



## Cisco ONS 15454 SONET/SDH Unified Control Plane Configuration Guide

Corporate Headquarters  
Cisco Systems, Inc.  
170 West Tasman Drive  
San Jose, CA 95134-1706  
USA  
<http://www.cisco.com>  
Tel: 408 526-4000  
800 553-NETS (6387)  
Fax: 408 526-4100

Text Part Number: OL-4214-01



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## About This Guide

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This section explains the objectives, intended audience, and organization of this publication and describes the conventions that convey instructions and other information.

This section provides the following information:

- [Document Objectives](#)
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- [Document Conventions](#)
- [Where to Find Safety and Warning Information](#)
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## Document Objectives

This guide explains unified control plane (UCP) concepts, provisioning, and troubleshooting for the Cisco ONS 15454 SONET and SDH systems. Before using this guide, you must test the interoperability of the ONS 15454 SONET and SDH nodes and third-party vendor nodes in the network.

Use this guide with the appropriate publications listed in the [Related Documentation](#) section.

## Audience

To use this guide, you should be familiar with Cisco or equivalent optical transmission hardware and cabling, telecommunications hardware and cabling, electronic circuitry and wiring practices, and preferably have experience as a telecommunications technician.

# Document Organization

This *Cisco ONS 15454 SONET/SDH Unified Control Plane Configuration Guide* is organized into the following chapters:

- [Chapter 1, “Overview”](#) provides an introduction to the Unified Control Plane (UCP).
- [Chapter 2, “User Control Plane Configuration”](#) provides procedures for setting up an ONS 15454 node to transport circuits in a UCP implementation.
- [Chapter 3, “Alarm Troubleshooting”](#) provides general troubleshooting procedures as well as a description of UCP alarms.

## Related Documentation

Use this *Cisco ONS 15454 SONET/SDH Unified Control Plane Configuration Guide* with the following referenced publications:

- *Cisco ONS 15454 Procedure Guide*
- *Cisco ONS 15454 Reference Manual*
- *Cisco ONS 15454 Troubleshooting Guide*
- *Cisco ONS 15454 SDH Procedure Guide*
- *Cisco ONS 15454 SDH Reference Manual*
- *Cisco ONS 15454 SDH Troubleshooting Guide*

Refer to the following standards documentation referenced in this publication:

- Optical Internetworking Forum (OIF) UNI signaling specification, User Network Interface (UNI) 1.0 Signaling Specification OIF Architecture, OAM&P, PLL, and Signaling Working Groups, OIF 2000.125.7

# Document Conventions

This publication uses the following conventions:

Convention	Application
<b>boldface</b>	Commands and keywords in body text.
<i>italic</i>	Command input that is supplied by the user.
[ ]	Keywords or arguments that appear within square brackets are optional.
{ x   x   x }	A choice of keywords (represented by x) appears in braces separated by vertical bars. The user must select one.
Ctrl	The control key. For example, where Ctrl + D is written, hold down the Control key while pressing the D key.
screen font	Examples of information displayed on the screen.
<b>boldface screen font</b>	Examples of information that the user must enter.
< >	Command parameters that must be replaced by module-specific codes.



**Note**

Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the document.



**Caution**

Means *reader be careful*. In this situation, the user might do something that could result in equipment damage or loss of data.



**Warning**

## IMPORTANT SAFETY INSTRUCTIONS

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. To see translations of the warnings that appear in this publication, refer to the translated safety warnings that accompanied this device.

**Note: SAVE THESE INSTRUCTIONS**

**Note:** This documentation is to be used in conjunction with the specific product installation guide that shipped with the product. Please refer to the Installation Guide, Configuration Guide, or other enclosed additional documentation for further details.

# Where to Find Safety and Warning Information

For safety and warning information, refer to the *Cisco ONS 15454 Installation Handbook* that accompanied the product. This publication describes the international agency compliance and safety information for the Cisco ONS 15454. It also includes translations of the safety warnings that appear in the ONS 15454 documentation.

