Manage Circuits

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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.

This chapter explains how to manage Cisco ONS 15454 electrical, optical (OC-N), Ethernet, and virtual concatenated (VCAT) circuits. For information on SDH tunneling, refer to the "SDH Tunneling Over Cisco ONS 15454 SONET MSPP Systems" Application Note.

Before You Begin

To create circuits, see Chapter 6, "Create Circuits and VT Tunnels."

To clear any alarm or trouble conditions, refer to the *Cisco ONS 15454 Troubleshooting Guide*.

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

1. NTP-A329 Locate and View Circuits, page 7-2—Complete as needed.

2. NTP-A200 View Cross-Connect Card Resource Usage, page 7-3—Complete as needed.

3. NTP-A151 Modify and Delete Circuits, page 7-4—Complete as needed to edit a circuit name; change the active and standby colors of spans; change signal fail (SF) and signal degrade (SD) thresholds, reversion time, and path payload defect indication (PDI-P) settings for path protection circuits; or add or delete a VCAT member.

4. NTP-A278 Modify and Delete Overhead Circuits and Server Trails, page 7-5—Complete as needed to change a tunnel type, repair an IP circuit, or delete overhead circuits.

5. NTP-A78 Create a Monitor Circuit, page 7-5—Complete as needed to monitor traffic on primary bidirectional circuits.

6. NTP-A328 Create a J0 Section Trace, page 7-7—Complete as needed to monitor interruptions or changes to circuit traffic.

7. NTP-A79 Create a J1 Path Trace, page 7-8—Complete as needed to monitor interruptions or changes to circuit traffic.

8. NTP-A293 Create a J2 Path Trace, page 7-9—Complete as needed to monitor interruptions or changes to circuit traffic.

9. NTP-A334 Bridge and Roll Traffic, page 7-11—Complete as needed to bridge and roll traffic.

10. NTP-A298 Reconfigure Circuits, page 7-12—Complete as needed to reconfigure circuits.

11. NTP-A301 Merge Circuits, page 7-13—Complete as needed to merge circuits.

12. NTP-A325 Manage VLANs, page 7-13—Complete as needed to view, create, or delete VLANs.

13. NTP-A348 Display IEEE 802.17 RPR Circuits, page 7-14—Complete as needed to view a map or list of IEEE 802.17 RPR circuits between ML-Series cards.

NTP-A329 Locate and View Circuits

Purpose	This procedure allows you to locate and view circuits and spanning tree information. You can also export circuit data from the Circuits and Edit Circuits windows.
Tools/Equipment	None
Prerequisite Procedures	Circuit creation procedure(s) in Chapter 6, "Create Circuits and VT Tunnels"
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

Step 1 Complete the "DLP-A60 Log into CTC" task on page 17-62 at a node on the network where you want to view the circuits. If you are already logged in, continue with Step 2.

> **Note** Do not check Disable Circuit Management in the Login dialog box. No circuits appear if this option is checked.

Step 2 As needed, complete the "DLP-A416 View Circuit Information" task on page 21-2.

Step 3 As needed, complete the "DLP-A131 Search for Circuits" task on page 18-14.

Step 4 As needed, complete the "DLP-A262 Filter the Display of Circuits" task on page 19-42.

Step 5 As needed, complete the "DLP-A229 View Circuits on a Span" task on page 19-18.

Step 6 As needed, complete the "DLP-A454 View the BLSR STS Squelch Table" task on page 21-34.

Step 7 As needed, complete the "DLP-A455 View the BLSR VT Squelch Table" task on page 21-35.

Step 8 As needed, complete the "DLP-A430 View Spanning Tree Information" task on page 21-9.

Step 9 As needed, complete the "DLP-A532 Export CTC Data" section on page 22-33.

Stop. You have completed this procedure.

