

Configuring Other Logical System Statements

You can configure a variety of additional statements in conjunction with a logical system:

- Logical tunnel (It) interface—You can connect different logical systems together within the same router with an It interface. On M Series and T Series routers, you can create an It interface if you have a Tunnel Services PIC installed on an Enhanced FPC in your routing platform. On an M7i router, logical tunnel interfaces can be created by using the integrated Adaptive Services Module. On an MX Series router, the master administrator must configure logical tunnel interfaces by including the `tunnel-services` statement at the `[edit chassis fpc slot-number pic number]` hierarchy level. For more information about configuring tunnel interfaces on MX Series routers, see the *JUNOS System Basics Configuration Guide*.

You must treat each interface like a point-to-point connection because you can only connect one logical tunnel interface to another at any given time. Also, you must select an interface encapsulation type, specify a DLCI number or VLAN identifier, configure a corresponding protocol family, and set the logical interface unit number of the peering It interface. To configure the interface encapsulation type, include the `dlci`, `encapsulation`, `family`, `peer-unit`, and `vlan-id` statements at the following hierarchy levels:

- M Series, MX Series, or T Series router (master administrator only)—`[edit interfaces It-fpc/pic/O unit unit-number]`
- Logical system—`[edit logical-systems logical-system-name interfaces It-fpc/pic/O unit unit-number]`

```
[edit]
logical-systems logical-system-name {
  interfaces {
    It-fpc/pic/O {
      unit unit-number {
        encapsulation (ethernet | ethernet-ccc | ethernet-vpls | frame-relay
          | fame-relay-ccc | vlan | vlan-ccc | vlan-vpls);
        peer-unit number; # The logical unit number of the peering It
          interface.
        dlci dcli-number;
        vlan-id vlan-number;
        family (ccc | inet | inet6 | iso | mpls | tcc);
      }
    }
  }
}
```



NOTE: When you configure IPv6 addresses on a logical tunnel interface, you must configure unique IPv6 link local addresses for any logical interfaces that peer with one another. To configure a link local address, you must be the master administrator. Include a second IPv6 address with the `address` statement at the `[edit interfaces lt-fpc/pic/port unit unit-number family inet6]` hierarchy level. Link local addresses typically begin with the numbers `fe80` (such as `fe80::1111:1/64`).

- Dynamic Host Control Protocol (DHCP) relay (master administrator only)—In a logical system, you can configure a DHCP or BOOTP server, and allow TFTP and DNS packets to be forwarded. To configure a DHCP or BOOTP server in a logical system, include the `logical-system` statement at the `[edit forwarding-options helpers bootp interface interface-name server ip-address]` hierarchy level. To configure TFTP packet forwarding in a logical system, include the `logical-system` statement at the `[edit forwarding-options helpers tftp interface interface-name server ip-address]` hierarchy level. To configure DNS packet forwarding in a logical system, include the `logical-system` statement at the `[edit forwarding-options helpers domain interface interface-name server ip-address]` hierarchy level. For more information about DHCP relay, BOOTP, TFTP, or DNS, see the *JUNOS Policy Framework Configuration Guide*.
- Filter-based forwarding (master administrator only)—You can configure filter-based forwarding for a logical system or a routing instance within a logical system. To configure filter-based forwarding for a logical system, include the `logical-system` statement at the `[edit firewall filter filter-name term term-name then]` hierarchy level. To configure filter-based forwarding for a routing instance within a logical system, include the `routing-instance` option at the `[edit firewall filter filter-name term term-name then logical-system logical-system-name]` hierarchy level. For more information, see the *JUNOS Policy Framework Configuration Guide*.
- Bidirectional forwarding—You can configure Bidirectional Forwarding Detection Protocol (BFD) for a logical system or a routing instance within a logical system. To configure BFD for a logical system, include the `bfd-liveness-detection` statement at the `[edit logical-systems logical-system-name protocols]` hierarchy level. To configure BFD for a routing instance within a logical system, include the `bfd-liveness-detection` statement at the `[edit logical-systems logical-system-name routing-instances routing-instance-name protocols]` hierarchy level. This feature is supported for the following protocols: RIP, BGP, OSPF, and IS-IS. For more information, see the *JUNOS Routing Protocols Configuration Guide*.
- You can place yourself into the context of a specific logical system. To configure a logical system context, issue the `set cli logical-system logical-system-name` command.

When you enter logical system context mode and enter an operational mode command, the output of the command displays information related to the logical system only. For example, when you issue the `show route` command, the output shows only the routes that are assigned to the logical system.

```
user@P0> set cli logical-system ls1
```

```
Logical system: ls1
```

```
user@P0:ls1># Note that the user is now restricted to a logical system context.
```

To clear the logical system context and return to a full router (master router) context, issue the `clear cli logical-system` command.

```
user@P0:ls1> clear cli logical-system  
Cleared default logical system  
user@P0># Note that the user can now view the entire router again.
```

To achieve the same effect when using a JUNOScript client application, include the `<set-logical-system>` tag:

```
<rpc>  
<set-logical-system>  
<logical-system>ls1</logical-system>  
</set-logical-system>  
</rpc>
```

For more information about JUNOScript, see the *JUNOScript API Guide*.

- Enhanced SNMP support for logical systems (master administrator only)—By default, the SNMP manager can access SNMP data from all routing instances. To restrict the SNMP manager to data from the default routing instance only, include the `routing-instance-access` statement at the [edit snmp] hierarchy level. For more information about configuring SNMP, see the *JUNOS Network Management Configuration Guide*.
- SNMP community strings for routing instances and logical systems—To specify a routing instance when you add a client to an SNMP community, include the `routing-instance routing-instance-name` statement at the [edit snmp community community-name] hierarchy level. To specify a routing instance that is defined within a logical system, include the `routing-instance routing-instance-name` statement at the [edit snmp community community-name logical-system logical-system-name] hierarchy level.
- SNMPv3 trap targets for routing instances and logical systems—To specify a routing instance when you add a client to an SNMPv3 trap target, include the `routing-instance routing-instance-name` statement at the [edit snmp v3 target-address target-address] hierarchy level. To specify a logical system when you add a client in an SNMPv3 trap target, include the `logical-system logical-system-name` statement at the [edit snmp v3 target-address target-address] hierarchy level. For more information about configuring SNMP, see the *JUNOS Network Management Configuration Guide*.
- SNMP trap packets for routing instances—To specify a routing instance for SNMP trap packets sent by the router, include the `routing-instance routing-instance-name` statement at the [edit snmp trap-options] hierarchy level. To specify a routing instance that is defined within a logical system, include the `routing-instance routing-instance-name` statement at the [edit snmp trap-options logical-system logical-system-name] hierarchy level. For more information about configuring SNMP, see the *JUNOS Network Management Configuration Guide*.
- SNMP trap groups for routing instances and logical systems—To specify a routing instance of an SNMP trap group, include the `routing-instance routing-instance-name` statement at the [edit snmp trap-group trap-group-name] hierarchy level. To specify a logical system for an SNMP trap group, include the `logical-system logical-system-name` statement at the [edit snmp trap-group trap-group-name]

hierarchy level. For more information about configuring SNMP, see the *JUNOS Network Management Configuration Guide*.

In addition, you can configure only Frame Relay interface encapsulation on a logical tunnel interface when it is configured with an IPv6 address.

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