CHAPTER 15

Convert Network Configurations

This chapter explains how to convert from one SONET topology to another in a Cisco ONS 15454 network. For initial network turn up, see Chapter 6, “Turn Up Network.”

Note The terms "Unidirectional Path Switched Ring" and "UPSR" may appear in Cisco literature. These terms do not refer to using Cisco ONS 15xxx products in a unidirectional path switched ring configuration. Rather, these terms, as well as "Path Protected Mesh Network" and "PPMN," refer generally to Cisco's path protection feature, which may be used in any topological network configuration. Cisco does not recommend using its path protection feature in any particular topological network configuration.

Before You Begin

This section lists the chapter procedures (NTPs). Turn to a procedure for applicable tasks (DLPs).

1. NTP-A154 Convert a Point-to-Point to a Linear ADM, page 15-1—Complete as needed.
2. NTP-A155 Convert a Point-to-Point or a Linear ADM to a Two-Fiber BLSR, page 15-3—Complete as needed.
3. NTP-A156 Convert a Point-to-Point or Linear ADM to a Path Protection, page 15-6—Complete as needed.
4. NTP-A210 Convert a Path Protectionto a Two-Fiber BLSR, page 15-7—Complete as needed.
5. NTP-A211 Convert a Two-Fiber BLSR to a Four-Fiber BLSR, page 15-9—Complete as needed.
6. NTP-A159 Modify a BLSR, page 15-11—Complete as needed.
7. NTP-A228 Manage BLSR Manual Ring Switches, page 15-12—Complete as needed.
8. NTP-A286 Convert DWDM Nodes to Hybrid Nodes, page 15-14—Complete as needed.

NTP-A154 Convert a Point-to-Point to a Linear ADM

Purpose	This procedure upgrades a point-to-point configuration (two nodes) to a linear add/drop multiplexer (ADM) configuration (three or more nodes).
Tools/Equipment	None
Prerequisite Procedures	NTP-A124 Provision a Point-to-Point Network, page 6-3

Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	Provisioning or higher

Note Optical transmit and receive levels should be in their acceptable range as shown in the specifications section for each card in Table 2-5 on page 2-31.

Note In a point-to-point configuration, two OC-N cards are connected to two OC-N cards on a second node. The working OC-N ports have data communications channel (DCC) terminations, and the OC-N cards are in a 1+1 protection group.

Step 1 Complete the "DLP-A60 Log into CTC" task on page 3-24 at one of the two point-to-point nodes. If you are already logged in, continue with Step 2.

Step 2 Complete the "DLP-A298 Check the Network for Alarms and Conditions" task on page 15-3.

Step 3 Log into the node that will be added to the point-to-point configuration (the new node).

Step 4 Complete the "NTP-A24 Verify Card Installation" procedure on page 4-2 to ensure that the new node has two OC-N cards with the same rate as the point-to-point nodes.

Step 5 Complete the "NTP-A35 Verify Node Turn Up" procedure on page 6-2 for the new node.

Step 6 Physically connect the fibers between the point-to-point node and the new node. The fiber connections should be connected working card to working card and protect card to protect card.

Step 7 On the new node, create a 1+1 protection group for the OC-N cards in the point-to-point node that will connect to the point-to-point node. See the "DLP-A73 Create a 1+1 Protection Group" task on page 4-30.

Step 8 Complete the "DLP-A354 Provision SONET DCC Terminations" task on page 6-4 for the working OC-N cards in the new node that will connect to the linear ADM network. Make sure to set the Port State in the Create SDCC Termination dialog box to **IS**.

Note DCC failure alarms appear until you create DCC terminations in the point-to-point node during Step 9.

Step 9 In node view display the point-to-point node that will connect to the new node.

Step 10 Complete the "NTP-A24 Verify Card Installation" procedure on page 4-2 to ensure that the point-to-point node has OC-N cards installed that can connect to the new node.

Step 11 Create a 1+1 protection group for the OC-N cards that will connect to the new node. See the "DLP-A73 Create a 1+1 Protection Group" task on page 4-30 for instructions.

Step 12 Create DCC terminations on the working OC-N card that will connect to the new node. See the "DLP-A354 Provision SONET DCC Terminations" task on page 6-4. In the Create SDCC Termination dialog box, set the port state to **IS**.

Step 13 From the view menu choose **Go to Node View** to open the new node in node view.