NTP-A200 View Cross-Connect Card Resource Usage

Purpose	This procedure allows you to view the percentage of cross-connect card resources used by circuits that traverse or terminate at an ONS 15454.
Tools/Equipment	XCVT, XC10G, or XC-VXC-10G cards must be installed.
Prerequisite Procedures	DLP-A37 Install the XCVT, XC10G, or XC-VXC-10G Cards, page 17-43
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

Step 1 Complete the "DLP-A60 Log into CTC" task on page 17-62 at the node where you want to view the cross-connect card resource usage. If you are already logged in, continue with Step 2.

Step 2 Click the **Maintenance > Cross-Connect > Resource Usage** tabs.

Step 3 In the Summary area of the Resources Usage tab, view the following information:

- STS-1 Matrix—Provides the percent of cross-connect card STS-1 path resources that are in use. 288 STS-1 paths are available for XCVT cards; 1152 STS-1 paths are available for XC10G and XC-VXC-10G cards.

- VT Matrix Ports—Provides the percent of cross-connect card VT matrix ports that are in use. Each port is one STS in size, and each can transport 28 VT1.5s or 21 VT2s. 24 VT matrix ports are available for the XCVT and XC10G cards. 96 VT matrix ports are available for the XC-VXC-10G cards.

- VT Matrix—Provides the percent of VT matrix resources that are in use. 672 are available for the XCVT and XC10G cards. (672 is the number of VT matrix ports [24] multiplied by the number of VT1.5s in an STS [28].) The VT matrix on the XC-VXC-10G has capacity for 2688 VT1.5 terminations (1344 VT1.5 bidirectional circuits) or 2016 VT2 terminations (1008 VT2 bidirectional circuits).

Step 4 In the VT Matrix Port Detail section, you can view details of the VT Matrix Port usage:

- Drop—Identifies the source slot, port, and STS.

- Tunnel Name—Displays the tunnel name if the port is used by a VT tunnel. VT tunnels use VT matrix ports on the tunnel source and destination nodes. (VT tunnels do not use matrix resources on pass-through nodes.)

- % Used—Shows the percent of the matrix port that are in use. For example, each matrix port can carry 28 VT1.5s; if one STS carries seven VT1.5 circuits, the matrix port will be 25 percent used.

- Usage—Shows the port usage. For example, if one STS carries seven VT1.5 circuits, the matrix port will show that 7 of 28 VT1.5 circuits are in use.

Step 5 As needed, you can perform the following actions:

- Click the **Refresh** button to see an updated XC Resources view. For example, if other users create circuits while you view the XC Resources tab, click **Refresh** to see the effects those circuits have on the VT matrix usage.

- Click the **Delete** button to delete STSs that use VT matrix resources but no longer carry VT circuits. This occasionally occurs when many VT circuits are added and deleted over a period of time. Stranded STSs appear as STSs with 0 percent usage in the VT Matrix Port Detail area. If stranded STSs appear, click the STS, then click **Delete** to free VT matrix capacity.

Note   The Delete button requires a Superuser security level.

Note   VT tunnels might appear as STSs with 0 percent capacity used. These cannot be deleted.

Stop. You have completed this procedure.

NTP-A151 Modify and Delete Circuits

Purpose	This procedure modifies and deletes ONS 15454 circuits and tunnels.
Tools/Equipment	None
Prerequisite Procedures	Circuits must exist on the network. See Chapter 6, "Create Circuits and VT Tunnels" for circuit creation procedures.
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 17-62 at a node containing the circuit that you want to modify. If you are already logged in, continue with Step 2.

Step 2   As needed, complete the "DLP-A230 Change a Circuit Service State" task on page 19-19.

Step 3   As needed, complete the "DLP-A231 Edit a Circuit Name" task on page 19-20.

Step 4   As needed, complete the "DLP-A232 Change Active and Standby Span Color" task on page 19-21.

Step 5   As needed, complete the "DLP-A233 Edit Path Protection Circuit Path Selectors" task on page 19-22.

Step 6   As needed, complete the "DLP-A263 Edit Path Protection Dual-Ring Interconnect Circuit Hold-Off Timer" task on page 19-44.

Step 7   As needed, complete the "DLP-A333 Delete Circuits" task on page 20-21.

Step 8   As needed, complete the "DLP-A437 Change a VCAT Member Service State" task on page 21-15.