## Obtaining Documentation

Cisco provides several ways to obtain documentation, technical assistance, and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

### Cisco.com

You can access the most current Cisco documentation on the World Wide Web at this URL:

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## Technical Assistance Center

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We categorize Cisco TAC inquiries according to urgency:

- Priority level 4 (P4)—You need information or assistance concerning Cisco product capabilities, product installation, or basic product configuration. There is little or no impact to your business operations.
- Priority level 3 (P3)—Operational performance of the network is impaired, but most business operations remain functional. You and Cisco are willing to commit resources during normal business hours to restore service to satisfactory levels.
- Priority level 2 (P2)—Operation of an existing network is severely degraded, or significant aspects of your business operations are negatively impacted by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.
- Priority level 1 (P1)—An existing network is “down,” or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

## Cisco TAC Website

The Cisco TAC website provides online documents and tools to help troubleshoot and resolve technical issues with Cisco products and technologies. To access the Cisco TAC website, go to this URL:

<http://www.cisco.com/tac>

All customers, partners, and resellers who have a valid Cisco service contract have complete access to the technical support resources on the Cisco TAC website. Some services on the Cisco TAC website require a Cisco.com login ID and password. If you have a valid service contract but do not have a login ID or password, go to this URL to register:

<http://tools.cisco.com/RPF/register/register.do>

If you are a Cisco.com registered user, and you cannot resolve your technical issues by using the Cisco TAC website, you can open a case online at this URL:

<http://www.cisco.com/tac/caseopen>

If you have Internet access, we recommend that you open P3 and P4 cases online so that you can fully describe the situation and attach any necessary files.

## Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses priority level 1 or priority level 2 issues. These classifications are assigned when severe network degradation significantly impacts business operations. When you contact the TAC Escalation Center with a P1 or P2 problem, a Cisco TAC engineer automatically opens a case.

To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to this URL:

<http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>

Before calling, please check with your network operations center to determine the Cisco support services to which your company is entitled: for example, SMARTnet, SMARTnet Onsite, or Network Supported Accounts (NSA). When you call the center, please have available your service agreement number and your product serial number.

# Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- The *Cisco Product Catalog* describes the networking products offered by Cisco Systems, as well as ordering and customer support services. Access the *Cisco Product Catalog* at this URL:

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- Cisco Press publishes a wide range of networking publications. Cisco suggests these titles for new and experienced users: *Internetworking Terms and Acronyms Dictionary*, *Internetworking Technology Handbook*, *Internetworking Troubleshooting Guide*, and the *Internetworking Design Guide*. For current Cisco Press titles and other information, go to Cisco Press online at this URL:

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- *Packet* magazine is the Cisco quarterly publication that provides the latest networking trends, technology breakthroughs, and Cisco products and solutions to help industry professionals get the most from their networking investment. Included are networking deployment and troubleshooting tips, configuration examples, customer case studies, tutorials and training, certification information, and links to numerous in-depth online resources. You can access *Packet* magazine at this URL:

<http://www.cisco.com/go/packet>

- iQ Magazine is the Cisco bimonthly publication that delivers the latest information about Internet business strategies for executives. You can access iQ Magazine at this URL:

<http://www.cisco.com/go/iqmagazine>

- Internet Protocol Journal is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

[http://www.cisco.com/en/US/about/ac123/ac147/about\\_cisco\\_the\\_internet\\_protocol\\_journal.html](http://www.cisco.com/en/US/about/ac123/ac147/about_cisco_the_internet_protocol_journal.html)

- Training—Cisco offers world-class networking training. Current offerings in network training are listed at this URL:

[http://www.cisco.com/en/US/learning/le31/learning\\_recommended\\_training\\_list.html](http://www.cisco.com/en/US/learning/le31/learning_recommended_training_list.html)





# Overview

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This chapter provides an overview of the unified control plane (UCP) and the user-network interface (UNI) implementations, supported by the ONS 15454 SONET and SDH systems. Cisco Transport Controller (CTC) releases 3.4 and later support UCP.