Step 14 Complete the "NTP-A28 Set Up Timing" procedure on page 4-22 for the new node. If the new node is using line timing, make the working OC-N card the timing source.

Step 15 From the view menu choose **Go to Network View**. Verify that the newly created linear ADM configuration is correct. One green span line should appear between each linear node.

Step 16 Click the **Alarms** tab.

a. Verify that the alarm filter is not on. See the "DLP-A227 Disable Alarm Filtering" task on page 9-32 as necessary.

b. Verify that no unexplained alarms appear on the network. If alarms appear, investigate and resolve them before continuing. Refer to the *Cisco ONS 15454 Troubleshooting Guide* for procedures.

Step 17 Repeat the procedure to add an additional node to the linear ADM.

Stop. You have completed this procedure.

DLP-A298 Check the Network for Alarms and Conditions

Purpose	This task verifies that no alarms or conditions exist on the network.
Tools/Equipment	None
Prerequisite Procedures	DLP-A60 Log into CTC, page 3-24
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

Step 1 From the View menu, choose **Go to Network View**. Verify that all affected spans on the network map are green.

Step 2 Verify that the affected spans do not have active switches on the network map. Span ring switches are represented by the letters "L" for lockout ring, "F" for Force ring, "M" for Manual ring, and "E" for Exercise ring.

Step 3 A second verification method can be performed from the Conditions tab. Click **Retrieve Conditions** and verify that no switches are active. Make sure the Filter button is not selected.

Step 4 Click the **Alarms** tab.

a. Verify that the alarm filter is not on. See the "DLP-A227 Disable Alarm Filtering" task on page 9-32 as necessary.

b. Verify that no unexplained alarms appear on the network. If alarms appear, investigate and resolve them before continuing. Refer to the *Cisco ONS 15454 Troubleshooting Guide* for procedures.

Step 5 Return to your originating procedure (NTP).

NTP-A155 Convert a Point-to-Point or a Linear ADM to a Two-Fiber BLSR

Purpose	This procedure upgrades a point-to-point configuration (two nodes) or a linear ADM configuration (three or more nodes) to a two-fiber bidirectional line switched ring (BLSR).
Tools/Equipment	None

Prerequisite Procedures	NTP-A124 Provision a Point-to-Point Network, page 6-3 or NTP-A38 Provision a Linear ADM Network, page 6-12
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	Provisioning or higher

Caution This procedure is service affecting.

Note Optical transmit and receive levels should be in their acceptable range as shown in Table 2-5 on page 2-31.

Step 1 Complete the "DLP-A60 Log into CTC" task on page 3-24 at one of the nodes that you want to convert from a point-to-point or ADM to a BLSR. If you are already logged in, continue with Step 2.

Step 2 According to local site practice, complete the "NTP-A108 Back Up the Database" procedure on page 17-7 for each node in the configuration.

Step 3 Complete the "DLP-A298 Check the Network for Alarms and Conditions" task on page 15-3.

Step 4 On the network map right-click a span adjacent to the node you are logged into. A shortcut menu appears.

Step 5 From the shortcut menu, click **Circuits**. The Circuits on Span window appears.

Step 6 Verify that the total number of active STS circuits does not exceed 50 percent of the span bandwidth. In the Circuits column there is a block titled "Unused." This number should exceed 50 percent of the span bandwidth.

Note If the span is an OC-48, no more than 24 STSs can be provisioned on the span. If the span is an OC-192, no more than 96 STSs can be provisioned on the span. If the span is an OC-12, no more than 6 STSs can be provisioned on the span.

Caution If the first half of the capacity is exceeded, this procedure cannot be completed. Bandwidth must be 50 percent unassigned to convert to a BLSR. Refer to local procedures for relocating circuits if these requirements are not met.

