



# APPENDIX **B**

## Administrative and Service States

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This appendix describes the administrative and service states for Cisco ONS 15310-CL and Cisco ONS 15310-MA cards, ports, and cross-connects. For circuit state information, see [Chapter 8, “Circuits and Tunnels.”](#) Software Release 6.0 and later states are based on the generic state model defined in Telcordia GR-1093 Core, Issue 2 and ITU-T X.731.

### B.1 Service States

Service states include a Primary State (PST), a Primary State Qualifier (PSTQ), and one or more Secondary States (SST). [Table B-1](#) lists the service state PSTs and PSTQs supported by the ONS 15310-CL and ONS 15310-MA.

**Table B-1**      *ONS 15310-CL and ONS 15310-MA Service State Primary States and Primary State Qualifiers*

Primary State, Primary State Qualifier	Definition
IS-NR	(In-Service and Normal) The entity is fully operational and will perform as provisioned.
OOS-AU	(Out-of-Service and Autonomous) The entity is not operational because of an autonomous event.
OOS-AUMA	(Out-of-Service and Autonomous Management) The entity is not operational because of an autonomous event and has also been manually removed from service.
OOS-MA	(Out-of-Service and Management) The entity has been manually removed from service.

[Table B-2](#) defines the SSTs supported by the ONS 15310-CL and ONS 15310-MA.

**Table B-2** ONS 15310-CL and ONS 15310-MA Secondary States

Secondary State	Definition
AINS	(Automatic In-Service) The entity is delayed before transitioning to the IS-NR service state. The transition to IS-NR depends on correction of conditions, or on a soak timer. Alarm reporting is suppressed, but traffic is carried. Raised fault conditions, whether or not their alarms are reported, can be retrieved on the CTC Conditions tab or by using the TL1 RTRV-COND command.
DSBLD	(Disabled) The entity was manually removed from service and does not provide its provisioned functions. All services are disrupted; the entity is unable to carry traffic.
FLT	(Fault) The entity has a raised alarm or condition.
LPBK	(Loopback) The entity is in loopback mode.
MEA	(Mismatched Equipment) An improper card is installed. For example, an installed card is not compatible with the card preprovisioning or the slot. This SST applies only to cards.
MT	(Maintenance) The entity has been manually removed from service for a maintenance activity but still performs its provisioned functions. Alarm reporting is suppressed, but traffic is carried. Raised fault conditions, whether or not their alarms are reported, can be retrieved on the CTC Conditions tab or by using the TL1 RTRV-COND command.
OOG	(Out of Group) The virtual concatenated (VCAT) member cross-connect is not used to carry VCAT group traffic. This state is used to put a member circuit out of the group and to stop sending traffic. OOS-MA,OOG only applies to the cross-connects on an end node where VCAT resides. The cross-connects on intermediate nodes are in the OOS-MA,MT service state.
SWDL	(Software Download) The card is involved in a software and database download. This SST applies only to cards.
UAS	(Unassigned) The card is not provisioned in the database. This SST applies only to cards.
UEQ	(Unequipped) The card is not physically present (that is, an empty slot). This SST applies only to cards.

## B.2 Administrative States

Administrative states are used to manage service states. Administrative states consist of a PST and an SST. [Table B-3](#) lists the administrative states supported by the ONS 15310-CL and ONS 15310-MA. See [Table B-2 on page B-2](#) for SST definitions.



### Note

A change in the administrative state of an entity does not change the service state of supporting or supported entities.

**Table B-3** ONS 15310-CL and ONS 15310-MA Administrative States

Administrative State (PST,SST)	Definition
IS	Puts the entity in-service.
IS,AINS	Puts the entity in automatic in-service.
OOS,DSBLD	Removes the entity from service and disables it.
OOS,MT	Removes the entity from service for maintenance.
OOS,OOG	(VCAT circuits only) Removes a VCAT member cross-connect from service and from the group of members.

## B.3 Service State Transitions

This section describes the transition from one service state to the next for cards, ports, and cross-connects. A service state transition is based on the action performed on the entity.