Step 9   As needed, complete the "DLP-A384 Add a Member to a VCAT Circuit" task on page 20-79.

Step 10   As needed, complete the "DLP-A385 Delete a Member from a VCAT Circuit" task on page 20-83.

Stop. You have completed this procedure.

NTP-A278 Modify and Delete Overhead Circuits and Server Trails

Purpose	This procedure changes the tunnel type, repairs IP circuits, and deletes overhead circuits and server trails.
Tools/Equipment	None
Prerequisite Procedures	Circuits must exist on the network. See Chapter 6, "Create Circuits and VT Tunnels."
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

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Caution   Deleting circuits can be service affecting and should be performed during a maintenance window.

Step 1   Complete the "DLP-A60 Log into CTC" task on page 17-62 for a node on the network where you want to delete the circuit. If you are already logged in, continue with Step 2.

Step 2   As needed, complete the "DLP-A332 Change Tunnel Type" task on page 20-20.

Step 3   As needed, complete the "DLP-A336 Repair an IP Tunnel" task on page 20-24.

Step 4   As needed, complete the "DLP-A334 Delete Overhead Circuits" task on page 20-22.

Step 5   As needed, complete the "DLP-A453 Delete a Server Trail" task on page 21-33.

Stop. You have completed this procedure.

NTP-A78 Create a Monitor Circuit

Purpose	This procedure creates a monitor circuit that monitors traffic on primary, bidirectional circuits.
Tools/Equipment	None
Prerequisite Procedures	Bidirectional (two-way) circuits must exist on the network. See Chapter 6, "Create Circuits and VT Tunnels" for circuit creation procedures.
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

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Note   Monitor circuits cannot be used with EtherSwitch circuits.

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Note   For unidirectional circuits, create a drop to the port where the test equipment is attached.

Step 1 Complete the "DLP-A60 Log into CTC" task on page 17-62 at a node on the network where you will create the monitor circuit. If you are already logged in, continue with Step 2.

Step 2 From the View menu, choose **Go to Network View**.

Step 3 Click the **Circuits** tab.

Step 4 Choose the bidirectional (two-way) circuit that you want to monitor and click **Edit**.

Step 5 Verify that the circuit name is no longer than 44 characters. Monitor circuits append a "_MON" to the circuit name. If the name is longer than 44 characters, edit the name in the Name field, then click **Apply**.

Step 6 In the Edit Circuit window, click the **Monitors** tab.

The Monitors tab displays ports that you can use to monitor the circuit.

> **Note** The Monitors tab is only available when the circuit has a DISCOVERED status.

Step 7 On the Monitors tab, choose the monitor source port. The monitor circuit will display traffic coming into the node at the port you choose.

> **Note** In Figure 7-1, you would choose either the DS1-14 card (to test circuit traffic entering Node 2 on the DS1-14) or the OC-N card at Node 1 (to test circuit traffic entering Node 1 on the OC-N card).

Step 8 Click **Create Monitor Circuit**.

Step 9 In the Circuit Destination section of the Circuit Creation wizard, choose the destination node, slot, and port, and as applicable, STS, VT, and/or DS1 for the monitored circuit.
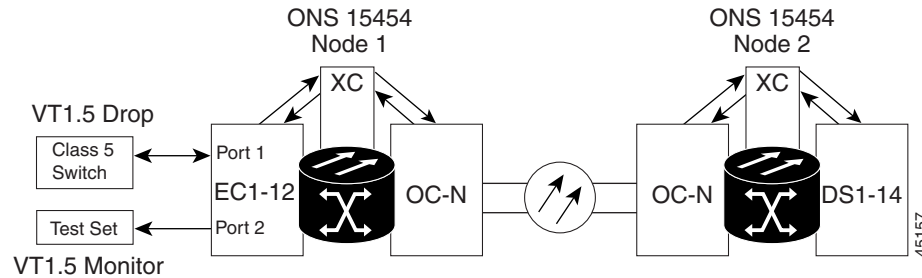
> **Note** In the Figure 7-1 example, the monitor circuit destination is Port 2 on the EC1-12 card.

