GMPLS Command Reference

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affinity-map

To define global name-to-value mapping, use the **affinity-map** command in config mode.

affinity map <*colour*> **bit-position** <*bit-position*>

Syntax Description

colour	Enters the colour like red, blue, green.
bit-position	Enters bit position. Valid value range is 0-31

Command Modes

Config mode

Command History

Release	Modification
Release 6.5.25	This command was introduced.

Task ID

Task ID	Operation
ouni	write

Example

The following example shows how to define an affinity map:

```
RP/0/RP0:hostname# configure
RP/0/RP0:hostname(config)# mpls traffic-eng
RP/0/RP0:hostname(config-mpls-te)# affinity-map red bit-position 1
RP/0/RP0:hostname(config-te-gmpls-nni)# affinity-map green bit-position 0
```

affinity-name

To assign one or multiple colours to the OTN link , use the **affinity-name** command in config mode. To disable affinity-name, use the **no** form of this command.

affinity name <*color*> <*color*>…<*color*> *upto 32 colors*

Syntax Description

color	Enters the colour like red, blue, green.

no affinity name

Command Modes

Config mode

Command History

Release	Modification
Release 6.5.25	This command was introduced.

Task ID

Task ID	Operation
ouni	write

Example

The following example shows how to assign multiple colours to the OTN link:

```
RP/0/RP0:hostname# configure
RP/0/RP0:hostname(config)# mpls traffic-eng
RP/0/RP0:hostname(config-mpls-te)# gmpls optical-nni
RP/0/RP0:hostname(config-te-gmpls-nni)# topology instance ospf abc area 5
RP/0/RP0:hostname(config-te-gmpls-nni-ti)# controller otu4 0/0/0/1
RP/0/RP0:hostname(config-te-gmpls-nni-ti-cntl)# affinity-name red blue green yellow
```

announce srlg

To pass on the SRLG from OTN layer to packet interfaces, use the **announce srlg** command in config mode. To disable announcing SRLG, use the **no** form of this command.

announce srlg

no announce srlg

Command Modes

Config mode

Command History

Release	Modification
Release 6.1.42	This command was introduced.

Task ID

Task ID	Operation
ouni	write

Example

The following example shows how to configure SRLG announcement on Ethernet Terminated ODU:

```
RP/0/RP0:hostname# configure
RP/0/RP0:hostname(config)# mpls traffic-eng
RP/0/RP0:hostname(config-mpls-te)# gmpls optical-nni
RP/0/RP0:hostname(config-te-gmpls-nni)# controller odu-group-te 10
RP/0/RP0:hostname(config-te-gmpls-tun-0xa)# signalled-bandwidth ODU2
RP/0/RP0:hostname(config-te-gmpls-tun-0xa)# static-uni local-termination interface-name
TenGigE0/1/0/0/100 remote-termination unnumbered 32
RP/0/RP0:hostname(config-te-gmpls-tun-0xa)# destination ipv4 unnumbered 10.77.132.185
interface-if index 19
RP/0/RP0:hostname(config-te-gmpls-tun-0xa)# announce srlg
RP/0/RP0:hostname(config-te-gmpls-tun-0xa)# path-option 1 dynamic protected-by none lockdown
```

announce srlgs

To announce all SRLGs discovered through GMPLS signaling to RSI (Router Space Infrastructure), use the **announce srlgs** command in MPLS-TE GMPLS UNI controller mode. To disable announcing SRLGs to RSI, use the **no** form of this command.

announce srlgs

no announce srlgs

Command Default

None

Command Modes

MPLS-TE GMPLS UNI controller configuration

Command History

Release	Modification
Release 6.1.32	This command was introduced.

Usage Guidelines

None

Task ID

Task ID	Operation
mpls-te	read, write
ouni	read, write

Example

The following example shows how to configure SRLG announcement:

```
RP/0/RP0:hostname# configure
RP/0/RP0:hostname(config)# mpls traffic-eng
RP/0/RP0:hostname(config-mpls-te)# gmpls optical-uni
RP/0/RP0:hostname(config-te-gmpls-uni)# controller optics 0/1/0/2
RP/0/RP0:hostname(config-te-gmpls-cntl)# announce srlgs
```

area ID

To configure the area ID of the ospf interface, use the **area** command in the config mode. To delete the area ID of the ospf, use the **no** form of this command.

area [*ID value*]

no area [*ID value*]

Syntax Description

area	Configures the area ID of the OSPF interface.
value	Displays the area ID of the OSPF interface.

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

This example shows how to configure the area ID of the OSPF interface:

```
RP/0/RP0:hostname(config)# router ospf 1
RP/0/RP0:hostname(config-ospf)# area 0
```

attribute-set

To create attribute-set that defines affinity constraints, use the **attribute-set** command in config mode.

attribute-set path-option <*name*>
affinity <*constraint*>

Syntax Description

name	Name of the attribute-set.
constraint	• include : Specifies that the TE link will be eligible for path-calculation if it has all the colours listed in the constraint. The link may have additional colours. • include-strict : Specifies that the TE link will be eligible for path-calculation only if it has the same set of colours listed in the constraint. The link should not have any additional colour. • exclude: Specifies that the TE link will be eligible for path-calculation if it does not have all the colours listed in the constraint. • exclude-all: This constraint is not associated with any colour.If this constraint is configured for a tunnel, path-calculator will only accept the links that do not have any colour.

Command Modes

Config mode

Command History

Release	Modification
Release 6.5.25	This command was introduced.