### Note

When an entity is put in the OOS,MT administrative state, the ONS 15310-CL and ONS 15310-MA suppresses all standing alarms on that entity. All alarms and events appear on the Conditions tab. You can change this behavior for the LPBKFACILITY and LPBKTERMINAL alarms. To display these alarms on the Alarms tab, set the NODE.general.ReportLoopbackConditionsOnOOS-MTPorts to TRUE on the NE Defaults tab.

### B.3.1 Card Service State Transitions

Table B-4 lists card service state transitions.

**Table B-4** ONS 15310-CL and ONS 15310-MA Card Service State Transitions

Current Service State	Action	Next Service State
IS-NR	Change the administrative state to OOS,MT.	OOS-MA,MT
	Delete the card.	OOS-AUMA,UAS
	Pull the card.	OOS-AU,UEQ
	Reset the card.	OOS-AU,SWDL
	Alarm/condition is raised.	OOS-AU,FLT
OOS-AU,AINS and MEA	Pull the card.	OOS-AU,AINS & UEQ
	Delete the card.	OOS-AUMA,UAS if the card is valid OOS-AUMA,MEA & UAS if the card is invalid
OOS-AU,AINS & SWDL	Restart completed.	IS-NR
	Pull the card.	OOS-AU,AINS & UEQ

Table B-4 ONS 15310-CL and ONS 15310-MA Card Service State Transitions (continued)

Current Service State	Action	Next Service State
OOS-AU,AINS & UEQ	Insert a valid card.	OOS-AU,AINS & SWDL
	Insert an invalid card.	OOS-AU,AINS & MEA
	Delete the card.	OOS-AUMA,UAS & UEQ
OOS-AU,FLT	Pull the card.	OOS-AU,UEQ
	Delete the card.	OOS-AUMA,UAS
	Change the administrative state to OOS,MT.	OOS-AUMA,FLT & MT
	Reset the card.	OOS-AU,SWDL
	Alarm/condition is cleared.	IS-NR
OOS-AU,MEA	Pull the card.	OOS-AU,UEQ
	Delete the card.	OOS-AUMA,UAS if the card is valid OOS-AUMA,MEA & UAS if the card is invalid
	Change the administrative state to OOS,MT.	OOS-AUMA,MEA & MT
OOS-AU,SWDL	Restart completed.	IS-NR
	Pull the card.	OOS-AU,UEQ
OOS-AU,UEQ	Insert a valid card.	OOS-AU,SWDL
	Insert an invalid card.	OOS-AU,MEA
	Delete the card.	OOS-AUMA,UAS & UEQ
	Change the administrative state to OOS,MT.	OOS-AUMA,MT & UEQ
OOS-AUMA,FLT & MT	Pull the card.	OOS-AUMA,MT & UEQ
	Delete the card.	OOS-AUMA,UAS
	Change the administrative state to IS.	OOS-AU,FLT
	Reset the card.	OOS-AUMA,MT & SWDL
	Alarm/condition is cleared.	OOS-MA,MT
OOS-AUMA,MEA & MT	Change the administrative state to IS.	OOS-AU,MEA
	Pull the card.	OOS-AUMA,MT & UEQ
	Delete the card.	OOS-AUMA,UAS if the card is valid OOS-AUMA,MEA & UAS if the card is invalid
OOS-AUMA,MEA & UAS	Pull the card.	OOS-AUMA,UAS & UEQ
	Provision the card.	OOS-AU,MEA

**Table B-4** ONS 15310-CL and ONS 15310-MA Card Service State Transitions (continued)

Current Service State	Action	Next Service State
OOS-AUMA,MT & SWDL	Restart completed.	OOS-MA,MT
	Pull the card.	OOS-AUMA,MT & UEQ
OOS-AUMA,MT & UEQ	Change the administrative state to IS.	OOS-AU,UEQ
	Insert a valid card.	OOS-AUMA,MT & SWDL
	Insert an invalid card.	OOS-AUMA,MEA & MT
	Delete the card.	OOS-AUMA,UAS & UEQ
OOS-AUMA,UAS	Pull the card.	OOS-AUMA,UAS & UEQ
	Provision an invalid card.	OOS-AU,MEA
	Provision a valid card.	OOS-AU,SWDL
OOS-AUMA,UAS & UEQ	Insert a valid card.	OOS-AU,SWDL
	Insert an invalid card.	OOS-AUMA,MEA & UAS
	Preprovision a card.	OOS-AU,AINS & UEQ
OOS-MA,MT	Change the administrative state to IS.	IS-NR
	Delete the card.	OOS-AUMA,UAS
	Pull the card.	OOS-AUMA,MT & UEQ
	Reset the card.	OOS-AUMA,MT & SWDL
	Alarm/condition is raised.	OOS-AUMA,FLT & MT