Step 10 Click **Next**.

Step 11 In the Circuit Routing Preferences area, review the monitor circuit information. If you want the monitor circuit routed on a bidirectional line switched ring (BLSR) protection channel, click **Protection Channel Access**.

Step 12 Click **Finish**.

Step 13 In the Edit Circuit window, click **Close**. The new monitor circuit appears on the Circuits tab.

Figure 7-1 shows a sample monitor circuit setup. VT1.5 traffic is received by Port 1 of the EC1-12 card at Node 1. To monitor the VT1.5 traffic, test equipment is plugged into Port 2 of the EC1-12 card and a monitor circuit to Port 2 is provisioned in CTC. (Circuit monitors are one-way.) This example assumes that circuits have been created.

Figure 7-1   VT1.5 Monitor Circuit Received at an EC1-12 Port

Stop. You have completed this procedure.

NTP-A328 Create a J0 Section Trace

Purpose	This procedure creates a repeated, fixed-length string of characters used to monitor interruptions or changes to traffic between nodes.
Tools/Equipment	At least one of the following cards must be installed: MRC-2.5G-4, MRC-12 or OC192-XFP.
Prerequisite Procedures	None
Required/As Needed	As needed (optional if path trace is set)
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1   Complete the "DLP-A60 Log into CTC" task on page 17-62 at a node on the network where you will create the section trace. If you are already logged in, continue with Step 2.

Step 2   In node view, double-click the MRC-2.5G-4, MRC-12 or OC192-XFP card.

Step 3   Click the **Provisioning > Line > Section Trace** tabs.

Step 4   From the Port drop-down list, choose the port for the section trace.

Step 5   From the Trace Mode drop-down list, enable the section trace expected string by choosing **Auto** or **Manual**:

- Auto—The first string received from the source port is automatically provisioned as the current expected string. An alarm is raised when a string that differs from the baseline is received.

- Manual—The string entered in the Current Expected String field is the baseline. An alarm is raised when a string that differs from the Current Expected String is received.

Step 6   In the Section Trace String Size area, click **1 byte**, **16 byte,** or **64 byte**. In the New Transmit String field, enter the string that you want to transmit. Enter a string that makes the destination port easy to identify, such as the node IP address, node name, or another string. If the New Transmit String field is left blank, the J0 transmits a string of null characters.

Step 7   If you set the Section Trace Mode field to Manual, enter the string that the destination port should receive from the source port in the New Expected String field. If you set Section Trace Mode to Auto, skip this step.

Step 8 Click the **Disable AIS and RDI if TIM-P is detected** check box if you want to suppress the alarm indication signal (AIS) and remote defect indication (RDI) when the STS Section Trace Identifier Mismatch Path (TIM-P) alarm appears. Refer to the *Cisco ONS 15454 Troubleshooting Guide* for descriptions of alarms and conditions.

Step 9 Click **Apply**.

Step 10 After you set up the section trace, the received string appears in the Received field. The following options are available:

- Click **Hex Mode** to display section trace in hexadecimal format. The button name changes to ASCII Mode. Click it to return the section trace to ASCII format.

- Click the **Reset** button to reread values from the port.

- Click **Default** to return to the section trace default settings (Section Trace Mode is set to Off and the New Transmit and New Expected Strings are null).

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Caution Clicking Default will generate alarms if the port on the other end is provisioned with a different string.

The expect and receive strings are updated every few seconds if the Section Trace Mode field is set to Auto or Manual.

Stop. You have completed this procedure.

NTP-A79 Create a J1 Path Trace

Purpose	This procedure creates a repeated, fixed-length string of characters used to monitor interruptions or changes to circuit traffic.
Tools/Equipment	ONS 15454 cards capable of transmitting and/or receiving path trace must be installed. See Table 19-3 on page 19-45 for a list of cards.
Prerequisite Procedures	Path trace can only be provisioned on OC-N (STS) circuits. See Chapter 6, "Create Circuits and VT Tunnels" for OC-N circuit creation procedures.
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

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Note You cannot create a J1 path trace on a TL1-like circuit.