Task ID

Task ID	Operation
ouni	write

Example

The following example shows how to define an attribute set:

```
RP/0/RP0:hostname# configure
RP/0/RP0:hostname(config)# mpls traffic-eng
RP/0/RP0:hostname(config-mpls-te)# attribute-set path-option Affinity1
RP/0/RP0:hostname(config-te-attribute-set)# affinity include red
```

attribute-set xro

To configure the xro attribute set for circuit diversity, use the **attribute-set xro** command in the config mode. To delete an attribute set use the **no** form of this command.

attribute-set xro [*attribute set name*] **exclude strict lsp source** [*head node IP address*] **destination** [*tail node IP address*] **tunnel-id** [*tunnel_id*] **extended-tunnel-id** [*ext_tunnel_id*]
no attribute-set xro [*attribute set name*]
attribute-set xro [*attribute set name*] **no exclude strict lsp source** [*head node IP address*] **destination** [*tail node IP address*] **tunnel-id** [*tunnel_id*] **extended-tunnel-id** [*ext_tunnel_id*]

Syntax Description

exclude	Specifies path to be excluded for circuit diversity.
strict	Specifies that diverse circuit will come up only if the conditions specified under exclusion are met.
lsp	Specify path-diversity from another LSP.
source	Specifies the IP address of head node in circuit whose diverse circuit you want to create.
destination	Specifies the IP address of tail node in circuit whose diverse circuit you want to create.
tunnel-id	Specifies the tunnel Id of circuit whose diverse circuit you want to create.
extended-tunnel-id	Specifies the extended-tunnel-id of circuit whose diverse circuit you want to create. This is same as head node IP address.

Command Default

None

Command Modes

Config mode

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

None

Task ID

Task ID	Operation
ouni	write

Example

This example shows how to define xro attribute set for creating a diverse circuit.

```
RP/0/RP0/CPU0:router(config)# attribute-set xro Xro_nni1_div_tun0 exclude strict lsp source
```

```
 192.168.0.1 destination 192.168.0.2 tunnel-id 0 extended-tunnel-id 192.168.0.1

RP/0/RP0/CPU0:router(config)# no attribute-set xro Xro_nni1_div_tun0

RP/0/RP0/CPU0:router(config)# attribute-set xro Xro_nni1_div_tun0 no exclude strict lsp
source 192.168.0.1 destination 192.168.0.2 tunnel-id 0 extended-tunnel-id 192.168.0.1
```

controller odu-group-te

To create an ODU group controller, use the **controller odu-group-te** command in the config mode. To delete ODU group controller, use the **no** form of this command.

controller odu-group-te [*Group ID*]
no controller odu-group-te [*Group ID*]

Syntax Description

Groupr ID	Identifier of the ODU group Controller. The valid range is from 0 to 64535.

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.

Controller odu-group-te has information for GMPLS tunnel only.

Task ID

Task ID	Operation
ouni	write

Example

This example shows how to create ODU Group controller.

```
RP/0/RP0:hostname(config)# mpls traffic-eng
RP/0/RP0:hostname (config-mpls-te)# gmpls optical-nni
RP/0/RP0:hostname (config-te-gmpls-nni)# controller odu-group-te 1
```

destination

To create destination of GMPLS OTN tunnel, use the **destination** command in the config mode. To delete the destination for an odu-group-te controller, use the **no** form of this command.

destination {**ipv4 unicast**} *A.B.C.D*
no destination {**ipv4 unicast**} *A.B.C.D*

Syntax Description

destination	Specifies the destination of the GMPLS OTN tunnel.
ipv4	Specifies an IPv4 destination.
unicast	Specifies an IPv4 unicast destination.
A.B.C.D	Specifies the tunnel destination address.

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.

Destination is used define the destination of the nni to nni tunnel. Destination of the tunnel is identified by the tail node Id of the router.

Task ID

Task ID	Operation
ouni	write

Example

This example shows how to configure destination for an odu-group-te controller.

```
RP/0/RP0:hostname(config-gmpls-tun-0x1)# destination ipv4 unicast 1.2.3.4
```

explicit-path

To configure an explicit path, use the **explicit-path** command in the config mode. To delete an explicit-path use the **no** form of this command.

explicit-path { **name** | **identifier** } [*name* | *id_value*] **index** *index_val* **next-address** { **strict** | **loose** } **ipv4 unicast ip_address** *router_id*
explicit-path { **name** | **identifier** } [*name* | *id_value*] **index** *index_val* **next-address** { **strict** | **loose** } **ipv4 unicast ip_address unnumbered** *link_address*
no explicit-path { **name** | **identifier** } [*name* | *id_value*]
explicit-path { **name** | **identifier** } [*name* | *id_value*] **no index** *index_val*

Syntax Description

name	Specifies name of the explicit path.
identifier	Specifies unique identifier of the explicit path.
index	Uniquely identifies each next hop entry in an explicit-path. Also it specifies the order in which the hop entries will be processed. The lowest index shall be processed first.
next-address	Specifies next hop address.
strict	Specifies that next hop must be reached using a specified path.
loose	Specifies that next-hop need to be reached using any of the available paths.
ipv4 unicast	Specifies an IPv4 unicast next hop.
ip_address	Specifies next hop IP address.
unnumbered	Specifies that next hop is an unnumbered link. An unnumbered link is identified using router id and interface index.
name	Defines explicit path name.
id_value	Defines explicit path id. The valid range for explicit path id is from 1 to 65535.
index_val	Defines a unique id for a next hop entry. The valid range for next hop index is from 1 to 65535.

link_address	Defines ip_address of next hop link.
router_id	Defines ip_address of next hop node.

Command Default

None

Command Modes

Config mode

Command History

Release	Modification
Release 5.2.4	This command was introduced.

