

Port Licensing

The Cisco Software License Activation feature is a set of processes and components to activate Cisco IOS-XE software feature sets by obtaining and validating fee-based Cisco software licenses.You should enable the license *only* for OCx ports. License is not required for the ports 0-15 (DSx ports).

You should associate a required license to a port. Many licenses can be configured for a port. Only one license can be associated with a port as only one rate can be configured at a time. Other licenses are not required unless rate is changed frequently.

No license is enabled on the port by default. Same port license (OC-3 or OC-12) can be used for Legacy OC-3 IM. A port can be enabled with any one of the following license types:

- OC-3
- OC-12
- OC-48

On each IM, OCx port can be configured on ports 16-19. For example, a maximum of four OC-3 ports can be configured on ports 16-19. A maximum of four OC-12 ports can be configured on ports 16-19. A maximum of one OC-48 port can be configured on ports 16-19.

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Information About Port Licensing

Scenario of IM Removal

- All licenses enabled on the IM ports are removed.
- The free licenses can be associated with the same or different IM ports.

Scenario of IM Re-insertion

- When IM is inserted back in the same slot, the IM ports require the licenses based on the configurations.
- The available free licenses are used and old configurations are retained.

- When free licenses are not available, the controller port moves to "shut" state and the following error message is displayed:

```
configure terminal
controller mediatype 0/1/19
mode sonet
rate oc3
controller sonet 0/1/19
rate oc3
 license is not enabled for this rate
% Unable to configure this rate.
end
```

- To remove the "shut" state, perform any one of the following actions:
  - Remove all the configurations present at rate level and beyond.
  - Enable the license on the port that has the same rate as that of the configured controller. For example, enable OC3 license for any OC3 configuration to remove the "shut" state.

  Thus, port configurations remain intact and controller port re-configuration is not required.

Installing a License

To install or upgrade a license by using the **license install** command, you must have already received the license file from the Cisco Product License Registration portal at http: www.cisco.com go license (or you already backed up the license by using the **license save** command).

To install the license:

```
enable
 show license udi
Convert the PAK to a license by entering the PAK and the UDI into the Cisco Product License
 Registration portal: http:  www.cisco.com go license
license install stored-location-url
show license detail
end
```

Enabling a License

Use the **platform enable controller Mediatype** <*slot/bay/port*> <*port rate*> to enable a particular license type on the controller port. Providing a particular license type is mandatory to enable the license on the IM.

Note This command is not applicable for DSx ports (0-15).

Note You should configure controller mediatype and controller SONET before enabling the license on the port. License enabling is allowed when the license with the same rate is configured on the port. The configuration fails if the license with a different rate is configured on the port.

To enable port licensing:

```
enable
configure terminal
platform enable controller MediaType 0/4/16 oc3
controller MediaType 0/4/16
mode sonet
exit
controller sonet 0/4/16
rate oc3
exit
```

Verifying License Configuration

Use the **show license detail** command to verify the license configuration:

```
Router#show license detail
Index: 15 Feature: oc3  Version: 1.0
        License Type: Permanent
        License State: Active, In Use
        License Count: 1/1/0  (Active/In-use/Violation)
        License Priority: Medium
        Store Index: 4
        Store Name: Primary License Storage
#
```

Disabling a License

Use the **no platform enable controller Mediatype** <*slot/bay/port*> <*port rate*> to disable a particular license type on the controller port.

Note Disabling a license is not successful if a rate is configured on the controller that requires the license. Hence, you should first remove the controller configuration before disabling the license.

To disable port licensing:

```
enable
configure terminal
controller sonet 0/4/16
sts-1 1
no vtg 1 t1 1 cem-group 23 unframed
no mode vt-15
controller MediaType 0/4/16
no mode sonet
exit
no platform enable controller MediaType 0/4/16 oc3
```

Uninstalling a License

To uninstall a license:

```
enable
configure terminal
```

```
no platform enable controller MediaType slot/bay/port OC3
end
license clear feature-name
```