This chapter contains the following sections:

- [1.1 Understanding UCP, page 1-1](#)
- [1.2 UNI Implementation, page 1-1](#)

## 1.1 Understanding UCP

UCP is a software feature released for Cisco ONS 15454 SONET and SDH Releases 3.4 and later. It provides a service architecture that can manage and provision network elements (NEs) using a single management layer. For example, UCP allows a user to perform “A to Z” provisioning outside of an ONS 15454 section data communications channel (SDCC)-connected network without a higher-layer management system to communicate between subnetworks. The network infrastructure can include assorted NEs such as routers, Layer 2 (L2) and Layer 3 (L3) switches, SONET and SDH optical products, optical cross-connects, and wavelength routers.

UCP comprises two major interface types, a user-network interface (UNI) and a network-network interface (NNI). Both UNI and NNI are optical interfaces. UNI conforms to the Optical Internetworking Forum (OIF) UNI 1.0 standards. It provides data client services, rapid provisioning of SONET and SDH circuits through an optical internetwork, and signaling between a client device and a transport network element. NNI exchanges signals and routing data between NEs in a network. The difference between UNI and NNI is that UNI does not support the exchange of routing information (such as topology data) across the interface. The ONS 15454 SONET and SDH systems do not support NNI configuration.

## 1.2 UNI Implementation

This section describes the client and network roles, communication between adjacent nodes, port addressing requirements, and inter-domain circuits in a UNI implementation. The Cisco Transport Controller (CTC) is the network management tool used for UNI provisioning. All circuit capabilities supported in the ONS 15454 SONET and SDH Release 3.4 and later are available for UCP circuit provisioning.

## Client and Network Roles

UNI is divided into client (UNI-C) and network (UNI-N) roles. A UNI-C network element requests and accepts circuit provisioning information. A UNI-N network element is the node adjacent to the UNI-C node and accepts and transports circuit provisioning information across the core network. For UNI circuit provisioning, the network must meet the following requirements:

- An NE must be configured in as UNI-C and connected to a UNI-N NE. Normally, the UNI-C NE is a border NE in the client network.
- An NE must be configured as UNI-N and connected to a UNI-C NE. Normally, the UNI-C NE is a border NE in the core network.

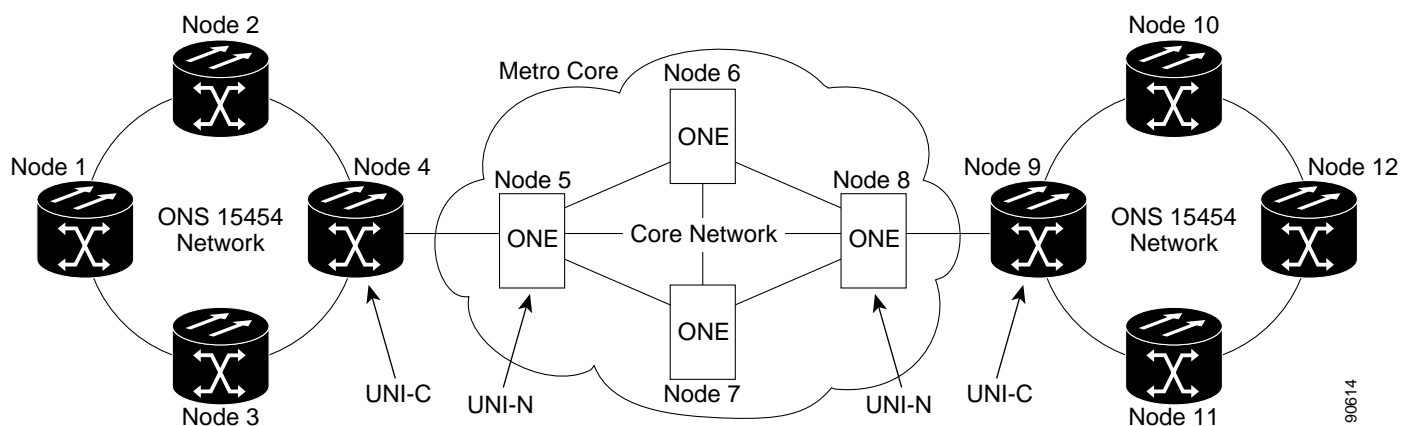
The ONS 15454 SONET and SDH Releases 3.4 and 4.0 support UNI-C provisioning.