## B.3.2 Port and Cross-Connect Service State Transitions

Table B-5 lists the port and cross-connect service state transitions. Port states do not impact cross-connect states with one exception. A cross-connect in the OOS-AU,AINS service state cannot transition autonomously into the IS-NR service state until the parent port is in the IS-NR service state.

You cannot transition a port from the IS-NR service state to the OOS-MA,DSBLD service state. You must first put the port in the OOS-MA,MT service state. Once a port is in the OOS-MA,MT state, the `NODE.general.ForceToOosDsblStateChange` default setting of TRUE allows you to put a port in OOS-MA,DSBLD even if the following conditions exist:

- The port is a timing source.
- The port is used for line, section, or tunneling DCC.
- The port supports 1+1 protection or bidirectional line switched rings (BLSRs).
- Cross-connects are present on the port.
- Overhead connections or overhead terminations are in use (such as express orderwire, local orderwire, or user data channels [UDCs]).

To change this behavior so that you cannot put a port in OOS-MA,DSBLD if any of these conditions exist, set the `NODE.general.ForceToOosDsblStateChange` default setting to FALSE. For the procedure to change node defaults, refer to the “Maintain the Node” chapter in the *Cisco ONS 15310-CL and Cisco ONS 15310-MA Procedure Guide*.

**Note**

Deleting a port or cross-connect removes the entity from the system. The deleted entity does not transition to another service state.

**Table B-5** *ONS 15310-CL and ONS 15310-MA Port and Cross-Connect Service State Transitions*

<b>Current Service State</b>	<b>Action</b>	<b>Next Service State</b>
IS-NR	Put the port or cross-connect in the OOS,MT administrative state.	OOS-MA,MT
	Put the port or cross-connect in the IS,AINS administrative state.	OOS-AU,AINS
	Put the VCAT cross-connect in the OOS,OOG administrative state.	OOS-MA,MT & OOG
	Alarm/condition is raised.	OOS-AU,FLT OOS-AU,FLT & OOG for a VCAT cross-connect
	(Cross-connect only) Put the cross-connect in the OOS,DSBLD administrative state.	OOS-MA,DSBLD OOS-MA,DSBLD & OOG for a VCAT cross-connect
OOS-AU,AINS	Put the port or cross-connect in the IS administrative state.	IS-NR
	Put the port or cross-connect in the OOS,MT administrative state.	OOS-MA,MT
	Put the port or cross-connect in the OOS,DSBLD administrative state.	OOS-MA,DSBLD OOS-MA,DSBLD & OOG for a VCAT cross-connect
	Put the VCAT cross-connect in the OOS,OOG administrative state.	OOS-MA,MT and OOG
	Alarm/condition is raised.	OOS-AU,AINS & FLT OOS-AU,AINS & FLT & OOG for a VCAT cross-connect

