

Configure AINS

This chapter describes the procedure to configure the AINS.

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AINS Support for Controllers

After the completion of a maintenance window, the controller can be removed from the maintenance state without manual intervention by configuring the Automatic-In-Service (AINS) state with a soak time period. After the expiry of the soak time period, the state automatically goes to the normal or the In-Service state.

AINS can be set or cleared on the controller using the **automatic-in-service controller optics** *R/S/I/P* **hours** *x* **minutes** *y* command in the EXEC XR mode.

```
RP/0/#automatic-in-service controller odu2 0/6/0/2 hours 0 minutes 15
```

The soak time can be configured when the controller is moved to the AINS state. The minimum soak time is 0 hours 15 minutes and the maximum is 48 hours. The soak time can be configured in intervals of 15 minutes. If a soak time is not specified, it defaults to eight hours. If the soak time is set to 0 using the **automatic-in-service controller** *controller-name R/S/I/P* **hours 0 minutes 0** command , the AINS configuration on the controller is cleared.

The AINS configuration can be viewed using the **show controllers** *controller-name R/S/I/P* command.

```
RP/0/#show controllers odu2 0/6/0/2
Tue Aug 14 04:02:09.591 UTC

Port                                          : ODU2 0/6/0/2
Controller State                              : Up
Inherited Secondary state                     : Normal
Configured Secondary state                    : Automatic-In-Service
Derived State                                 : Automatic-In-Service
Loopback mode                                 : None
BER Thresholds                                : SF = 1.0E-6  SD = 1.0E-7

Performance Monitoring                        : Disable

Path Monitoring Mode                          : Non-Intrusive Monitor
PM TIM-CA state                               : Disable

Alarm Information:
AIS = 0 IAE = 0 BIAE = 0
```

```
SF_BER = 0      SD_BER = 0      BDI = 0
OCI = 0 LCK = 0 PTIM = 0
TIM = 0 CSF = 0 GFP LFD = 0
GFP LOCS = 0    GFP LOCCS = 0   GFP UPM = 0

Detected Alarms                                 : None

ODU TTI Sent

ODU TTI Received
     SAPI  ASCII                                : P M - T R C   S A P I - S E C
     SAPI  HEX                                  : 00504D2D545243204F50455241544F52205350454349464943205345435494F4E
     DAPI  ASCII                                : P M - T R C   D A P I - S E C
     DAPI  HEX                                  : 00504D2D545243204F50455241544F52205350454349464943205345435494F4E
     OPERATOR SPECIFIC ASCII                    : PM-TRC OPERATOR SPECIFIC SECTION
     OPERATOR SPECIFIC HEX                      :
504D2D545243204F50455241544F52205350454349464943205345435494F4E
ODU TTI Expected

Owner                                           : All
Resource State                                  : ODU Cross Connection

AINS Soak                                       : Running
AINS Timer                                      : 0h, 15m
AINS remaining time                             : 898 seconds
```

The priority amongst the secondary administrative states are Maintenance > Automatic In-Service > In-Service (Normal). When the controller is put into maintenance, the soak timer is automatically paused and the soak timer status is moved to pending.

```
RP/0/#configure
Tue Aug 14 04:02:54.242 UTC
RP/0/(config)#controller odu2 0/6/0/2 secondary-admin-state maintenance
RP/0/(config)#commit
Tue Aug 14 04:03:00.752 UTC
RP/0/(config)#end
RP/0/#sh controllers odu2 0/6/0/2
Tue Aug 14 04:03:03.810 UTC
Port                                            : ODU2 0/6/0/2
Controller State                                : Up
Inherited Secondary state                       : Normal
Configured Secondary state                      : Maintenance
Derived State                                   : Maintenance
Loopback mode                                   : None
BER Thresholds                                  : SF = 1.0E-6  SD = 1.0E-7
Performance Monitoring                          : Disable
Path Monitoring Mode                            : Non-Intrusive Monitor
PM TIM-CA state                                 : Disable
Alarm Information:
AIS = 0 IAE = 0 BIAE = 0
SF_BER = 0      SD_BER = 0      BDI = 0
OCI = 0 LCK = 0 PTIM = 0
TIM = 0 CSF = 0 GFP LFD = 0
GFP LOCS = 0    GFP LOCCS = 0   GFP UPM = 0
Detected Alarms                                 : None
ODU TTI Sent
ODU TTI Received
     SAPI  ASCII                                : P M - T R C   S A P I - S E C
     SAPI  HEX                                  : 00504D2D545243204F50455241544F52205350454349464943205345435494F4E
     DAPI  ASCII                                : P M - T R C   D A P I - S E C
     DAPI  HEX                                  : 00504D2D545243204F50455241544F52205350454349464943205345435494F4E
     OPERATOR SPECIFIC ASCII                    : PM-TRC OPERATOR SPECIFIC SECTION
     OPERATOR SPECIFIC HEX                      :
504D2D545243204F50455241544F52205350454349464943205345435494F4E
```

```
ODU TTI Expected
Owner                                          : All
Resource State                                 : ODU Cross Connection
AINS Soak                                      : Pending
AINS Timer                                     : 0h, 15m
AINS remaining time                            : 847 seconds
```