Step 1 Complete the "DLP-A60 Log into CTC" task on page 17-62 at a node on the network where you will create the path trace. If you are already logged in, continue with Step 2.

Step 2 Complete the following tasks as needed:

- As needed, complete the "DLP-A264 Provision a J1 Path Trace on Circuit Source and Destination Ports" task on page 19-44.

- As needed, complete the "DLP-A137 Provision Path Trace on OC-N Ports" task on page 18-15.

Stop. You have completed this procedure.

NTP-A293 Create a J2 Path Trace

Purpose	This procedure creates a repeated, fixed-length string of characters used to monitor interruptions or changes to circuit traffic.
Tools/Equipment	DS3XM-12 card or DS1/E1-56 card
Prerequisite Procedures	See Chapter 6, "Create Circuits and VT Tunnels" for DS-3 circuit creation procedures.
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

> **Note**   You cannot create a J2 path trace on a TL1-like circuit.

> **Note**   This procedure assumes that you are setting up path trace on a bidirectional circuit and setting up transmit strings at the circuit source and destination.

Step 1   Complete the "DLP-A60 Log into CTC" task on page 17-62 at a node on the network where you will create the path trace. If you are already logged in, continue with Step 2.

Step 2   From the View menu, choose **Go to Network View**.

Step 3   Click the **Circuits** tab.

Step 4   For the VT circuit you want to monitor, verify that the source and destination ports are on a card that can transmit and receive the path trace string.

> **Note**   If neither port is on a transmit/receive card, you will not be able to complete this procedure. If one port is on a transmit/receive card and the other is on a receive-only card, you can set up the transmit string at the transmit/receive port and the receive string at the receive-only port, but you will not be able to transmit in both directions.

Step 5   Choose the VT circuit you want to trace, then click **Edit**.

Step 6   In the Edit Circuit window, click the **Show Detailed Map** check box at the bottom of the window. A detailed map of the source and destination ports appears.

Step 7   Provision the circuit source transmit string:

a.   On the detailed circuit map, right-click the circuit source port (the square on the left or right of the source node icon) and choose **Edit J2 Path Trace (port)** from the shortcut menu.

b.   In the New Transmit String field, enter the circuit source transmit string. Enter a string that makes the source port easy to identify, such as the node IP address, node name, circuit name, or another string. If the New Transmit String field is left blank, the J2 transmits a string of null characters.

c.   Click **Apply**, then click **Close**.

Step 8 Provision the circuit destination transmit string:

    a. On the detailed circuit map, right-click the circuit destination port and choose **Edit Path Trace** from the shortcut menu.

    b. In the New Transmit String field, enter the string that you want the circuit destination to transmit. Enter a string that makes the destination port easy to identify, such as the node IP address, node name, circuit name, or another string. If the New Transmit String field is left blank, the J2 transmits a string of null characters.

    c. Click **Apply**.

Step 9 Provision the circuit destination expected string:

    a. In the Circuit Path Trace window, enable the path trace expected string by choosing **Auto** or **Manual** from the Path Trace Mode drop-down list:

       • Auto—The first string received from the source port is automatically provisioned as the current expected string. An alarm is raised when a string that differs from the baseline is received.

       • Manual—The string entered in the Current Expected String field is the baseline. An alarm is raised when a string that differs from the Current Expected String is received.

    b. If you set the Path Trace Mode field to Manual, enter the string that the circuit destination should receive from the circuit source in the New Expected String field. If you set Path Trace Mode to Auto, skip this step.

    c. (Check box visibility depends on card selection) Click the **Disable AIS on C2 Mis-Match** check box if you want to suppress the AIS when a C2 mismatch occurs.

    d. Click **Apply**, then click **Close**.

> **Note** It is not necessary to set the format (16 or 64 bytes) for the circuit destination expected string; the path trace process automatically determines the format.