Usage Guidelines

None

Task ID

Task ID	Operation
ouni	write

Example

This example shows how to define explicit path for a circuit.

```
RP/0/RP0/CPU0:router(config)# explicit-path name Exp_path_OPT1_to_OPT5
index 10 next-address strict ipv4 unicast 1.1.1.1
index 20 next-address loose ipv4 unicast unnumbered 1.1.1.2 200

RP/0/RP0/CPU0:router(config)# explicit-path identifier 65
index 1 next-address strict ipv4 unnumbered unicast 1.1.1.2 50
index 2 next-address loose ipv4 unicast 1.1.1.1
```

gmpls optical-nni

To create a network-to-network interface (NNI), use the **gmpls optical-nni** command in the config mode. To delete NNI interface, use the **no** form of this command.

mpls traffic-eng
gmpls optical-nni
no gmpls optical-nni

Syntax Description

gmpls	Configures the routing protocol.
optical-nni	Specifies the network-network interface.

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.

This sub mode causes the CLI prompt to change from "config-mpls-te" to “config-te-gmpls”. When you remove the gmpls optical-nni sub mode, it removes the entire configuration in it (as for any other parser sub mode) and the immediate destruction of all GMPLS tunnels.

Task ID

Task ID	Operation
ouni	write

Example

This example shows how to create NNI interface:

```
RP/0/RP0:hostname(config)# mpls traffic-eng
RP/0/RP0:hostname (config-mpls-te)# gmpls optical-nni
RP/0/RP0:hostname(config-mpls-te)# gmpls optical-nni topology instance ospf OTN area 0
RP/0/RP0:hostname(config-mpls-te)# gmpls optical-nni controller OTU40/2/0/0
RP/0/RP0:hostname(config-mpls-te)# gmpls optical-nni controller tti-mode otu-sm
RP/0/RP0:hostname(config-mpls-te)# gmpls optical-nni controller tti-mode otu admin-weight
1

RP/0/RP0:19#show running-config

 Building configuration...
!! IOS XR Configuration version = 5.2.3.13L
!! Last configuration change at Sun Jan 18 10:03:02 2015 by root
```

```
!
hostname 19
logging buffered debugging
telnet vrf default ipv4 server max-servers 99
username root
 group root-lr
 group cisco-support
 secret 5 $1$1DQO$diVcoqlNPwQMGpHfsAHVk.
!
explicit-path name protect-path
 index 1 next-address strict ipv4 unicast unnumbered 1.1.1.2 11
 index 2 next-address strict ipv4 unicast unnumbered 1.1.1.4 7
!
line console
 exec-timeout 0 0
!
vty-pool default 0 99 line-template telnet
ntp
 server 10.78.161.100
!
interface Loopback0
 ipv4 address 1.1.1.13 255.255.255.255
!
interface MgmtEth0/RP0/CPU0/0
 ipv4 address 10.78.161.31 255.255.255.0
!
interface MgmtEth0/RP0/EMS/0
 shutdown
!
interface MgmtEth0/RP0/CRAFT/0
 shutdown
!
controller Optics0/0/0/3
 port-mode Otn framing opu2
!
controller Optics0/0/0/4
 port-mode SDH framing opu2 mapping bmp
!
controller Optics0/0/0/5
 port-mode Sonet framing opu2 mapping bmp
!
controller Optics0/0/0/14
 port-mode Otn framing opu2
!
controller Optics0/0/0/15
 port-mode Ethernet framing opu2e mapping bmp
!
controller Optics0/0/0/16
 port-mode Otn framing opu2
!
controller Optics0/0/0/17
 port-mode Otn framing opu2
!
controller Optics0/0/0/18
 port-mode Otn framing opu2
!
controller Optics0/0/0/19
 port-mode Otn framing opu2
!
controller Optics0/2/0/0
 port-mode Otn framing opu4
!
controller Optics0/2/0/1
 port-mode Otn framing opu4
```

```
!
controller Optics0/5/0/12
 port-mode Ethernet framing opu0 mapping gmp
!
controller Optics0/5/0/13
 port-mode Ethernet framing opu0 mapping gmp
!
controller OTU40/2/0/0
 gcc0
 secondary-admin-state normal
!
controller OTU40/2/0/1
 gcc0
 secondary-admin-state normal
!
interface GCC00/2/0/0
 ipv4 unnumbered Loopback0
!
interface GCC00/2/0/1
 ipv4 unnumbered Loopback0
!
router static
 address-family ipv4 unicast
  0.0.0.0/0 10.78.161.1
 !
!
router ospf OTN
 nsr
 router-id 1.1.1.13
 nsf ietf
 area 0
  mpls traffic-eng
  interface Loopback0
   passive disable
  !
  interface GCC00/2/0/0
   passive disable
  !
  interface GCC00/2/0/1
   passive disable
  !
 !
 mpls traffic-eng router-id 1.1.1.13
!
mpls traffic-eng
 attribute-set path-protection-aps APS
  timers
   wait-to-restore 300
  !
  sub-network connection-mode SNC-I
  protection-mode revertive
  protection-type 1-plus-1-UNIDIR-APS
 !
 attribute-set path-protection-aps New_Profile2
  sub-network connection-mode SNC-N
  protection-type 1-plus-1-BDIR-APS
 !
 attribute-set path-protection-aps New_Profile3
  timers
   wait-to-restore 300
  !
  sub-network connection-mode SNC-N
  protection-mode revertive
  protection-type 1-plus-1-BDIR-APS
```

```
!
attribute-set path-protection-aps New_Profile4
 timers
  wait-to-restore 300
 !
 sub-network connection-mode SNC-I
 protection-mode revertive
 protection-type 1-plus-1-BDIR-APS
!
gmpls optical-nni
 topology instance ospf OTN area 0
  controller OTU40/2/0/0
   tti-mode otu-sm
   admin-weight 1
  !
  controller OTU40/2/0/1
   tti-mode otu-sm
   admin-weight 1
  !
 !
 controller Odu-Group-Te 0
  signalled-name s1
  logging events lsp-status signalling-state
  logging events lsp-status switch-over
  logging events lsp-status cross-connect
  logging events lsp-status insufficient-bandwidth
  signalled-bandwidth ODU2e
  static-uni ingress-port controller TenGigECtrlr0/0/0/15 egress-port unnumbered 69
  destination ipv4 unicast 1.1.1.4
  path-protection attribute-set New_Profile4
  path-option 1 dynamic protected-by 2 lockdown
  path-option 2 dynamic lockdown
 !
 controller Odu-Group-Te 1
  signalled-name s2
  logging events lsp-status signalling-state
  logging events lsp-status switch-over
  logging events lsp-status cross-connect
  logging events lsp-status insufficient-bandwidth
  signalled-bandwidth ODU2
  static-uni ingress-port controller OTU20/0/0/14 egress-port unnumbered 68
  destination ipv4 unicast 1.1.1.4
  path-protection attribute-set New_Profile4
  path-option 1 dynamic protected-by none restored-from 3 lockdown
  path-option 3 dynamic lockdown
 !
 controller Odu-Group-Te 2
  signalled-name s3
  logging events lsp-status signalling-state
  logging events lsp-status switch-over
  logging events lsp-status cross-connect
  logging events lsp-status insufficient-bandwidth
  signalled-bandwidth ODU0
  static-uni ingress-port controller GigabitEthCtrlr0/5/0/12 egress-port unnumbered 56
  destination ipv4 unicast 1.1.1.4
  path-protection attribute-set New_Profile3
  path-option 1 dynamic protected-by 2 lockdown
  path-option 2 dynamic lockdown
 !
 controller Odu-Group-Te 3
  signalled-name s4
  logging events lsp-status signalling-state
  logging events lsp-status switch-over
  logging events lsp-status cross-connect
```

```
   logging events lsp-status insufficient-bandwidth
   signalled-bandwidth ODU2
   static-uni ingress-port controller OC1920/0/0/5 egress-port unnumbered 67
   destination ipv4 unicast 1.1.1.4
   path-protection attribute-set New_Profile4
   path-option 1 dynamic protected-by none restored-from 3 lockdown
   path-option 3 dynamic lockdown
  !
 !
!
xml agent tty
!
http server
```