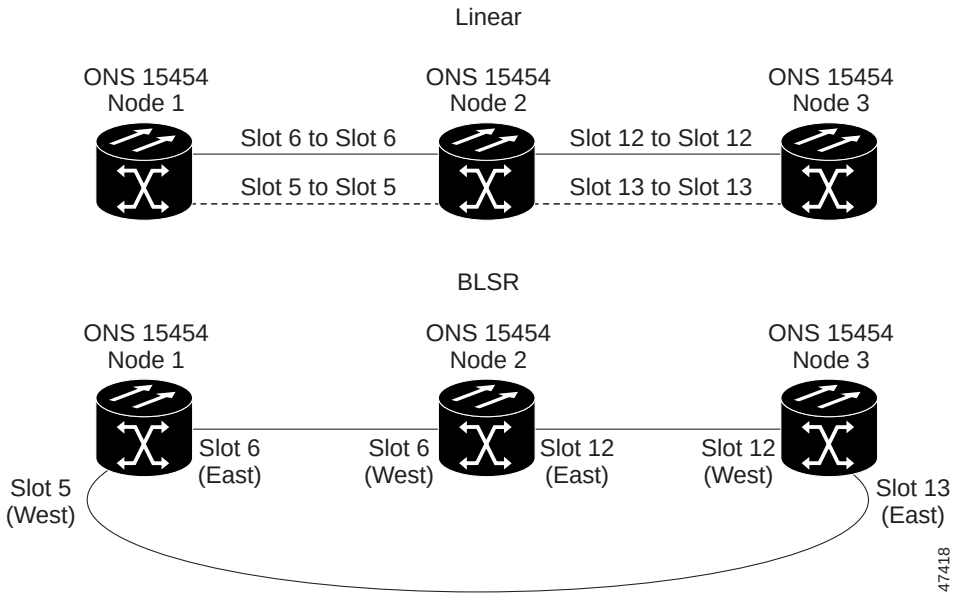
Step 7 Repeat Steps 4 through 6 for each node in the point-to-point or linear ADM that you will convert to a BLSR. When all nodes comply with Step 6, proceed to the next step.

Step 8 For every node in the point-to-point or linear ADM network that you want to convert to a BLSR, complete the following tasks:

- **a.** Complete the "DLP-A189 Verify that a 1+1 Working Slot is Active" task on page 15-6 for every 1+1 protection group that supports a span in the point-to-point or linear ADM network.
- **b.** Complete the "DLP-A155 Delete a Protection Group" task on page 12-20 at each node that supports the point-to-point or linear ADM span.
- **c.** Complete the "DLP-A214 Change the Service State for a Port" task on page 6-6 to put the protect ports out of service at each node that supports the point-to-point or linear ADM span.

Step 9 (Linear ADM only) Physically remove the protect fibers from all nodes in the linear ADM; for example, the fiber running from Node 2/Slot 13 to Node 3/Slot 13 (as shown in Figure 15-1) can be removed.

Figure 15-1 Linear ADM to BLSR Conversion



Step 10 Create the ring by connecting the protect fiber from one end node to the protect port on the other end node. For example, the fiber between Node 1/Slot 5 and Node 2/Slot 5 (as shown in Figure 15-1) can be rerouted to connect Node 1/Slot 5 to Node 3/Slot 13.

Note If you need to remove any OC-N cards from the shelf do so now. In this example, cards in Node 2/Slots 5 and 13 can be removed. See the "NTP-A116 Remove and Replace a Card" procedure on page 2-57.

Step 11 From the network view, click the **Circuits** tabs and complete the "DLP-A516 Export CTC Data" task on page 9-4 to save the circuit data to a file on your hard drive.

Step 12 Complete the "DLP-A354 Provision SONET DCC Terminations" task on page 6-4 at the end nodes; provision the slot in each node that is not already in the SDCC Terminations list (in the Figure 15-1 example, Port 1 of Node 1/Slot 5 and Port 1 of Node 3/Slot 13).

Step 13 For circuits provisioned on an STS that is now part of the protection bandwidth (STSs 7 to 12 for an OC-12 BLSR, STSs 25 to 48 for an OC-48 BLSR, and STSs 97 to 192 for an OC-192 BLSR), delete and recreate each circuit:

- **a.** Complete the "DLP-A333 Delete Circuits and DWDM Optical Channel Network Connections" task on page 11-18 for one circuit.
- **b.** Create the circuit on STSs 1 to 6 for an OC-12 BLSR, STSs 1 to 24 for an OC-48 BLSR, or STSs 1 to 96 for an OC-192 BLSR on the fiber that served as the protect fiber in the linear ADM. See the "NTP-A189 Create a Manually Routed OC-N Circuit" procedure on page 8-47 for instructions.
- **c.** Repeat Steps a and b for each circuit residing on a BLSR protect STS.

Step 14 Complete the "NTP-A126 Create a BLSR" procedure on page 6-18 to put the nodes into a BLSR.

Stop. You have completed this procedure.