After the completion of maintenance, the soak timer restarts and the status is moved to running. After the expiry of the soak time, the controller is moved to the in-service state.

```
RP/0/#configure
Tue Aug 14 04:03:08.630 UTC
RP/0/(config)#no controller odu2 0/6/0/2 secondary-admin-state
RP/0/(config)#commit
Tue Aug 14 04:03:16.396 UTC
RP/0/(config)#end
RP/0/#sh controllers odu2 0/6/0/2
Tue Aug 14 04:03:18.831 UTC
Port                                           : ODU2 0/6/0/2
Controller State                               : Up
Inherited Secondary state                      : Normal
Configured Secondary state                     : Automatic-In-Service
Derived State                                  : Automatic-In-Service
Loopback mode                                  : None
BER Thresholds                                 : SF = 1.0E-6  SD = 1.0E-7
Performance Monitoring                         : Disable
Path Monitoring Mode                           : Non-Intrusive Monitor
PM TIM-CA state                                : Disable
Alarm Information:
AIS = 0 IAE = 0 BIAE = 0
SF_BER = 0      SD_BER = 0      BDI = 0
OCI = 0 LCK = 0 PTIM = 0
TIM = 0 CSF = 0 GFP LFD = 0
GFP LOCS = 0    GFP LOCCS = 0   GFP UPM = 0
Detected Alarms                                : None
ODU TTI Sent
ODU TTI Received
     SAPI  ASCII                               : P M - T R C   S A P I - S E C
     SAPI  HEX                                 : 00504D2D545243204F50455241544F52
     DAPI  ASCII                               : P M - T R C   D A P I - S E C
     DAPI  HEX                                 : 00504D2D545243204F50455241544F52
     OPERATOR SPECIFIC ASCII                   : PM-TRC OPERATOR SPECIFIC SECTION
     OPERATOR SPECIFIC HEX                     :
504D2D545243204F50455241544F52205350454349464943205345435449F4E
ODU TTI Expected
Owner                                          : All
Resource State                                 : ODU Cross Connection
AINS Soak                                      : Running
AINS Timer                                     : 0h, 15m
AINS remaining time                            : 845 seconds
```

If a traffic impacting alarm is raised on the controller, the AINS soak timer is reset to the previously configured value or to eight hours if AINS was not previously configured. To transition from the AINS state to the in-service state, a clean soak period is mandatory with no traffic impacting alarms on the controller. New alarms are suppressed when the controller is in AINS state.

Inheritance of AINS settings

- The AINS state is inherited by child controllers (OTU and ODU) from the parent controller .
- Low order ODUs inherit configured soak timer values.
- If a child controller is configured first with a higher soak timer value and then the parent controller is configured with a lower soak timer value, then the child controller inherits the parent value.

- If the parent controller is configured first with a lower value and then the child controller is configured with a higher value, then the parent and child controllers retain their locally configured values and there is no inheritance.
- If the child controller is configured first with a lower value and then parent controller is configured with a higher value, then the child controller inherits the parent controller value.
- If the parent controller is configured with a higher value and then the child controller is configured with a lower value, the value is rejected as the soak time can be locally configured on the child controller but cannot be lesser than the parent controller.

Configure AINS

Purpose	This procedure enables you to configure and view AINS settings on a controller using CTC.
Tools/Equipment	None
Prerequisite Procedures	"Login to CTC" in *System Setup and Software Installation Guide for Cisco NCS 4000 Series.*
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Procedure

Step 1 In the node view, double-click the card where you want to provision AINS for the controllers.

The card view appears.

Step 2 Click the **Provisioning** > **Controllers** > *controller-name* tabs.

controller-name :

Optics, OC, STS, STM, VC, Ethernet, OTU, ODU.

The Optics is the parent controller. The service state is inherited by the child controllers.

Step 3 Choose IS,AINS from the admin state drop-down list.

Step 4 Set the soak time in hours and minutes in the soak time field.

The soak time can be set in intervals of 15 minutes to a maximum of 48 hours. The soak time configured locally on the child controllers cannot be lesser than the parent controller.

Step 5 Click **Apply**.

Step 6 To view the AINS settings on the controller, click the **Maintenance** > **AINS Soak** tabs.

Stop. You have completed this procedure.