



## User Control Plane Configuration

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This chapter explains the Cisco Transport Controller (CTC) operation for configuring circuits across a core network. The chapter procedures follow:

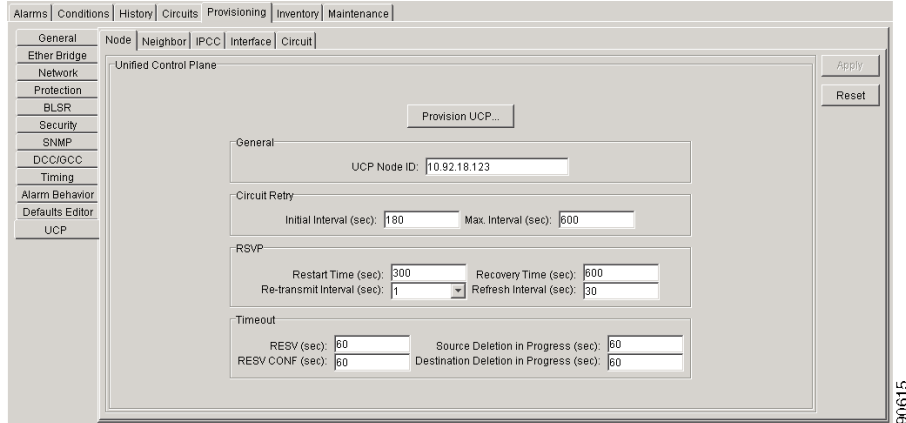
1. [2.1 Configure an ONS 15454 as User Network Interface–Client \(UNI-C\) Node, page 2-1](#)—Complete this procedure first. This procedure sets up two ONS 15454 SONET or SDH nodes as UNI-C nodes.
2. [2.2 Create an Inter-Domain Circuit, page 2-4](#)—Complete this procedure to create an inter-domain (IDC) circuit over the core network.
3. [2.3 Create a UCP-Signaled Circuit, page 2-4](#)—Complete this procedure to create a UCP-signaled circuit, which originates at a UNI-C interface in one network and terminates at another UNI-C interface in another network. This procedure is not necessary if you used CTC to create an IDC circuit.
4. [2.4 Change a Neighbor Configuration, page 2-5](#)—Complete this procedure as needed to edit a neighbor.
5. [2.5 Change an IPCC Configuration, page 2-6](#)—Complete this procedure as needed to edit an IPCC.
6. [2.6 Change a UCP Interface Configuration, page 2-6](#)—Complete this procedure as needed to edit an interface.
7. [2.7 Delete a Neighbor, IPCC, Interface, or UCP-Signaled Circuit, page 2-6](#)—Complete this procedure as needed to remove a neighbor, IPCC, interface, or user control plane (UCP)-signaled circuit.

### 2.1 Configure an ONS 15454 as User Network Interface–Client (UNI-C) Node

Use this procedure to configure an ONS 15454 SONET or SDH node as UNI-C and connect it to a core network.

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- Step 1** Log onto a node that you want to configure as UNI-C.
- Step 2** At the node view, click the **Provisioning > UCP** tabs ([Figure 2-1](#)).

Figure 2-1 UCP Tab



**Step 3** On the Node tab, verify the node-level UCP parameters, and edit as necessary:

- UCP Node ID—Node IP address
- Initial Interval—Initial retry interval for circuits released by the network (60 to 1800 seconds)
- Max. Interval—Maximum retry interval (180 to 1800 seconds; must be greater than the Circuit Retry Initial Interval)
- Restart Time—Time required for the node to restart (60 to 300 seconds); signaled to neighbors
- Re-transmit Interval—Interval for retransmitting unacknowledged messages (1 to 7 seconds)
- Recovery Time—Time required by the node to resynchronize the path and reservation states with a neighbor (300 to 1800 seconds); signaled to neighbors
- Refresh Interval—Interval for refreshing path and reservation states (30 to 4660800 seconds)
- RESV—Timeout interval while waiting for the reservation request (RESV) message (10 to 180 seconds; a connection is established when the initiating node receives a RESV message for the connection)
- RESV CONF—Timeout interval while waiting for the reservation confirmation (RESV CONF) message (10 to 180 seconds; the RESV CONF acknowledges receipt of the RESV message)
- Source Deletion in Progress—Timeout interval while the source node is cleanly deleting a call (10 to 180 seconds)
- Destination Deletion in Progress—Timeout interval while the destination node is cleanly deleting a call (10 to 180 seconds)

**Step 4** Click the **UCP Provisioning** button to start the Provision UCP wizard.

**Step 5** On the Existing Neighbors list, choose the neighbor for which you want to set up the IP control channel (IPCC) and continue with [Step 6](#). To create a neighbor, click **Create** on the Unified Control Plane Provisioning dialog box. In the Create a New Neighbor dialog box, complete the following fields and click **OK**:

- Neighbor Name—Type a neighbor name in the field (a maximum of 64 alphanumeric characters).
- Neighbor Discovery—To enable automatic neighbor discovery, check the check box. If you do not check the Neighbor Discovery check box, type the IP address of the neighbor in the Node ID field.
- Hello—To enable RSVP hello, check the check box and choose the hello interval from the drop-down list.