DLP-A189 Verify that a 1+1 Working Slot is Active

Purpose	This task verifies that a working slot in a 1+1 protection scheme is active (and that the protect slot is in standby).
Tools/Equipment	None
Prerequisite Procedures	DLP-A60 Log into CTC, page 3-24
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Maintenance or higher

Step 1 In node view, click the **Maintenance > Protection** tabs.

Step 2 In the Selected Group area, verify that the working slot/port is shown as Working/Active. If so, this task is complete.

Step 3 If the working slot says Working/Standby, perform a Manual switch on the working slot:

a. In the Selected Group area, choose the Protect/Active slot.

a. In the Switch Commands field, choose **Manual**.

b. Click **Yes** in the confirmation dialog box.

Step 4 Verify that the working slot is carrying traffic (Working/Active).

Note If the slot is not active, look for conditions or alarms that might be preventing the card from carrying working traffic. Refer to the *Cisco ONS 15454 Troubleshooting Guide*.

Step 5 When the working slot is carrying traffic, clear the Manual switch:

a. In the Switch Commands field, choose **Clear**.

b. Click **Yes** in the confirmation dialog box.

Step 6 Verify that the working slot does not revert to Standby, which might indicate a problem on the working span.

Step 7 Return to your originating procedure (NTP).

NTP-A156 Convert a Point-to-Point or Linear ADM to a Path Protection

Purpose	This procedure upgrades a point-to-point system to a path protection.
Tools/Equipment	None

Prerequisite Procedures	NTP-A124 Provision a Point-to-Point Network, page 6-3
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Caution This procedure is service affecting. All circuits are deleted and reprovisioned.

Step 1 Complete the "DLP-A60 Log into CTC" task on page 3-24 at a node on the point-to-point or linear ADM. If you are already logged in, continue with Step 2.

Step 2 Complete the "DLP-A298 Check the Network for Alarms and Conditions" task on page 15-3.

Step 3 Complete the "DLP-A189 Verify that a 1+1 Working Slot is Active" task on page 15-6 for each node.

Step 4 Complete the "DLP-A155 Delete a Protection Group" task on page 12-20 for each 1+1 protection group that supports the point-to-point or linear ADM span.

Step 5 Complete the "DLP-A354 Provision SONET DCC Terminations" task on page 6-4 at the protect cards in all nodes that will be part of the path protection.

Step 6 Complete the "DLP-A333 Delete Circuits and DWDM Optical Channel Network Connections" task on page 11-18 and the "NTP-A188 Create an Automatically Routed OC-N Circuit" procedure on page 8-42 to delete and recreate the circuits one at a time.

Note If you want to add additional nodes to the path protection, see the "NTP-A105 Add a Path Protection Node" procedure on page 16-14.

Note A path protection is the default configuration if the cards installed are installed and the DCCs are configured.

Stop. You have completed this procedure.

NTP-A210 Convert a Path Protectionto a Two-Fiber BLSR

Purpose	This procedure converts a path protection to a two-fiber BLSR.
Tools/Equipment	None
Prerequisite Procedures	NTP-A44 Provision Path Protection Nodes, page 6-36
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Caution This procedure is service affecting. All circuits on the ring are deleted and reprovisioned.

Caution Read through this procedure completely before beginning the conversion.

Note Prior to beginning this procedure, you should have a unique ring name to identify the new BLSR and a unique node ID number for each node on the ring.

Note Prior to beginning this procedure, optical transmit and receive levels should be in their acceptable range as shown in Table 2-5 on page 2-31.

Step 1 Complete the "DLP-A60 Log into CTC" task on page 3-24 at a node on the path protection. If you are already logged in, continue with Step 2.

Step 2 Complete the "DLP-A298 Check the Network for Alarms and Conditions" task on page 15-3.

Step 3 On the network map, right-click a span adjacent to the node you are logged into. A shortcut menu appears.

Step 4 From the shortcut menu, click **Circuits**. The Circuits on Span window appears.

Step 5 Verify that the total number of active STS circuits does not exceed 50 percent of the span bandwidth. In the Circuits column there is a block titled "Unused." This number should exceed 50 percent of the span bandwidth.

Note If the span is an OC-48, no more than 24 STSs can be provisioned on the span. If the span is an OC-192, no more than 96 STSs can be provisioned on the span. If the span is an OC-12, no more than 6 STSs can be provisioned on the span.

Caution If the first half of the capacity is exceeded, this procedure cannot be completed. Bandwidth must be 50 percent unassigned to convert to BLSR. Refer to local procedures for relocating circuits if these requirements are not met.