gmpls optical-uni controller

To create a static uni xconnect, use the **gmpls optical-uni** command in the config mode. To delete an GMPLS controller, use the **no** form of this command.

static-uni {**ingress-port controller**} [*name-of-the-controller R/S/I/P*] {**egress-port unnumbered**} [*value*]

no static-uni {**ingress-port controller**} [*name-of-the-controller R/S/I/P*] {**egress-port unnumbered**} [*value*]

Syntax Description

static-uni	Specifies the static-uni of the tunnel.
ingress-port	Specifies the ingress port.
controller	Specifies the ingress port controller.
name-of-the-controller	Displays the name of the ingress controller.
R/S/I/P	Displays the Rack/Slot/Instance/Port of the controller
egress-port	Specifies the egress port.
unnumbered	Specifies the tail-end customer port.
value	Enter the tail-end customer port IF index. Use **show snmp interface** command to see the IF index value that starts from 0 to 4294967295. Also, **snmp persist** command to the IF index value static. **Note** Refer the running configuration sample under **gmpls-optical-nni**.

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

This example shows how to access the interface instance of an GMPLS optics controller on port2:

```
RP/0/RP0:hostname(config)# mpls traffic-eng
RP/0/RP0:hostname(config-mpls-te)# gmpls optical-uni controller optics 0/0/0/2
```

interface gcc0

To configure the gcc0 on the ospf interface, use the **interface gcc0** command in the config mode. To delete the gcc0 on the ospf interface, use the **no** form of this command.

interface gcc0 [*R/S/I/P*]

no interface gcc0 [*R/S/I/P*]

Syntax Description

gcc0	Configures the general communication channel (GCC) on an OSPF interface.
R/S/I/P	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

This example shows how to configure the gcc0 on an ospf interface:

```
RP/0/RP0:hostname(config)# router ospf 1
RP/0/RP0:hostname(config-ospf)# area 0
RP/0/RP0:hostname(config-ospf-ar)# interface gcc0 0/1/0/12
```

interface loopback

To configure the loopback on an ospf interface, use the **interface loopback** command in the config mode. To delete the loopback from an ospf interface, use the **no** form of this command.

interface loopback [*ID Value*]

no interface loopback [*ID Value*]

Syntax Description

loopback	Configures the loopback on an OSPF interface.
ID	Displays the loopback ID of the OSPF interface.

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

This example shows how to configure the loopback on an ospf interface:

```
RP/0/RP0:hostname(config)# router ospf 1
RP/0/RP0:hostname(config-ospf)# area 0
RP/0/RP0:hostname(config-ospf-ar)# interface loopback 0
```

link-id

To configure the link identifier address of the LMP controller, use the **link-id** command in the config mode. To delete the link identifier address of the LMP controller, use the **no** form of this command.

link-id {**ipv4 unicast**} *value*

no link-id {**ipv4 unicast**} *value*

Syntax Description

ipv4	Configures the local link identifier address of the LMP controller.
unicast	Configures the unicast address of the LMP controller.
value	Displays the link identifier address of the LMP 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

This example shows how to configure the local link identifier address of the LMP controller:

```
RP/0/RP0:hostname(config)# lmp gmpls optical-uni controller optics 0/0/0/2
RP/0/RP0:hostname(config-lmp-gmpls-uni-cntl)# link-id ipv4 unicast 1.2.3.4
```

lmp gmpls optical-uni controller

To configure an LMP controller, use the **lmp gmpls optical-uni** command in the config mode. To delete an LMP controller, use the **no** form of this command.

lmp gmpls optical-uni [**controller** | **neighbor** | **router-id**] *name-of-the-controller R/S/I/P*

no lmp gmpls optical-uni [**controller** | **neighbor** | **router-id**] *name-of-the-controller R/S/I/P*

Syntax Description

controller	Configures the lmp gmpls uni on a controller.
name-of-the-controller	Displays the name of the controller.
R/S/I/P	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

This example shows how to access the interface instance of an LMP optics controller on port2:

```
RP/0/RP0:hostname(config)# lmp gmpls optical-uni controller optics 0/0/0/2
```

logging events lsp status state

To enable the logging events of lsp status state messages for logical and physical links, use the **logging events lsp status state** command in the config configuration mode. To delete this command, use the **no** form of this command.

logging events lsp-status state
no logging events lsp-status state

Syntax Description

logging	Enables the login event of Lsp status.
events	Specifies per interface logging events.
lsp-state	Enables interface LSP state changes alarms.
state	Enables interface LSP UP/DOWN changes alarms.

