insensitive—Disregards the case of the search string.
- Match from start—Searches only for the search string if it appears at the beginning of column text.
- Match any where—Searches for the search string if it appears anywhere in the price list.

Step 5 To sort the items in the price list, double-click on a column to sort by that column.

- Step 6** Click **Close** to close the Price Manager dialog box.
-

2.9.3 Loading and Unloading Price Lists

To save memory, Cisco MetroPlanner automatically loads only the price list selected for the current project. An “L” by a price list in the Price Manager dialog box indicates that the price list is loaded; a “U” in the Price Manager dialog box indicates that the price list is not loaded. Use the following procedure to load or unload price lists in Cisco MetroPlanner:

- Step 1** From the Tools menu, choose **Price List Mgmt.** The Price Manager dialog box appears ([Figure 2-49 on page 2-87](#)).
- Step 2** Right-click the price list and choose **Load** or **Unload** from the shortcut menu.
-

2.9.4 Updating a Price List from CCO

Use the following procedure to update a specified price list from CCO or from a local file. You can also update all price lists, even the lists that are not currently loaded.

- Step 1** From the Tools menu, choose **Price List Mgmt.** The Price Manager dialog box appears ([Figure 2-49 on page 2-87](#)).
- Step 2** Right-click the desired price list identifier in the PriceDBManager tree and choose **Expand** from the shortcut menu.
- Step 3** Right-click the desired price list in the expanded tree and choose **UpdateFromCCO** from the shortcut menu.
- Step 4** In the Update from CCO dialog box, choose **Update single price list** to download data for the specified list or **Update all price lists** to download the latest data for all price lists.
- Step 5** In the CCO User Name/Password dialog box, type your user name and password and click **OK**. Cisco MetroPlanner downloads the price list.
- Step 6** When the update is complete, click **OK** to close the confirmation dialog box.
- Step 7** Click **Close** to close the Price Manager dialog box.
-

2.9.5 Copying a Price List

Use the following procedure to create a new price list by copying from an existing one. The new price list will have all of the attributes and values of the original price list (such as Updated By, Last Update, unit price, discounts, etc.).

- Step 1** From the Tools menu, choose **Price List Mgmt.** The Price Manager dialog box appears ([Figure 2-49 on page 2-87](#)).

- Step 2** Right-click the desired price list in the PriceDBManager tree and choose **Copy** from the shortcut menu.
 - Step 3** Type the name for the new price list and click **Ok**. The new price list appears in the PriceDBManager tree.
 - Step 4** Click **Close** to close the Price Manager dialog box.
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2.9.6 Deleting a Price List

Use the following procedure to delete a price list. You cannot delete the Master Price List or a price list that is in use by a project.

- Step 1** From the Tools menu, choose **Price List Mgmt**. The Price Manager dialog box appears ([Figure 2-49 on page 2-87](#)).
 - Step 2** Right-click the desired price list in the PriceDBManager tree and choose **Delete** from the shortcut menu.
 - Step 3** Click **Close** to close the Price Manager dialog box.
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2.9.7 Viewing Maintenance Contracts

Use the following procedure to view maintenance contracts:

- Step 1** From the Tools menu, choose **Price List Mgmt**. The Price Manager dialog box appears ([Figure 2-49 on page 2-87](#)).
 - Step 2** Right-click **Maintenance Contracts** and choose **Expand** from the shortcut menu.
 - Step 3** Click **ContractsList**. The Contract PID column lists the service contract identifiers for the hardware and software parts used by Cisco MetroPlanner. The Contract Category column describes the service programs.
 - Step 4** Click **MapPidsContracts**. The PID column lists the product identifiers. The Contracts column lists the service contract identifier.
 - Step 5** Click **Close** to close the Price Manager dialog box.
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