Step 6 Repeat Steps 1 through 5 for each node in the path protection that you will convert to a BLSR. When all nodes comply with Step 5, continue with the next step.

Step 7 Save all circuit information:

a. In network view, click the **Circuits** tab.

b. Record the circuit information using one of the following options:

- From the File menu, click **Print** to print the circuits table. See the "DLP-A515 Print CTC Data" task on page 9-2 for more information.
- From the File menu, click **Export** and choose the data format: HTML, CSV (comma separated values), or TSV (tab separated values). Click **OK** and save the file in a temporary directory. See the "DLP-A516 Export CTC Data" task on page 9-4 for more information.

Step 8 Delete the circuits:

Note This method uses the network view. To delete circuits one at a time from each node, see the "NTP-A278 Modify and Delete Overhead Circuits" procedure on page 11-19.

a. In network view, click the **Circuits** tab. All circuits on the ring appear.

b. With the **Ctrl** key pressed, click each circuit. Each line turns dark blue as it is selected.

c. After all circuits have been selected, click **Delete**. Allow several minutes for processing; the actual length of time depends on the number of circuits in the network.

Step 9 Complete the "NTP-A126 Create a BLSR" procedure on page 6-18 to create the BLSR.

Step 10 To recreate the circuits, see Chapter 8, "Create Circuits and VT Tunnels" and choose the applicable procedure for the circuit type you want to enter.

Note To add additional nodes to a BLSR, see the "NTP-A212 Add a BLSR Node" procedure on page 16-1.

Stop. You have completed this procedure.

NTP-A211 Convert a Two-Fiber BLSR to a Four-Fiber BLSR

Purpose	This procedure upgrades a two-fiber BLSR to a four-fiber BLSR. The conversion will be easier if the same east and west configuration is used on all nodes being upgraded.
Tools/Equipment	None
Prerequisite Procedures	NTP-A126 Create a BLSR, page 6-18
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	Provisioning or higher

Note Two-fiber OC-48 or OC-192 BLSRs can be converted to four-fiber BLSRs. To convert, install two additional OC-48 or OC-192 cards at each two-fiber BLSR node, then log into CTC and convert the BLSR from two-fiber to four-fiber. The fibers that were divided into working and protect bandwidths for the two-fiber BLSR are now fully allocated for working BLSR traffic. A span upgrade can be performed prior to the two-fiber to four-fiber BLSR conversion.

Note BLSR protection channel access (PCA) circuits, if present, will remain in their existing STSs. Therefore, they will be located on the working path of the four-fiber BLSR and will have full BLSR protection. To route PCA circuits on protection channels in the four-fiber BLSR, delete and recreate the circuits after the upgrade. For example, if you upgrade a two-fiber OC-48 BLSR to four-fiber, PCA circuits on the protection STSs (STSs 25 to 48) in the two-fiber BLSR will remain in their existing STSs, which are working STSs in the four-fiber BLSR. Deleting and recreating the OC-48 PCA circuits moves the

circuits to STSs 1 to 24 in the protect bandwidth of the four-fiber BLSR. To delete circuits, see the "NTP-A278 Modify and Delete Overhead Circuits" procedure on page 11-19. To create circuits, see Chapter 8, "Create Circuits and VT Tunnels."

Note Prior to beginning this procedure, optical transmit and receive levels should be in their acceptable range as shown in Table 2-5 on page 2-31.

Step 1 Complete the "DLP-A60 Log into CTC" task on page 3-24 at one of the two-fiber nodes that you want to convert.

Step 2 Complete the "DLP-A298 Check the Network for Alarms and Conditions" task on page 15-3.

Step 3 Complete the "NTP-A16 Install the OC-N Cards" procedure on page 2-12 to install two OC-48 or OC-192 cards at each BLSR node. You must install the same OC-N card rate as the two-fiber BLSR.

Step 4 Connect the fiber to the new cards. Use the same east-west connection scheme that was used to create the two-fiber connections. See the "NTP-A247 Install Fiber-Optic Cables on OC-N Cards" procedure on page 2-29.

Step 5 Complete the "DLP-A214 Change the Service State for a Port" task on page 6-6 to enable (put in service) the ports for each new OC-N card.

Step 6 Test the new fiber connections using procedures standard for your site.