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.

There are three types of LSP: working, protected and restore. If working lsp is not configured properly at the initial setup then the other two lsps will also not be available. Selection of the same LSP (working/ protected) to pick traffic at the head and the tail end is performed by the hardware.

The switching line should be between 50 milliseconds from one LSP to the other.

Task ID

Task ID	Operation
ouni	write

Example

This example shows how to logging inside a controller for logging events lsp-status state:

```
RP/0/RP0/CPU0:router(config-te-gmpls-tun-0x7)# logging events lsp-status state
```

path option

To create a path option of GMPLS tunnel, use the **path-option** command in the config mode. To delete this behavior, use the **no** form of this command.

path-option [*path id*] {**explicit**} [*name* | *identifier*] **path name** [*lockdown* | *protected-by* | *restored-from*] [*restored from id*] [**lockdown** | **restored-from**] [*restored from id*] **lockdown**
path-option [*path id*] {**explicit**} [**name** | **identifier**] [*explicit path name* | *explicit path id*] [**xro-attribute-set**] [*xro attribute set name*] **lockdown verbatim**
path-option [*path id*] {**dynamic**} [*lockdown* | *protected-by* | *restored-from*] [*restored from id*] [**lockdown** | **restored-from**] [*restored from id*] [**xro-attribute-set**] [*xro attribute set name*] **lockdown**
path-option [*path id*] **no-ero** [**xro-attribute-set**] [*xro attribute set name*] **lockdown**
no path-option [*path id*]
no path-option [*id*] {**explicit**} [*name* | *identifier*] **path name** [*lockdown* | *protected-by* | *restored-from*] [*id*] [**lockdown** | **restored-from**] [*id*] **lockdown**
no path-option [*path id*] {**explicit**} [**name** | **identifier**] [*explicit path name* | *explicit path id*] [**xro-attribute-set**] [*xro attribute set name*] **lockdown verbatim**
no path-option [*path id*] {**dynamic**} [*lockdown* | *protected-by* | *restored-from*] [*restored from id*] [**lockdown** | **restored-from**] [*restored from id*] [**xro-attribute-set**] [*xro attribute set name*] **lockdown**
no path-option [*path id*] **no-ero** [**xro-attribute-set**] [*xro attribute set name*] **lockdown**

Syntax Description

dynamic	Specifies that label switched paths (LSP) are dynamically calculated.
explicit	Specifies that LSP paths are IP explicit paths.
path id	Configures the path option id. The valid range is from 1 to 1000.
path name	Specifies the path name of the IP explicit path.
id	Configures the protected-by id. The valid range is from 1 to 1000.
restored from id	Configures the restored-from id. The valid range is from 1 to 1000.
explicit path name	Configures the explicit path name.
explicit path id	Configures the explicit path id.
xro-attribute-set	Defines the attribute set for circuit diversity.

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.

At the time of initial setup, if the working LSP does not come-up, GMPLS does not try to bring up service on the restore Path-option; you will need to fix the working path manually.

xro-attribute-set is used only for creating a diverse circuit.

Task ID

Task ID	Operation
ouni	write

Example

This example shows how to create a path option for an ODU-Group-Te:

```
RP/0/RP0/CPU0:router(config-mpls-tun-0x7)# path-option 1 explicit name test protected-by 9
 restored-from 8 lockdown
RP/0/RP0/CPU0:router(config-mpls-tun-0x7)# path-option 6 dynamic protected-by 7 restored-from
 8 lockdown
RP/0/RP0/CPU0:router(config-mpls-tun-0x7)# path-option 1 dynamic protected-by none
xro-attribute-set Xro_nni1_tun1_div_tun0 lockdown
RP/0/RP0/CPU0:router(config-mpls-tun-0x7)# no path-option 6 dynamic protected-by 7
restored-from 8 lockdown
```

Example

This example shows how to create a path option for UNI circuits:

```
RP/0/0RP0RSP0/CPU0:router:hostname (config-te-gmpls-cntl)# tunnel-properties path-option 1
 explicit name Exp_path_OPT1_to_OPT5 xro-attribute-set XRO_Tun1_Diverse lockdown verbatim
RP/0/RP0/CPU0:router(config-mpls-tun-0x7)# path-option 1 dynamic protected-by none
xro-attribute-set Xro_nni1_tun1_div_tun0 lockdown
RP/0/0RP0RSP0/CPU0:router:hostname (config-te-gmpls-cntl)# tunnel-properties path-option
10 no-ero lockdown
RP/0/RP0/CPU0:router(config-mpls-tun-0x7)# no path-option 6 dynamic protected-by 7
restored-from 8 lockdown
```

path-protection

To configure the path-protection attribute set, use the **path-protection** command in the config mode. To remove the path-protection attribute set, use the **no** form of this command.

attribute-set {**path-protection-aps**} [*name-of-the-attribute-set*]
gmpls nni {**controller odu-group-te**} *value*
path-protection {**attribute-set**} [*name-of-the-attribute-set*]
no path-protection {**attribute-set**} [*name-of-the-attribute-set*]

Syntax Description

attribute-set	Specifies the attribute-set of the controller.
path-protection-aps	Displays the attribute set of the path protection.
name-of-the-attribute-set	Displays the name of the attribute set.
path-protection	Displays the path protection of the controller.
attribute-set	Displays the path protection attribute set.

