



Optics Command Reference

This chapter describes the commands to configure the Optics controller.

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controller optics

To configure optics controller use the **controller optics** command in the config mode.

controller optics *R/S/I/P*

| Syntax Description | controller optics | Name of the controller |
|--------------------|--------------------------|---|
| | <i>R/S/I/P</i> | Displays the Rack/Slot/Instance/Port of the controller. |

Command Default None

Command Modes Config mode

| Command History | Release | Modification |
|-----------------|---------------|------------------------------|
| | Release 5.2.4 | This command was introduced. |

Usage Guidelines To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

| Task ID | Task ID | Operation |
|---------|---------|-----------|
| | otn | write |

Example

The following example shows how to configure an optics controller.

```
RP/0/RP0:hostname (config)# controller optics 0/0/0/0
```

automatic-in-service controller

To configure AINS use the **automatic-in-service controller** command in the EXEC mode.

automatic-in-service controller *controller-name* *R/S/I/Hours**xminutes**y*

| Syntax Description | |
|------------------------|---|
| <i>controller-name</i> | Name of the controller. |
| <i>R/S/I/P</i> | Displays the Rack/Slot/Instance/Port of the controller. |
| <i>x</i> | Number of hours |
| <i>y</i> | Number of minutes |

Command Default None

Command Modes Config mode

| Command History | Release | Modification |
|-----------------|----------------|------------------------------|
| | Release 6.5.25 | This command was introduced. |

Usage Guidelines None

Example

The following example shows how to configure AINS for 15 minutes on an ODU2 controller.

```
RP/0/RP0:hostname # automatic-in-service controller odu2 0/6/0/2 hours 0 minutes 15
```

dwdm-carrier

To configure the wavelength, use the **dwdm-carrier** command in optics controller configuration mode.

dwdm-carrier 100MHz-grid frequency *frequency*

| Syntax Description | dwdm-carrier 100MHz-grid frequency | Configures the wavelength in 100MHz (0.1GHz) grid spacing in accordance with ITU definition. |
|--------------------|---|--|
| | <i>frequency</i> | Specifies the frequency for the optics controller. In 100MHz grid spacing, enter the 7-digit frequency value in the range of 1911500–1961000. For example, enter 1913501 to specify 191.3501 THz. |

Command Default No wavelength is configured.

Command Modes Optics controller

| Command History | Release | Modification |
|-----------------|---------|------------------------------|
| | 6.5.33 | This command was introduced. |

Usage Guidelines You must shut down the controller before you configure the controller or restore a saved configuration.

| Task ID | Task ID | Operation |
|---------|---------|-----------|
| | otn | write |

Example

The following example shows how to configure the wavelength in 100MHz (0.1GHz) grid spacing in accordance with ITU definition.

```
RP/0/RP0:ios(config-Optics)#dwdm-carrier 100MHz-grid frequency 1960810
```

port-mode

To create a controller use the **port-mode** command in the config mode. To delete the port-mode, use the **no** form of this command.

port-mode {sonet | sdh | ethernet | otn} [**framing type mapping type**]

no port-mode {sonet | sdh | ethernet | otn} [**framing type mapping type**]

| Syntax Description | |
|-----------------------------------|---|
| port-mode sonet framing | Possible framing and mapping types: { opu1 mapping bmp opu2 mapping [amp bmp] } |
| port-mode sdh framing | Possible framing and mapping types: { opu1 mapping bmp opu2 mapping [amp bmp] } |
| port-mode otn framing | Possible framing and mapping types: { opu1 opu1e opu1f opu2 opu2e opu2f opu3 opu3e1 opu3e2 opu4 opuflex } |
| port-mode ethernet framing | Possible framing and mapping types: { opu0 mapping gmp opu1e mapping bmp opu2 mapping { GfpF wis rate [OC192 STM64] GfpF-Ext } opu2e mapping bmp opu3 mapping opu3e1 mapping opu3e2 mapping opu4 mapping [gmp GfpF] opuflex mapping GfpF } |

Command Default None

Command Modes Config mode

| Command History | Release | Modification |
|-----------------|---------------|------------------------------|
| | Release 5.2.4 | This command was introduced. |