**Table B-5** *ONS 15310-CL and ONS 15310-MA Port and Cross-Connect Service State Transitions (continued)*

<b>Current Service State</b>	<b>Action</b>	<b>Next Service State</b>
OOS-AU,AINS & FLT	Alarm/condition is cleared.	OOS-AU,AINS
	Put the port or cross-connect in the IS administrative state.	OOS-AU,FLT
	Put the port or cross-connect in the OOS,DSBLD administrative state.	OOS-MA,DSBLD
	Put the port or cross-connect in the OOS,MT administrative state.	OOS-AUMA,FLT & MT
	Put the VCAT cross-connect in the OOS,OOG administrative state.	OOS-AUMA,FLT & MT & OOG
OOS-AU,AINS & FLT & OOG	Alarm/condition is cleared.	OOS-AU,AINS or OOS-MA,MT <ul style="list-style-type: none"> <li>• If an In Group member is IS-NR or OOS-AU,AINS, the member transitions to OOS-AU,AINS.</li> <li>• If an In Group member is OOS-MA,MT, the member transitions to OOS-MA,MT.</li> </ul>
	Put the VCAT cross-connect in the IS administrative state.	OOS-AU,FLT & OOG
	Put the VCAT cross-connect in the OOS,DSBLD administrative state.	OOS-MA,DSBLD & OOG
	Put the VCAT cross-connect in the OOS,MT administrative state.	OOS-AUMA,FLT & MT & OOG
OOS-AU,FLT	Alarm/condition is cleared.	IS-NR
	Put the port or cross-connect in the IS,AINS administrative state.	OOS-AU,AINS & FLT
	Put the port or cross-connect in the OOS,DSBLD administrative state.	OOS-MA,DSBLD OOS-MA,DSBLD & OOG for a VCAT cross-connect
	Put the port or cross-connect in the OOS,MT administrative state	OOS-AUMA,FLT & MT
	Put the VCAT cross-connect in the OOS,OOG administrative state.	OOS-AUMA,FLT & MT & OOG

**Table B-5** ONS 15310-CL and ONS 15310-MA Port and Cross-Connect Service State Transitions (continued)

Current Service State	Action	Next Service State
OOS-AU,FLT & OOG	Alarm/condition is cleared.	IS-NR or OOS-MA,MT <ul style="list-style-type: none"> <li>• If an In Group member is IS-NR or OOS-AU,AINS, the member transitions to IS-NR.</li> <li>• If an In Group member is OOS-MA,MT, the member transitions to OOS-MA,MT</li> </ul>
	Put the VCAT cross-connect in the IS,AINS administrative state.	OOS-AU,AINS & FLT & OOG
	Put the VCAT cross-connect in the OOS,DSBLD administrative state.	OOS-MA,DSBLD & OOG
	Put the VCAT cross-connect in the OOS,MT administrative state.	OOS-AUMA,FLT & MT & OOG
OOS-AUMA,FLT & LPBK & MT	Release the loopback.	OOS-AUMA,FLT & MT
	Alarm/condition is cleared.	OOS-MA,LPBK & MT
OOS-AUMA,FLT & LPBK & MT & OOG	Release the loopback.	OOS-AUMA,FLT & MT & OOG
	Alarm/condition is cleared.	OOS-MT,MT & OOG
OOS-AUMA,FLT & MT	Alarm/condition is cleared.	OOS-MA,MT
	Put the port or cross-connect in the IS administrative state.	OOS-AU,FLT
	Put the port or cross-connect in the IS,AINS administrative state.	OOS-AU,AINS & FLT
	Put the port or cross-connect in the OOS,DSBLD administrative state.	OOS-MA,DSBLD OOS-MA,DSBLD & OOG for a VCAT cross-connect
	Put the port or cross-connect in a loopback.	OOS-AUMA,FLT & LPBK & MT
	Put the VCAT cross-connect in the OOS,OOG administrative state.	OOS-AUMA,FLT & MT & OOG



**Table B-5 ONS 15310-CL and ONS 15310-MA Port and Cross-Connect Service State Transitions (continued)**

Current Service State	Action	Next Service State
OOS-AUMA,FLT & MT & OOG	Alarm/condition is cleared.	OOS-MA,MT & OOG
	Put the VCAT cross-connect in the IS administrative state. <b>Note</b> VCAT In Group members are in the OOS-AU,FLT or IS-NR service state.	OOS-AU,FLT & OOG
	Put the VCAT cross-connect in the IS,AINS administrative state. <b>Note</b> VCAT In Group members are in the OOS-AU,AINS & FLT or IS-NR service state.	OOS-AU,AINS & FLT & OOG
	Put the VCAT cross-connect in the OOS,DSBLD administrative state.	OOS-MA,DSBLD & OOG
	Put the VCAT cross-connect in the OOS,MT administrative state. <b>Note</b> VCAT In Group members are in the OOS-MA,FLT & MT service state.	OOS-MA,FLT & MT
	Operate a loopback.	OOS-MA,FLT & LPBK & MT & OOG
OOS-MA,DSBLD	Put the port or cross-connect in the IS administrative state.	IS-NR
	Put the port or cross-connect in the IS,AINS administrative state.	OOS-AU,AINS
	Put the port or cross-connect in the OOS,MT.	OOS-MA,MT
	Put the VCAT cross-connect in the OOS,OOG administrative state.	OOS-MA,MT & OOG
	Put the VCAT cross-connect in the OOS,OOG administrative state.	OOS-MA,MT & OOG