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.

Path protection specifies the protection attributes for tunnel.

Task ID

Task ID	Operation
ouni	write

Example

This example shows how to configure the static-uni endpoints of the tunnel.

```
RP/0/RP0/CPU0:router(config)# mpls traffic-eng
RP/0/RP0/CPU0:router(config-mpls-te)# attribute-set path-protection-aps ss
RP/0/RP0/CPU0:router(config-te-attribute-set)# exit
RP/0/RP0/CPU0:router(config-mpls-te)# gmpls nni controller odu-group-te 6
RP/0/RP0/CPU0:router(config-te-gmpls-tun-0x6)# path-protection attribute-set ss
```

record-route

To record the route used by a GMPLS OTN tunnel, use the **record-route** command in the config mode. To stop the record-route, use the **no** form of this command.

record-route
no record-route

This command has no keywords or arguments.

Command Default

Disable

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.

Records the route of the GMPLs circuit.

Task ID

Task ID	Operation
ouni	write

Example

This example shows how to configure record-route for a GMPLS OTN tunnel.

```
RP/0/RP0/CPU0:router(config-te-gmpls-tun-0x7)# record-route
```

router ID

To configure the ospf router ID, use the **router-id** command in the config mode. To delete the ospf router ID, use the **no** form of this command.

router-id *value*

no router-id *value*

Syntax Description

router-id	Configures the router ID of the OSPF interface.
value	Displays the router ID of the OSPF interface.

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

This example shows how to configure the router-ID of the OSPF interface:

```
RP/0/RP0:hostname(config)# router ospf 1
RP/0/RP0:hostname(config-ospf)# router-id 88.88.88.88
```

router ospf

To configure the router ospf process ID, use the **router ospf** command in the config mode. To delete the router ospf process ID, use the **no** form of this command.

router ospf *process-ID*

no router ospf *process-ID*

Syntax Description

router ospf	Configures the router OSPF process ID.
process-ID	Displays the process ID of the OSPF. Process ID can be numeric, alphanumeric or textual.

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

This example shows how to configure the router ospf process-ID:

```
RP/0/RP0:hostname(config)# router ospf 1
```

rsvp controller

To configures RSVP mode of the OTUk controller, use the **rsvp controller** command in the config mode. To delete the RSVP controller, use the **no** form of this command.

rsvp controller {**otuk**} *R/S/I/P*
no rsvp controller {**otuk**} *R/S/I/P*

Syntax Description

rsvp	Enters the controller mode.
otuk	Name of the OTUk controller.
R/S/I/P	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.

RSVP is an external process responsible for signaling the tunnel and maintaining the tunnel states at each node. The TE signal module makes use of the RSVP process, to request the signaling/changing/tearing-down of new LSPs and for handling incoming LSP setup/change/tear-down requests.

Task ID

Task ID	Operation
ouni	write

Example

This example shows how to configure RSVP mode of the OTUk controller.

```
RP/0/RP0/CPU0:router(config)# rsvp controller otu2 0/0/0/10
```

record srlg

To record the SRLGs used by a GMPLS UNI connection during signaling, use the **record srlg** command in MPLS-TE GMPLS UNI controller tunnel properties mode. To disable SRLG recording, use the **no** form of this command.

record srlg

no record srlg

Command Default None

Command Modes MPLS-TE GMPLS UNI controller tunnel properties configuration.

Command History

Release	Modification
Release 6.1.32	This command was introduced.

Usage Guidelines None

Task ID

Task ID	Operation
mpls-te	read, write
ouni	read, write

Example

The following example shows how to configure SRLG recording on Optics which is part of GMPLS:

```
RP/0/RP0:hostname# configure
RP/0/RP0:hostname(config)# mpls traffic-eng
RP/0/RP0:hostname(config-mpls-te)# gmpls optical-uni
RP/0/RP0:hostname(config-te-gmpls-uni)# controller optics 0/1/0/2
RP/0/RP0:hostname(config-te-gmpls-uni)# tunnel-properties
RP/0/RP0:hostname(config-te-gmpls-tun)# record srlg
```

show ospf neighbor

To display the odpf ne interface, use the **show ospf neighbor** command in the exec or config mode.

show ospf neighbor

Syntax Description

ospf	Displays the ospf interface.

Command Modes

Exec mode

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	read

Example

This example shows how to display the ospf on an interface:

```
RP/0/RP0:hostname show ospf neighbor
```

```
Mon Aug 11 03:35:19.672 UTC

* Indicates MADJ interface

Neighbors for OSPF 1

Neighbor ID     Pri   State           Dead Time   Address         Interface
77.77.77.77     1     FULL/  -        00:00:38    8.8.8.2         GCC00/1/0/1
    Neighbor is up for 00:00:06
77.77.77.77     1     FULL/  -        00:00:36    5.5.5.2         GCC00/1/0/12
    Neighbor is up for 00:00:04
```

show mpls traffic-eng tunnels detail

To display the tunnel status and configuration use the **show mpls traffic-eng tunnels detail** command in the exec mode.

show mpls traffic-eng tunnels detail

Syntax Description

mpls	Specifies to display the mpls information.
traffic-eng	Specifies to display traffic engineering information.
tunnels	Specifies to display traffic engineering tunnel status.
detail	Specifies to display extra details of tunnel status and configuration.

Command Modes

Exec mode

Command History

Release	Modification
Release 5.2.4	This command was introduced.