Figure 1-1 shows the position of the ONS 15454 (either SONET or SDH) in a customer network environment. In this example, Node 4 can request Node 9 as a circuit destination. Node 5 handles the signal and establishes a circuit through the metro core. The ONS 15454 networks on either side of the core network are aware only that they are connected to the core at Node 5 and Node 8, respectively.



**Note** Nodes 5 and 8 must support the UNI-N feature for UNI-C on the ONS 15454 to work.

Figure 1-1 UNI-C Nodes Connected to the Core Network



## Adjacent Node Communication

Adjacent UNI-C and UNI-N NEs, called “neighbors,” communicate over a control channel. A control channel is a logical channel between two neighbors that have one or more links capable of carrying data. Link management protocol (LMP) establishes and maintains control channel connectivity between neighbors. LMP also enables neighbor discovery, which allows neighbors to identify connected devices; obtain UNI connectivity information; and identify and verify port-level connections, network-level addresses, and corresponding operational states for every link.

Each control channel has a unique 16-bit identification number, called a CCID. Each end of a control channel requires a local IP version 4 (IPv4) or IP version 6 (IPv6) control channel (IPCC) address. By default, this address is the internal address of each neighbor, but can be a different address.

Control channels can be in-fiber/in-band (IF/IB), which means that the control channel uses the same physical link as the data link that controls it or out-of-fiber/out-of-band (OF/OB), which means that the control channel uses a different physical path than the data links it controls. IF/IB, also called SDCC IPCC, is transported over the embedded SONET/SDH SDCC bytes between the client and the network interface. OF/OB, also called routed IPCC, is transported over the 10/100T Ethernet interface.

## Port Addressing

Each UNI-C NE must have a port configured for UCP implementation. This port is called an interface or datalink. Each port in a UNI-C connection must have an identifier called a transport network address (TNA). A TNA can be in IPv4, IPv6, or network service access point (NSAP) format.

## Inter-Domain Circuits

An inter-domain circuit (IDC) is an end-to-end circuit that can contain both UCP-signaled and non-signaled circuits. A UCP-signaled circuit is a circuit routed across the core network; it originates at a UNI-C interface in one network and terminates at another UNI-C interface in another network.

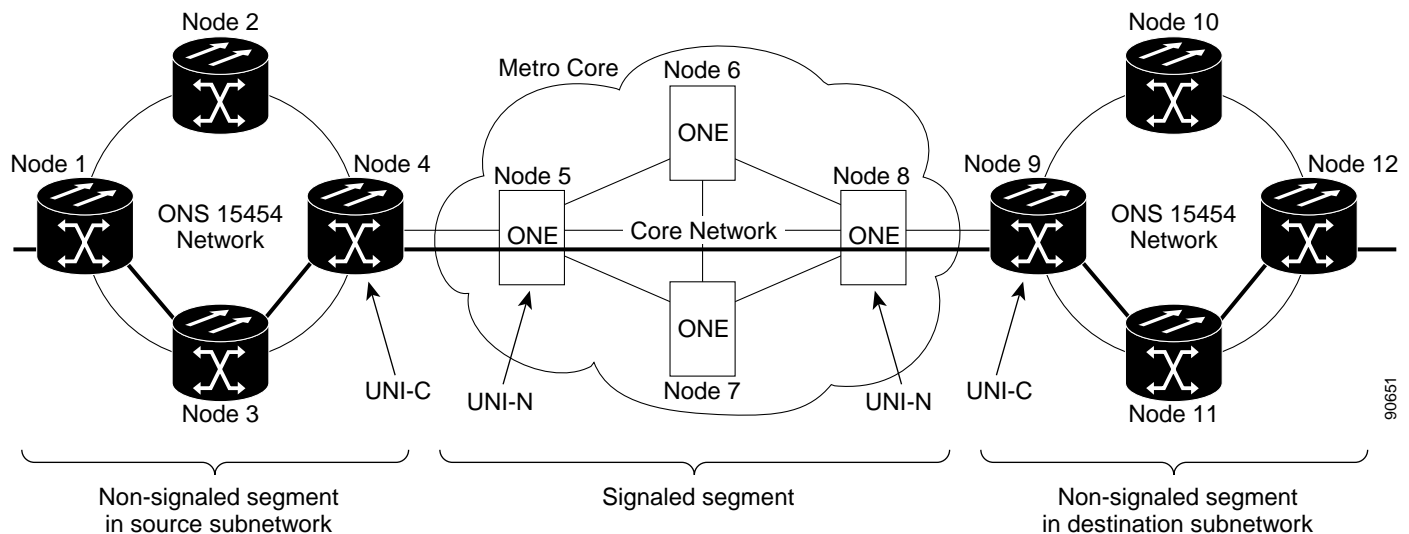
Resource ReSerVation Protocol (RSVP) is protocol originally designed to request specific qualities of service (QoS) from the network for particular application data streams or flows. RSVP can now provide a signal for SONET/SDH circuits. The control channel transports these RSVP messages, which carry source and destination addresses and required circuit attributes, such as bandwidth, framing type (SONET or SDH), connection diversity, and service level.