- Refresh Reduction—Check the check box to reduce the processing overhead requirements of refresh messages.
- Max # of retransmits—Choose the maximum number of times (2 to 5) that unacknowledged messages will be transmitted.

**Step 6** Click **Next**. The IPCC dialog box appears.

**Step 7** Complete one of the following:

- To use an existing IPCC, choose an IPCC from the Existing IPCCs list or check **Use Any IPCC**. If you check Use Any IPCC, CTC automatically selects an SDCC IPCC or routed IPCC. Continue with [Step 9](#).
- To create a new IPCC, click **Create**. In the Create New IPCC dialog box, complete the following fields and click **OK**:
  - IPCC Type—Click **Routed** for out-of-band signaling, or **SDCC** for in-band signaling.
  - SDCC—If the IPCC type is SDCC, choose a slot/port from the SDCC list (this list is disabled if the IPCC type is Routed). If the IPCC type is routed, this option is not available.
  - Local IPCC—Type the IP address (the node IP address is the default).
  - Remote IPCC—If the IPCC type is Routed, type the IP address. If the IPCC type is SDCC, this option is not available.
  - LMP Hello Interval—Choose the time interval between link management protocol (LMP) hello messages sent for this control channel.
  - LMP Hello Dead Interval—Choose the time interval that the neighbor will wait before timing out a control channel if no LMP hello message is received. This interval must be at least three times the LMP Hello Interval value.
  - MTU—If the IPCC type is SDCC, type the maximum transmission unit for point-to-point protocol (PPP) frames. If the IPCC type is routed, this option is not available.
  - CRC—If the IPCC type is SDCC, choose the cyclic redundancy code (16- or 32- bit) for point-to-point protocol (PPP) frames. If the IPCC type is routed, this option is not available.
  - Port State—If the IPCC type is SDCC, click **Set to IS** to place the port in service. If the IPCC type is routed, this option is not available.

**Step 8** From the Existing IPCCs list, choose an IPCC.

**Step 9** Click **Next**. The UCP Interface Attributes dialog box appears.

**Step 10** On the UCP Interface Attributes dialog box, complete the following fields to set the UNI-C interface attributes:

- UCP Interface—Choose the slot/port from the drop-down list. If the IPCC type is SDCC, the IPCC is the same slot/port as the UCP interface.
- Local Interface ID—If the IPCC type is Routed, type the local node ID. (This field is disabled if the IPCC type is SDCC.)
- Remote Interface ID—If the IPCC type is Routed, type the neighbor interface ID in the Remote Interface ID field. (This field is disabled when Neighbor Discovery is enabled.)
- Core Network ID—Type a numerical identifier (1 through 255) to identify the core transport network.
- TNA Address—Choose the transport network address (TNA) interface:
  - IP version 4—A unique 32-bit identifier used to address hosts on the Internet
  - IP version 6—The “next generation” protocol designed by the IETF to replace IPv4

- NSAP—Network service access point

**Step 11** Click **Finish**. A message appears asking you to verify that the local ID on this node matches the remote ID at the neighboring node. Click **OK**.



**Note** CTC will not automatically discover the neighbor and IPCC until you set up a second UNI interface.

**Step 12** Repeat Steps 2 through 11 to create the connecting UNI-C interface on the other side of the core network.



**Note** The Neighbor, IPCC, and Interface subtabs all include Create buttons. Clicking the Create button on any of these subtabs will launch the UCP Provisioning wizard. A neighbor must exist before you can create an IPCC, and an IPCC must exist before you can create an interface.

## 2.2 Create an Inter-Domain Circuit

An inter-domain circuit (IDC), or end-to-end, circuit includes both UCP-signaled and non-signaled circuits. Before you create an end-to-end IDC circuit, you must complete the [“Configure an ONS 15454 as User Network Interface–Client \(UNI-C\) Node”](#) section on page 2-1 to set up a UNI-C network element on each side of the core network. If one end of a UCP-signaled segment is an ONS 15454 SONET or SDH node and the other end is supplied and managed by another vendor, see the [“Create a UCP-Signaled Circuit”](#) section on page 2-4.