Task ID

Task ID	Operation
otn	read

Example

This example shows how to display details of mpls traffic engineering tunnel status and configuration :

```
RP/0/RP0:hostname # show mpls traffic-eng tunnels detail
```

```
Name: Odu-Group-Te11  Destination: 10.77.132.185  Ifhandle:0x82001e4
  Signalled-Name: 3M_otn11
  Status:
    Admin:    up Oper:   up   Path:  valid   Signalling: connected

    path option 1, (LOCKDOWN) type dynamic  (Basis for Current, path weight 1)
      Protected-by PO index: none
        Reroute pending (DROP)
    Bandwidth Requested: 10037273 kbps  CT0
    Creation Time: Thu Oct  5 08:59:53 2017 (00:45:09 ago)
  Config Parameters:
    Bandwidth: ODU2
    Priority: 24  0 Affinity: 0x0/0xffff
    Metric Type: TE (default)
    Path Selection:
      Tiebreaker: Min-fill (default)
    Hop-limit: disabled
    Cost-limit: disabled
```

```
    Path-invalidation timeout: 10000 msec (default), Action: Tear (default)
    AutoRoute: disabled  LockDown:  enabled  Policy class: not set
    Forward class: 0 (default)
    Forwarding-Adjacency: disabled
    Autoroute Destinations: 0
    Loadshare:          0 equal loadshares
    Auto-bw: disabled
    Fast Reroute: Disabled, Protection Desired: None
    BFD Fast Detection: Disabled
    Reoptimization after affinity failure: Enabled
    Soft Preemption: Disabled
  SNMP Index: 72
  Binding SID: None
  Static-uni Info:
    Locally Terminated Interface Name: TenGigE0_1_0_0_200  Ifhandle: 0x82001fc
      Local Termination Type: Ether
      State: Terminated up since Thu Oct  5 08:59:54 2017
      SRLG Values: 2,  7,  8,  20,  21,  33,
  Remote termination Interface: 0.0.0.0 [42]
    Egress Client Port: 0.0.0.0 [42]
  Working Homepath ERO:
    Status: Down
    Explicit Route:
  Diversity Info: None

  History:
    Tunnel has been up for: 00:45:04 (since Thu Oct 05 08:59:58 UTC 2017)
    Current LSP:
      Uptime: 00:45:08 (since Thu Oct 05 08:59:54 UTC 2017)
  Current LSP Info:
    Instance: 302, Signaling Area: OSPF OTN area 0
    Uptime: 00:45:08 (since Thu Oct 05 08:59:54 UTC 2017), Signaling State: Up,
Oper State: Up
    G-PID: Gfp_F Generic Framing Procedure-Framed (54)
      XC Id: 0
      State: Connected
      Uptime: Thu Oct  5 08:59:54 2017
      Egress Interface: OTU40/1/0/0 (State:Up  Ifhandle:0x8a0020c)
      Egress Controller: ODU40_1_0_0 (State:Up Ifhandle:0x8a00214)
      Egress Sub Controller: ODU20_1_0_0_42 (State:Up, Ifhandle:0x82001ec)
      Path Ingress  label: TPN: 4 BitMap Len: 80 BitMap: 25:32
      Resv Egress  label: TPN: 4 BitMap Len: 80 BitMap: 25:32
    Router-IDs: local      10.77.132.187
                downstream 10.77.132.185
    Soft Preemption: None
    SRLGs: mandatory collection
    Path Info:
      Outgoing:
        Explicit Route:
          Strict, 10.77.132.185(19)
          Strict, 10.77.132.185
          Strict, 10.77.132.185(42)

      Record Route: Empty
      Tspec: signal_type ODU2 Bitrate 0kbps NVC 0 MT 1

      Session Attributes: Local Prot: Not Set, Node Prot: Not Set, BW Prot: Not
Set
                          Soft Preemption Desired: Not Set
    Path Protection Info:
      SNC Mode:SNC-N TCM id:Not used Type:Bi-directional APS
      Path Protection Profile Type: 1+0
      Bits S:0 P:0 N:0 O:0
      Timeout WTR:0 milliseconds HoldOff:0 milliseconds
```

```
    Resv Info:
      Record Route:
        IPv4 10.77.132.185, flags 0x20 (Node-ID)
        Label         Label TPN: 4 BitMap Len: 80 BitMap: 25:32 , flags 0x1

        Unnumbered 10.77.132.185 (19), flags 0x0
        Label         Label TPN: 4 BitMap Len: 80 BitMap: 25:32 , flags 0x1
      Fspec: signal_type ODU2 Bitrate 0kbps NVC 0 MT 1

  Persistent Forwarding Statistics:
    Out Bytes: 0
    Out Packets: 0
Displayed 2 (of 2) heads, 0 (of 0) midpoints, 0 (of 0) tails
Displayed 2 up, 0 down, 0 recovering, 0 recovered heads
```

shutdown lsp-type

To shutdown the Lsp of the tunnel, use the **shutdown lsp-type** command in the config mode. To restart the lsp of the tunnel, use the **no** form of this command.

shutdown
shutdown [**Lsp-type**] [*current* | *restore* | *standby*]
no shutdown [**Lsp-type**] [*current* | *restore* | *standby*]

Syntax Description

shutdown	Shut down the LSP type and tunnel. **Note** If we run the shutdown under odu-group-te, tunnel shuts down .
Lsp type	Specifies the shutdown for particular Lsp type

Command Default

Disable

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.

If we run the shutdown under odu-group-te, the tunnel shuts down. If you want to shut down that specific LSP then you need to specify the lsp type: working, protected or restore.

Task ID

Task ID	Operation
ouni	write

Example

This example shows how to shutdown Lsp-type.

```
RP/0/RP0/CPU0:router(config-te-gmpls-tun-0x7)# shutdown Lsp-type current
```

This example shows to global shutdown.

```
RP/0/RP0/CPU0:router(config-te-gmpls-tun-0x7)# shutdown
```

signalled-bandwidth

To configure the bandwidth required for a GMPLS OTN tunnel, use the **bandwidth command** in the config mode. To delete the bandwidth required for a GMPLS OTN tunnel, use the **no** form of this command.