Step 7 Convert the BLSR:

a. Display the network view and click the **Provisioning > BLSR** tabs.

b. Choose the two-fiber BLSR you want to convert then click **the Upgrade to 4 Fiber** button.

c. In the Upgrade BLSR dialog box, set the amount of time that will pass before the traffic reverts to the original working path after the condition that caused the switch has been resolved. The default is 5 minutes.

d. Click **Next**.

e. Assign the east and west protection ports:

- West Protect—Select the west BLSR port that will connect to the west protect fiber from the drop-down menu.
- East Protect—Select the east BLSR port that will connect to the east protect fiber from the drop-down menu.

f. Click **Finish**.

Step 8 Click the **Alarms** tab.

a. Verify that the alarm filter is not on. See the "DLP-A227 Disable Alarm Filtering" task on page 9-32 as necessary.

b. Verify that no unexplained alarms appear on the network. If alarms appear, investigate and resolve them before continuing. Refer to the *Cisco ONS 15454 Troubleshooting Guide* for procedures.

Step 9 Complete the "NTP-A176 Four-Fiber BLSR Acceptance Test" procedure on page 6-30.

Stop. You have completed this procedure.

NTP-A159 Modify a BLSR

Purpose	This procedure changes a BLSR ring name, node ID, or ring and span reversion times.
Tools/Equipment	None
Prerequisite Procedures	NTP-A126 Create a BLSR, page 6-18
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 Complete the "DLP-A60 Log into CTC" task on page 3-24 at a node in the BLSR you want to modify. If you are already logged in, continue with Step 2.

Step 2 Complete the "DLP-A298 Check the Network for Alarms and Conditions" task on page 15-3.

Note Some or all of the following alarms appear during BLSR setup: E-W MISMATCH, RING MISMATCH, APSCIMP, APSDFLTK, and BLSROSYNC. The alarms clear after you configure all the nodes in the BLSR. For definitions of these alarms, see the *Cisco ONS 15454 Troubleshooting Guide*.

Step 3 To change the BLSR ring name or the ring or span reversion times, complete the following steps. If you want to change a node ID, continue with Step 4.

a. In network view, click the **Provisioning** > **BLSR** tabs.

b. Click the BLSR you want to modify and click **Edit**.

c. In the BLSR window, change any of the following:

- Ring Name—Assign a ring name. The name can be from 1 to 6 characters in length. The alphanumeric character strings that can be used are 0 to 9 and A to Z. You can combine numbers and letters and use upper or lower case letters. Do not use the character string "All" in either upper or lower case letters because it is a TL1 keyword. Do not choose a name that is already assigned to another BLSR.
- Reversion time—If needed, change the amount of time that will pass before the traffic reverts to the original working path after a ring switch.
- Span Reversion—(Four-fiber BLSRs only) If needed, change the amount of time that will pass before the traffic reverts to the original working path after a span switch.

d. Click **Apply**.

If you changed the ring name, the BLSR window closes automatically. If you only changed a reversion time, close the window by choosing **Close** from the File menu.

Step 4 As needed complete the "DLP-A326 Change a BLSR Node ID" task on page 15-12; otherwise, continue with Step 5.

Step 5 In network view, verify the following:

- A green span line appears between all BLSR nodes.
- All E-W MISMATCH, RING MISMATCH, APSCIMP, DFLTK, BLSROSYNC, and Node ID Mismatch alarms are cleared.

Note For definitions of these alarms, see the *Cisco ONS 15454 Troubleshooting Guide*.

Stop. You have completed this procedure.

DLP-A326 Change a BLSR Node ID

Purpose	This task changes a BLSR node ID.
Tools/Equipment	None
Prerequisite Procedures	DLP-A60 Log into CTC, page 3-24
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 From the View menu choose **Go to Network View**.

Step 2 On the network map, double-click the node with the node ID you want to change.

Step 3 Click the **Provisioning** > **BLSR** tabs.

Step 4 Choose a Node ID number. Do not choose a number already assigned to another node in the same BLSR.

Step 5 Click **Apply**.

Step 6 Return to your originating procedure (NTP).

NTP-A228 Manage BLSR Manual Ring Switches

Purpose	This procedure initiates or clears a BLSR Manual ring switch.
Tools/Equipment	None
Prerequisite Procedures	NTP-A126 Create a BLSR, page 6-18
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 Complete the "DLP-A60 Log into CTC" task on page 3-24 at a node in the BLSR you want to modify. If you are already logged in, continue with Step 2.