A non-signaled circuit is a circuit within a subnetwork; it is not routed across the core network.

The ONS 15454 SONET and SDH Release 3.4 and 4.0 UNI implementation supports signaling over optical interfaces. The supported circuits sizes for the UNI-C interface are STS-1, STS-3c/STM-1, STS-6c, STS-9c, STS-12c/STM-4, STS-24c, STS-48c/STM-16, STS-192c/STM-64.

Figure 1-2 shows an example of an inter-domain circuit. You can create inter-domain circuits on the CTC Circuits tab in network view.

Figure 1-2 Inter-Domain Circuit



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## 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.

- 
- 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**.

---

## 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**.

---

## 2.5 Change an IPCC Configuration

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

- 
- 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**.
- 

## 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**.
- 

## 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.

- 
- 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**.
-

2.7 Delete a Neighbor, IPCC, Interface, or UCP-Signaled Circuit





# Alarm Troubleshooting

This chapter describes the alarms and conditions associated with the unified control plane (UCP). For procedures that clear UCP alarms, refer to Release 3.4 or later of the *Cisco ONS 15454 Troubleshooting Guide* or the *Cisco ONS 15454 SDH Troubleshooting Guide*.

## 3.1 UCP Alarms

Table 3-1 lists the UCP alarms.

**Table 3-1 Alarm Descriptions**

Alarm	Severity	Description
CKTDOWN	Critical Service affecting	The UCP Circuit Down alarm applies to logical circuits created within the UCP between devices. It occurs when a signaling failure occurs across a UCP interface. The failure can be caused by a number of things, such as failure to route the call within the core network. In that case, the alarm cannot be resolved from the ONS 15454 because the node serves as an edge device.
RSVP-HELLODOWN	Minor Non-service affecting	The RSVP Hello Down alarm occurs when the hello protocol, which monitors UCP control channel status, is not available for reserving resources. The lack of availability can be caused by misconfiguration or loss of connectivity between the reporting node and its neighbor.
LMP-HELLODOWN	Minor Non-service affecting	The LMP Hello Down alarm occurs when the hello protocol, which monitors UCP control channel status, is not available for link management. Unavailability can be caused by physical layer errors (such as cabling) or by control channel misconfiguration.
LMP-NDFAIL	Minor Non-service affecting	The LMP Neighbor Detection Fail alarm occurs when neighbor detection within the UCP has failed. LMP-NDFAIL can be caused by physical failure (such as cabling) between the neighbors or by control channel misconfiguration.

## 3.2 UCP Conditions

Table 3-2 lists the UCP alarm conditions.

**Table 3-2 Alarm Conditions**

Condition	Raised When...	Cleared When...
UCP_CKT_DOWN	A provisioned circuit is temporarily or permanently down	The circuit becomes available.
UCP_NBR_DOWN	The Resource Reservation Protocol (RSVP) hello procedure indicates that a neighbor is down	The RSVP hello procedure declares that the neighbor is available.
UCP_CC_DOWN	The link management protocol (LMP) hello procedure indicates that the control channel is down	The LMP hello procedure indicates that the control channel is available.
UCP_ND_FAILED	The LMP neighbor discovery procedure fails	The control channel resets and the neighbor discovery procedure completes.
UCP_UNAUTH_CKTREQ	A node receives an unauthorized signaling request	This condition is not cleared (transient event).