GFPF is used for Ethernet 10 gig = oduflex 1.25, multiply them by variable.

CBR is used for ODU.

signalled-bandwidth *oduk*
signalled-bandwidth *value***framing type**} [*CBR* | *GFP-F-Fixed*]
no signalled-bandwidth *value***framing type**} [*CBR* | *GFP-F-Fixed*]

Syntax Description

signalled-bandwidth	Specifies the tunnel bandwidth requirement to be signaled. • ODU0: Signalled Bandwidth for ODU0 • ODU1: Signalled Bandwidth for ODU1 • ODU1e: Signalled Bandwidth for ODU • ODU1f: Signalled Bandwidth for ODU1f • ODU2: Signalled Bandwidth for ODU2 • ODU2e: Signalled Bandwidth for ODU2e • ODU2f: Signalled Bandwidth for ODU2f • ODU3: Signalled Bandwidth for ODU3 • ODU3e1: Signalled Bandwidth for ODU3e1 • ODU3e2: Signalled Bandwidth for ODU3e2 • ODU4: Signalled Bandwidth for ODU4 • ODUFlex: Signalled Bandwidth for ODUFlex
ODU2	Configures the odu-type of the ODU group controller.
value	Specifies the tunnel bandwidth range. That is 1 to 104857600 Kbps.
framing type	Specifies the framing type 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.

The signaled bandwidth is the ODU signal type that the tunnel uses. In the case of an ODUflex tunnel, the number of 1.25 or 2.5 Gpbs time slots required is automatically computed based on the user provided bit-rate and tolerance.

Task ID

Task ID	Operation
ouni	write

Example

This example shows how to configure the bandwidth required for an MPLS-TE tunnel:

```
RP/0/RP0:hostname(config-gmpls-tun-0x7)# signallled-bandwidth odu2 framing-type CBR
RP/0/RP0:hostname(config-gmpls-tun-0x7)# signallled-bandwidth odu2
```

signalled-name

To configure the signal name to the tunnel, use the **signalled-name** command in the config mode. To remove the signal name of the tunnel, use the **no** form of this command.

mpls {**traffic-eng**}
gmpls nni controller {**odu-group-te**} *value*
signalled-name *value*
no signalled-name *value*

Syntax Description

signalled-name	Displays the signal name of the tunnel.
value	Specifies the name of the signal. The maximum length of the signal name is 64 characters.

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.

Signalled name specifies the name of the tunnel.

Task ID

Task ID	Operation
ouni	write

Example

This example shows how to configure the static-uni endpoints of the tunnel.

```
RP/0/RP0/CPU0:router(config)# mpls traffic-eng
RP/0/RP0/CPU0:router(config-mpls-te)# gmpls optical-nni
RP/0/RP0/CPU0:router(config-te-gmpls-nni)# controller odu-group-Te 0
RP/0/RP0/CPU0:router(config-te-gmpls-tun-0x0)# signalled-name s1
```

static-uni

To set the static-uni endpoint of the tunnel, use the **static-uni** command in the config mode. To remove the static-uni of the tunnel, use the **no** form of this command.

static-uni {**ingress-port controller**} [*name-of-the-controller R/S/I/P*] {**egress-port unnumbered**} [*value*]
no static-uni {**ingress-port controller**} [*name-of-the-controller R/S/I/P*] {**egress-port unnumbered**} [*value*]

Syntax Description

static-uni	Specifies the static-uni of the tunnel.
ingress-port	Specifies the ingress port.
controller	Specifies the ingress port controller.
name-of-the-controller	Displays the name of the ingress controller.
R/S/I/P	Displays the Rack/Slot/Instance/Port of the controller.
egress-port	Specifies the egress port.
unnumbered	Specifies the tail-end customer port.
value	Enter the tail-end customer port IF index. Use **show snmp interface** command to see the IF index value that starts from 0 to 4294967295. Also, **snmp persist** command to the IF index value static.

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.

The static-uni CLI is used to specify that the NNI tunnel must have its ingress and egress end-points automatically connected to a UNI client port. On the head-end, this cross-connection is done locally. For the tail-end, the cross-connect request is signaled using the RSVP egress control and the tail-end OTN node performs the cross-connect during the tail-end tunnel provisioning.

Task ID

Task ID	Operation
ouni	write

Example

This example shows how to configure the static-uni endpoints of the tunnel.

```
RP/0/RP0/CPU0:router(config-te-gmpls-tun-0x7)# static-uni ingress-port controller otu2
0/0/0/2 egress-port unnumbered 16
```

tunnel-properties

To configure the tunnel properties of a tunnel, use the **tunnel-properties** command in the config mode. To delete the tunnel properties, use the **no** form of this command.

tunnel-properties [**destination** | **logging** | **path-option** | **priority** | **record-route** | **signalled-name** | **tunnel-id**] *value*

no tunnel-properties [**destination** | **logging** | **path-option** | **priority** | **record-route** | **signalled-name** | **tunnel-id**] *value*

Syntax Description

destination	Configures the tunnel destination.
logging	Configures the per-interface logging configuration.
path-option	Configures the GMPLS-UNI path option.
priority	Configures the tunnel priority.
record-route	Record the route used by the tunnel.
signalled-name	Configures the signal name assigned to the tunnel.
tunnel-id	Configures the GMPLS-UNI tunnel ID.
value	Configures the tunnel ID of the tunnel. The valid range of tunnel ID is from 0 to 65535.

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

This example shows how to configure the tunnel ID of the tunnel:

```
RP/0/RP0:hostname(config)# mpls traffic-eng
RP/0/RP0:hostname(config-mpls-te)# gmpls optical-uni controller optics 0/0/0/2
RP/0/RP0:hostname(config-te-gmpls-cntl)# tunnel-properties tunnel-id 55
```