**Step 1** In node or network view, click the **Circuits** tab.

**Step 2** Use the circuit wizard to create a circuit. For specific procedures about circuit creation, refer to the Release 3.4 or later *Cisco ONS 15454 Procedure Guide* or the *Cisco ONS 15454 SDH Procedure Guide*.

## 2.3 Create a UCP-Signaled Circuit

If one end of a UCP-signaled segment is an ONS 15454 SONET or SDH node and the other end is supplied and managed by another vendor, you must use this procedure to set up the UCP-signaled circuit across the core network.

Before beginning this procedure, you must complete the [“Configure an ONS 15454 as User Network Interface–Client \(UNI-C\) Node”](#) section on page 2-1 to set up a UNI-C network element on each side of the core network.

**Step 1** At the node view, click the **Provisioning > UCP > Circuits** tabs.

**Step 2** On the Circuits subtab, click **Create**. The New UCP Signaled Circuit dialog box appears.

**Step 3** Complete the following fields and click **OK**:

- UCP Circuit Node—Click **Origin** to set the circuit as the originating UNI-C or click **Termination** to set the circuit as the terminating UNI-C.

- Data Link—Choose the interface from the drop-down list.
- Circuit Size—Choose the circuit size from the drop-down list.
- STS—Choose the STS number from the drop-down list.
- Termination TNA Address—Choose the transport network address (TNA) format (IPv4, IPv6, or NSAP), and type the IP address of the endpoint node.
- Destination Egress Label—If you selected Origin, type the destination interface ID and STS/STM information. The Destination Egress Label is used by the destination UNI-N to determine which port and STS number to include in the destination UNI-N to UNI-C message.
- Service Level—If you selected Origin, type the service level to indicate the service needed for the circuit from the core network (0 through 255). Each service level corresponds to carrier predefined characteristics, such as type of restoration (unprotected, 1+1 protection, etc.), connection setup and hold priorities, reversion strategies for the connection after failures have been repaired, and retention strategies.
- G-PID—If you selected Origin, type the generic payload identifier (G-PID) to identify the client layer of the connection (0 through 255).



**Note** G-PID values are listed in IETF RFC 3471, Generalized Multi-Protocol Label Switching (GMPLS) Signaling Functional Description.

**Step 4** Click **OK**.

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## 2.4 Change a Neighbor Configuration

The UCP > Neighbor tab lists the existing neighbors. Use the following procedure to change the neighbor configuration.

**Step 1** At node view, click the **Provisioning > UCP > Neighbor** tabs.

**Step 2** On the Neighbor subtab, edit the following fields as necessary:

- Name
- Hello
- Hello Int
- Refresh Reduct

**Step 3** Click **Apply**.

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## 2.5 Change an IPCC Configuration

The UCP > IPCC tab lists the existing IPCCs. Use the following procedure to change an IPCC configuration.

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- Step 1** At node view, click the **Provisioning > UCP > IPCC** tabs.
- Step 2** On the IPCC subtab, edit the following fields as necessary:
- Local IPCC
  - LMP Hello Integer
  - LMP Hello Dead Integer
  - MTU
  - CRC Mode
- Step 3** Click **Apply**.
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## 2.6 Change a UCP Interface Configuration

The UCP > Interface tab lists the existing interfaces. Use the following procedure to change an interface configuration.



**Note** If a circuit exists, you cannot edit the Interface fields.

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- Step 1** At node view, click the **Provisioning > UCP > Interface** tabs.
- Step 2** On the Interface subtab, edit the following fields as necessary:
- TNA Type
  - TNA Address
  - Core ID
- Step 3** Click **Apply**.
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## 2.7 Delete a Neighbor, IPCC, Interface, or UCP-Signaled Circuit

The Neighbor, IPCC, Interface, and Circuit subtabs all include Delete buttons. You must delete in the following order:

- If a neighbor has an associated IPCC, you must delete the IPCC before CTC allows you to delete the neighbor.
- If an IPCC has an associated interface, you must delete the interface before CTC allows you to delete the IPCC.

- If an interface is used in a UCP-signaled circuit, you must delete the circuit before CTC allows you to delete the interface.

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- Step 1** At node view, click the **Provisioning > UCP** tabs.
- Step 2** Click the desired subtab (**Neighbor, IPCC, Interface, or Circuit**).
- Step 3** Choose the neighbor, IPCC, interface, or circuit that you want to delete.
- Step 4** Click the **Delete** button. To delete multiple neighbors, IPCCs, interfaces, or circuits, press **Ctrl + Delete** simultaneously.
- Step 5** At the confirmation dialog box, click **Yes**.
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2.7 Delete a Neighbor, IPCC, Interface, or UCP-Signaled Circuit