Step 10 Provision the circuit source expected string:

    a. In the Edit Circuit window (with Show Detailed Map chosen), right-click the circuit source port and choose **Edit Path Trace** from the shortcut menu.

    b. In the Circuit Path Trace window, enable the path trace expected string by choosing **Auto** or **Manual** from the Path Trace Mode drop-down list:

       • Auto—Uses the first string received from the port at the other path trace end as the baseline string. An alarm is raised when a string that differs from the baseline is received.

       • Manual—Uses the Current Expected String field as the baseline string. An alarm is raised when a string that differs from the Current Expected String is received.

    c. If you set the Path Trace Mode field to Manual, enter the string that the circuit source should receive from the circuit destination in the New Expected String field. If you set Path Trace Mode to Auto, skip this step.

    d. (Check box visibility depends on card selection) Click the **Disable AIS on C2 Mis-Match** check box if you want to suppress the AIS when a C2 mismatch occurs.

    e. Click **Apply**.

> **Note** It is not necessary to set the format (16 or 64 bytes) for the circuit source expected string; the path trace process automatically determines the format.

Step 11 After you set up the path trace, the received string appears in the Received field on the path trace setup window. The following options are available:

- Click **Hex Mode** to display path trace in hexadecimal format. The button name changes to ASCII Mode. Click it to return the path trace to ASCII format.

- Click the **Reset** button to reread values from the port.

- Click **Default** to return to the path trace default settings (Path Trace Mode is set to Off and the New Transmit and New Expected Strings are null).

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Caution Clicking Default will generate alarms if the port on the other end is provisioned with a different string.

The expect and receive strings are updated every few seconds if the Path Trace Mode field is set to Auto or Manual.

Step 12 Click **Close**.

The detailed circuit map indicates path trace with an M (manual path trace) or an A (automatic path trace) at the circuit source and destination ports.

Stop. You have completed this procedure.

NTP-A334 Bridge and Roll Traffic

Purpose	This procedure reroutes live traffic without interrupting service. You can use the Bridge and Roll wizard for maintenance functions such as card replacement or load balancing. A circuit consists of a source facility, destination facility(s), and intermediate facilities (path).
Tools/Equipment	None
Prerequisite Procedures	• Circuits must exist on the network. See Chapter 6, "Create Circuits and VT Tunnels" for circuit creation procedures. • To route circuits on protected ports, you must create a protection group using the "DLP-A73 Create a 1+1 Protection Group" task on page 17-78 or the "NTP-A126 Create a BLSR" procedure on page 5-12. • When a roll involves two circuits, a data communications channel (DCC) connection must exist. See the "DLP-A377 Provision Section DCC Terminations" task on page 20-69. • Use the "NTP-A329 Locate and View Circuits" procedure on page 7-2 to verify that the planned Roll To paths are in service. Verify that the planned Roll To and Roll From paths are not in the Roll Pending status, used in test access, or used in a loopback. Refer to the *Cisco ONS 15454 Troubleshooting Guide* to clear any alarms.
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning and higher

Note Using the bridge and roll feature, you can upgrade an unprotected circuit to a fully protected circuit or downgrade a fully protected circuit to an unprotected circuit.

Caution Performing bridge and roll on an STS192C might cause a traffic hit up to and including 50 ms.

Step 1 Complete the "DLP-A60 Log into CTC" task on page 17-62 at the ONS 15454 circuit source node. If you are already logged in, continue with Step 2.

Step 2 As needed, complete the "DLP-A463 Roll the Source or Destination of One Optical Circuit" task on page 21-44.

Step 3 As needed, complete the "DLP-A464 Roll One Cross-Connect from an Optical Circuit to a Second Optical Circuit" task on page 21-46.

Step 4 As needed, complete the "DLP-A465 Roll Two Cross-Connects on One Optical Circuit Using Automatic Routing" task on page 21-48 or the "DLP-A466 Roll Two Cross-Connects on One Optical Circuit Using Manual Routing" task on page 21-52.

Step 5 As needed, complete the "DLP-A467 Roll Two Cross-Connects from One Optical Circuit to a Second Optical Circuit" task on page 21-54.

Step 6 As needed, complete the "DLP-A489 Cancel a Roll" task on page 21-60.