Step 2 As needed, complete the "DLP-A301 Initiate a BLSR Manual Ring Switch" task on page 15-13.

Step 3 As needed, complete the "DLP-A241 Clear a BLSR Manual Ring Switch" task on page 15-13.

Stop. You have completed this procedure.

DLP-A301 Initiate a BLSR Manual Ring Switch

Purpose	This task performs a BLSR Manual ring switch.
Tools/Equipment	None
Prerequisite Procedures	DLP-A60 Log into CTC, page 3-24
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 From the View menu choose **Go to Network View**.

Step 2 Click the **Provisioning** > **BLSR** tabs.

Step 3 Choose the BLSR and click **Edit**.

Tip To move an icon to a new location, for example, to see BLSR channel (port) information more clearly, click an icon and drag and drop it in a new location.

Step 4 Right-click any BLSR node channel (port) and choose **Set West Protection Operation** (if you chose a west channel) or **Set East Protection Operation** (if you chose an east channel).

Note The squares on the node icons represent the BLSR working and protect channels. You can right-click either channel. For four-fiber BLSRs, the squares represent ports. Right-click either working port.

Step 5 In the Set West Protection Operation dialog box or the Set East Protection Operation dialog box, choose **MANUAL RING** from the drop-down menu. Click **OK**.

Step 6 Click **Yes** in the two Confirm BLSR Operation dialog boxes.

Step 7 Verify that the channel (port) displays the letter “M” for Manual ring. Also verify that the span lines between the nodes where the Manual switch was invoked turn purple, and that the span lines between all other nodes turn green on the network view map. This confirms the Manual switch.

Step 8 From the File menu, choose **Close**.

Step 9 Return to your originating procedure (NTP).

DLP-A241 Clear a BLSR Manual Ring Switch

Purpose	This task clears a Manual ring switch.
Tools/Equipment	None
Prerequisite Procedures	DLP-A60 Log into CTC, page 3-24
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 From the View menu choose **Go to Network View**.

Step 2 Click the **Provisioning** > **BLSR** tabs.

Step 3 Choose the BLSR and click **Edit**.

Tip To move an icon to a new location, for example, to see BLSR channel (port) information more clearly, click an icon on the Edit BLSR network graphic and while pressing **Ctrl**, drag the icon to a new location.

Step 4 Right-click the BLSR node channel (port) where the Manual ring switch was applied and choose **Set West Protection Operation** or **Set East Protection Operation**, as applicable.

Step 5 In the dialog box, choose **CLEAR** from the drop-down menu. Click **OK**.

Step 6 Click **Yes** on the Confirm BLSR Operation dialog box. The letter "M" is removed from the channel (port) and the span turns green on the network view map.

Step 7 From the File menu, choose **Close**.

Step 8 Return to your originating procedure (NTP).

NTP-A286 Convert DWDM Nodes to Hybrid Nodes

Purpose	This procedure upgrades an OSCM card to an OSC-CSM card. OSCM cards use Slots 8 and 10 which are required for cross-connect cards in TDM and DWDM hybrid configurations. The OSC-CSM cards use Slots 1 to 6 and 12 to 17.
Tools/Equipment	Two OSC-CSM cards
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	Maintenance or higher

Note This is an in-service procedure and is not traffic affecting.

Note This procedure only applies to the OSCM cards that are installed in nodes running Software Release 4.6. You cannot perform this upgrade on software released prior to Software R4.6.

Note Downgrade procedures from OSC-CSM cards to OSCM cards are not supported. Contact Cisco Technical Assistance Center (TAC) for more information Contact Cisco Technical Assistance Center (TAC) for more information, see the "Obtaining Technical Assistance" section on page lviii.

Step 1 Complete the "DLP-A60 Log into CTC" task on page 3-24 at the node where you will perform the upgrade. If you are already logged in, continue with Step 2.

Step 2 According to local site practice, complete the "NTP-A108 Back Up the Database" procedure on page 17-7.

Step 3 If you have timing set up on the OSCM card, delete the timing source:

a. In node view, click the **Provisioning > Timing tabs.**

b. Scroll down to the Reference Lists pane.

c. In the NE Reference column, select **Internal Clock** from the drop-down menu for all entries where the selected Clock Source is the OSCM that you are removing.

d. Click **Apply**.

Step 4 If you have overhead circuits on the node, complete the "DLP-A334 Delete Overhead Circuits" task on page 11-21.