Usage Guidelines To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

| Task ID | Task ID | Operation |
|---------|---------|-----------|
| | otn | write |

Example

The following example shows how to create ethernet.

```
RP/0/RP0:hostname (config)# controller optics 0/0/0/0
```

```
RP/0/RP0:hostname (config-optics)# port-mode ethernet framing opu0 mapping gmp
```

show controller optics

To display status and configuration information about the interfaces configured as optics controller on a specific node, use the **show controllers optics** command in XR EXEC mode.

show controller optics

show controller optics *R/S/I/P* [**dwdm-carrier-map flexi-grid**]

| Syntax Description | <i>R/S/I/P</i> | Rack/Slot/Instance/Port of the controller. |
|--------------------|-------------------------|--|
| | dwdm-carrier-map | (only for trunk optics controllers) Displays the wavelength and channel mapping. |
| | flexi-grid | (only for trunk optics controllers) Enables GMPLS UNI flexible grid channel spacing. |

Command Modes Exec mode

| Command History | Release | Modification |
|-----------------|---------|------------------------------|
| | 6.5.33 | This command was introduced. |

Usage Guidelines To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command contact your AAA administrator for assistance.

| Task ID | Task ID | Operation |
|---------|---------|-----------|
| | otn | read |

Example

The following example displays the wavelength and channel mapping with flexible grid channel spacing enabled.

```
RP/0/RP0:ios#show controller Optics0/0/0/11 dwdm-carrier-map flexi-grid
Mon Mar 20 07:12:36.764 UTC
DWDM Carrier Band:: OPTICS_C_BAND
Frequency range supported: 196.10000 THz ~ 191.30630 THz
DWDM Carrier Map table
-----
Channel G.694.1 Frequency Wavelength
index Ch Num (THz) (nm)
-----
1 480 196.10000 1528.773
-----
2 479 196.09380 1528.822
-----
3 478 196.08750 1528.871
-----
4 477 196.08130 1528.919
-----
```

```
5 476 196.07500 1528.968
```

```
-----  
6 475 196.06880 1529.017
```

```
-----  
7 474 196.06250 1529.066
```

```
-----  
8 473 196.05630 1529.114
```

```
-----  
9 472 196.05000 1529.163
```

```
-----  
10 471 196.04380 1529.212
```

```
-----  
11 470 196.03750 1529.261
```

```
-----  
12 469 196.03130 1529.309
```

```
-----  
13 468 196.02500 1529.358
```

```
-----  
14 467 196.01880 1529.407
```

```
-----  
15 466 196.01250 1529.456
```

```
-----  
16 465 196.00630 1529.504
```

```
--More--
```


show portmode

To display details of portmode, use the **show portmode** command in the exec mode.

show controllers optics *R/S/I/P* portmode capability

| Syntax Description | optics | Name of the port. |
|--------------------|----------------|---|
| | <i>R/S/I/P</i> | Displays the Rack/Slot/Instance/Port of the controller. |
| | portmode | Port mode |

Command Modes Exec mode

| Command History | Release | Modification |
|-----------------|---------------|------------------------------|
| | Release 5.2.4 | This command was introduced. |

Usage Guidelines To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

| Task ID | Task ID | Operation |
|---------|---------|-----------|
| | otn | read |

Example

The following example shows how to display port-mode capability .

```
RP/0/RP0:hostname # show controller optics 0/0/0/1 portmode capabilities
```

```
Portmode Information
-----
Port_no      Portmode Type   Framing           Mapping
PT type
1            Ethernet        OPU0 framing type  GMP mapping type
07 (PCS codeword transparent Ethernet mapping)
1            Sonet           OPU1 framing type  BMP mapping type
03 (Bit synchronous CBR mapping)
1            SDH             OPU1 framing type  BMP mapping type
03 (Bit synchronous CBR mapping)
1            OTN             OPU1 framing type  None mapping type
Traffic Dependent
```

```
RP/0/RP0:hostname # show controller optics 0/0/0/1 portmode configured
```

```
Portmode Information
-----
```

| | | | |
|---------------|-------------------|-------------------|-------------------|
| Portmode type | Framing Mapping | PT type | |
| OTN | OPU1 framing type | None mapping type | Traffic Dependent |



Note Run *do show portmode* when command is executed in config mode.