**Table B-5** ONS 15310-CL and ONS 15310-MA Port and Cross-Connect Service State Transitions (continued)

Current Service State	Action	Next Service State
OOS-MA,LPBK & MT	Release the loopback.	OOS-MA,MT
	<b>Note</b> While in OOS-MA,LPBK & MT, both Cisco Transport Controller (CTC) and Transaction Language One (TL1) allow a cross-connect to be deleted, which also removes the loopback. This applies only to the cross-connect, not the ports.	
	Alarm/condition is raised.	OOS-AUMA,FLT & LPBK & MT OOS-AUMA,FLT & LPBK & MT & OOG for a VCAT cross-connect
OOS-MA,LPBK & MT & OOG	Alarm/condition is raised.	OOS-AUMA,FLT & LPBK & MT & OOG
OOS-MA,MT	Put the port or cross-connect in the IS administrative state.	IS-NR
	Put the port or cross-connect in the IS,AINS administrative state.	OOS-AU,AINS
	Put the port or cross-connect in the OOS,DSBLD administrative state.	OOS-MA,DSBLD OOS-MA,DSBLD & OOG for a VCAT cross-connect
	Put the port or cross-connect in a loopback.	OOS-MA,LPBK & MT
	Put the VCAT cross-connect in the OOS,OOG administrative state.	OOS-MA,MT & OOG
	Alarm/condition is raised.	OOS-AUMA,FLT & MT OOS-AUMA,FLT & MT & OOG for a VCAT cross-connect
OOG-MA,MT & OOG	Alarm/condition is raised.	OOS-AUMA,FLT & MT & OOG

## B.3.3 Pluggable Equipment Service State Transitions

The service state transitions for pluggable equipment are the same as for other equipment with the exceptions listed in [Table B-6](#).

**Note**

Pluggable equipment (pluggable interface modules [PIMs] and pluggable port modules [PPMs]) will transition out of the UAS state when inserted if the software can read the EEPROM and identify information on the pluggable equipment. If the software cannot read the pluggable equipment, the equipment is considered invalid and will not transition out of the UAS state.

**Table B-6** ONS 15310-CL and ONS 15310-MA Pluggable Equipment Service State Transitions

Current Service State	Action	Next Service State
IS-NR	Reset the pluggable equipment.	IS-NR
	Provision an unsupported service rate.	OOS-AU,MEA
	Pluggable equipment does not work with the board configuration.	
OOS-AU,AINS & UEQ	Insert valid pluggable equipment.	IS-NR
	Insert pluggable equipment with the incorrect rate.	OOS-AU,MEA
	Pluggable equipment does not work with the board configuration.	
OOS-AU,MEA	Delete unsupported service rate or modify provisioning so that the pluggable equipment is no longer a mismatch.	IS-NR
OOS-AU,UEQ	Insert valid pluggable equipment.	IS-NR
OOS-AUMA,MEA & MT	Delete unsupported service rate or modify provisioning so that the pluggable equipment is no longer a mismatch.	OOS-MA,MT
OOS-AUMA,MT & UEQ	Insert valid pluggable equipment.	OOS-MA,MT
OOS-AUMA,UAS	Provision valid pluggable equipment.	IS-NR
OOS-AUMA,UAS & UEQ	Insert valid pluggable equipment.	IS-NR
	Insert pluggable equipment with the incorrect rate.	OOS-AU,MEA
	Pluggable equipment does not work with the board configuration.	
OOS-MA,MT	Reset the pluggable equipment.	OOS-MA,MT
	Provision an unsupported service rate.	OOS-AUMA,MEA & MT
	Pluggable equipment does not work with the board configuration.	

■ B.3.3 Pluggable Equipment Service State Transitions