Step 7 As needed, complete the "DLP-A468 Delete a Roll" task on page 21-56. Use caution when selecting this option. Delete a roll only if it cannot be completed or canceled. Circuits might have a PARTIAL status when this option is selected.

Stop. You have completed this procedure.

NTP-A298 Reconfigure Circuits

Purpose	This procedure rebuilds circuits, which might be necessary when a large number of circuits are in the PARTIAL status.
Tools/Equipment	None
Prerequisite Procedures	None
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 17-62. If you are already logged in, continue with Step 2.

Step 2 Click the **Circuits** tab.

Step 3 Highlight the circuits that you want to reconfigure.

Step 4 From the Tools menu, choose **Circuits > Reconfigure Circuits**.

Step 5 In the confirmation dialog box, click **Yes** to continue.

Step 6 In the notification box, view the reconfiguration result. Click **Ok**.

Stop. You have completed this procedure.

NTP-A301 Merge Circuits

Purpose	This procedure merges two circuits that create a single, contiguous path but are separate circuits because of different circuit IDs or conflicting parameters. A merge combines a single master circuit with one or more circuits.
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 Complete the . If you are already logged in, continue with Step 2.

Step 2 Click the **Circuits** tab.

Step 3 Click the circuit that you want to use as the master circuit for a merge.

Step 4 Click **Edit.**

Step 5 In the Edit Circuits window, click the **Merge** tab.

Step 6 Choose the circuits that you want to merge with the master circuit.

Step 7 Click **Merge**.

Step 8 In the confirmation dialog box, click **Yes** to continue.

Step 9 In the notification box, view the merge result. Click **Ok**.

Stop. You have completed this procedure.

NTP-A325 Manage VLANs

Purpose	This procedure allows you to view, create, or delete VLANs.
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

> **Note** Remove all unused VLANs. The recommended number of VLANs is a maximum of 100; if more than 100 VLANs exist, the E-Series cards may have problems accepting new VLANs.

Step 1 Complete the "DLP-A60 Log into CTC" task on page 17-62. If you are already logged in, continue with Step 2.

Step 2 From the Tools menu, choose **Manage VLANs**. The All VLANS dialog box appears listing all of the VLAN topologies in the network.

Step 3 Complete the following as necessary:

- To add a VLAN, complete the "DLP-A452 Create a VLAN" task on page 21-32.
- To delete a VLAN, complete the "DLP-A335 Delete VLANs" task on page 20-23.

Stop. You have completed this procedure.

NTP-A348 Display IEEE 802.17 RPR Circuits

Purpose	This procedure displays a map of and provides information about IEEE 802.17 Resilient Packet Ring (RPR) circuits between ML-Series cards. For more information about IEEE 802.17 RPR, refer to the *Cisco ONS 15454 and Cisco ONS 15454 SDH Ethernet Card Software Feature and Configuration Guide.*
Tools/Equipment	None
Prerequisite Procedures	DLP-A556 Provision the Card Mode for ML-Series Ethernet Cards, page 22-69
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

> **Note** CTC does not support the display of Cisco proprietary RPR circuit topology.

> **Note** CTC does not support provisioning or maintenance of IEEE RPR rings. You must use Cisco IOS.

Step 1 Complete the "DLP-A60 Log into CTC" task on page 17-62 at the node where you will view the circuit. If you are already logged in, continue with Step 2.

Step 2 From network, shelf, or ML-Series card view, click the **Circuits** tab and select the circuit where you want to display information.

> **Note** If you are viewing the circuits list from network or shelf view, you must look at the Source and Destination fields to determine which circuits are RPR circuits.

Step 3 Click **Tools > Circuits > Show RPR Circuit Ring**.

The map displays the following information about each IEEE 802.17 RPR circuit:

- Circuit name
- Type
- Size
- OCHNC Wlen
- Direction
- Protection
- Status
- Source
- Destination
- # of VLANs
- # of Spans
- State
- Loopback

Step 4 Repeat this procedure as necessary for additional 802.17 RPR circuits you want to display.

Stop. You have completed this procedure.