Step 5 Delete the DWDM ring ID:

a. In node view, click the **Provisioning > DCC/GCC/OSC** > **OSC** tabs.

b. Select the DWDM Ring ID you want to delete and click **Delete**.

c. In the Delete DWDM Ring ID confirmation box, click **Yes**. Confirm that the changes appear.

Step 6 If you have OSC terminations, complete the "DLP-A361 Delete a DWDM OSC Termination" task on page 12-22.

Step 7 Delete the OSCM card WDM-ANS connections:

a. In node view, click the **Provisioning > WDM-ANS > Connections** tabs.

b. Select the connection to be deleted.

c. Click **Delete**.

d. From the Delete Optical Link dialog box, click **Yes**.

Step 8 Delete the card from CTC:

a. In node view, right-click the OSCM card.

b. Select **Delete Card** from the menu.

The card name disappears and the slot turns gray.

Step 9 Remove cables from the OSCM OSC ports.

Step 10 Physically replace the deleted OSCM card on the ONS 15454 with an OSC-CSM card:

Note The OSCM card and OSC-CSM card do not have the same slot requirements.

a. Open the OSCM card ejectors.

b. Slide the card out of Slots 8 or 10.

c. Open the ejectors on the OSC-CSM card.

d. Slide the OSC-CSM card into the slot along the guide rails. Use Slots 1 to 6 or 12 to 17 according to your site plan.

e. Close the ejectors.

Note On the OSC-CSM card the fail LED above the ACT/STBY LED becomes red, blinks for several seconds, and turns off. The ACT/STBY LED turns green and remains on. In node view, the OSC-CSM appears green.

Step 11 If an OSCM card was removed from Slot 8 and an OSC-CSM card was installed in Slots 12—17, modify the OSC-CSM line direction from east-to-west to west-to-east.

Note The MetroPlanner configuration file will label the OSC-CSM card as west even if it is installed in the east-side of the node.

a. To modify OSC-CSM card line direction, double-click the OSC-CSM card from node view.
b. Click the **Provisioning** > **Optical Line** > **Parameter** tabs.
c. In the port number 2 line, click the Line Direction drop-down menu and choose **West to East**.
d. Click **Apply**.

Step 12 If an OSCM card was removed from Slot 10 and an OSC-CSM card was installed in Slots 1—6, modify the OSC-CSM line direction from west-to-east to east-to-west.

Note The MetroPlanner configuration file will label the OSC-CSM card as east even if it is installed in the west-side of the node.

a. To modify OSC-CSM card line direction, double-click the OSC-CSM card in node view.

   The card view opens.
b. Click the **Provisioning** > **Optical Line** > **Parameter** tabs.
c. In the port number 2 line, click the Line Direction drop-down menu and choose **East to West**.
d. Click **Apply**.

Step 13 Calculate default connections using WDM-ANS:

a. Click the CTC up arrow to get back to node view.
b. In node view, click the **Provisioning** > **WDM-ANS** > **Connections** tabs.
c. Click the **Calculate Connections** button.

Step 14 Connect the cables from the OSC-CSM LINE ports to the OPT-BST OSC ports. Follow the recommended connections that were automatically calculated in the **Connections** tab described in Step 13.

Step 15 Launch ANS port regulation:

a. In node view, click the **Provisioning** > **WDM-ANS** > **Port Status** tabs.
b. Click the **Launch ANS** button.
c. In the Link Status column the ports change to Regulated.

Step 16 Create OSC terminations starting from the OSC-CSM card. Complete the "DLP-A342 Provision OSC Terminations" task on page 5-11.

Step 17 Complete "DLP-A345 Provision the Ring ID" task on page 7-9.

Step 18 (Optional) If you want to set up timing on the OSC-CSM card, create the timing source:

a. In node view, click the **Provisioning > Timing tabs.**

b. Scroll down to the Reference Lists pane.

c. In the NE Reference column, select **Internal Clock** from the drop-down menu for all entries where the selected Clock Source is the OSCM that you are adding.

d. Click **Apply**.

Step 19 (Optional) Complete the "NTP-A194 Create Overhead Circuits" procedure on page 8-93.

Step 20 Repeat Steps 3 through 19 for each OSCM card you are replacing in the node.

Step 21 If you are installing cross-connect cards, complete the "DLP-A37 Install the XC, XCVT, or XC10G Cards" task on page 2-9.

Stop. You have completed this procedure.