

Configuring Channelized OC12/STM4 IQ and IQE Interfaces (SONET Mode)

This section describes how to configure channelized OC12/STM4 IQ and IQE interfaces, discussing the following topics:

- Configuring an OC12/STM4 Interface on page 1
- Configuring T3 Interfaces on page 1
- Configuring OC3 Interfaces on page 2
- Configuring T1 Interfaces on page 3
- Configuring NxDS0 Interfaces on page 5
- Configuring Fractional T1 Interfaces on page 7

Configuring an OC12/STM4 Interface

You can configure one OC12 interface on a one-port Channelized OC12/STM4 IQ or IQE PIC. On a 4-port OC12/STM4 IQ or IQE PIC, you can configure one OC12 interface per port. To configure an OC12 interface, include the **no-partition** and **interface-type** statements at the [edit interfaces coc12-fpc/pic/port] hierarchy level:

```
[edit interfaces coc12-fpc/pic/port]
[Unresolved xref] interface-type so;
```

This configuration creates interface **so-fpc/pic/port**.



NOTE: Class-of-service (CoS) rules cannot be applied to an individual channel configured on channelized IQ and IQE interfaces. You can only apply CoS rules to the aggregate bit streams.

Configuring T3 Interfaces

To configure a T3 interface on an OC12 PIC, include the **partition**, **oc-slice**, and **interface-type** statements at the [edit interfaces coc12-fpc/pic/port] hierarchy level, specifying the **coc1** interface type:

```
[edit interfaces coc12-fpc/pic/port]
partition partition-number oc-slice oc-slice-range interface-type coc1;
```

This configuration creates interface **coc1-fpc/pic/port:channel**.

Then, include the **no-partition interface-type** statement at the [edit interfaces coc1-fpc/pic/port:channel] hierarchy level, specifying the **t3** interface type:

```
[edit interfaces coc1-fpc/pic/port:channel]
[Unresolved xref] interface-type t3;
```

This configuration creates interface **t3-fpc/pic/port:channel**.

The partition number is the sublevel interface partition index and is correlated with the channel number. For channelized OC1 interfaces, the partition number can be from 1 through 12.



NOTE: For channelized OC12 interfaces, channel numbering begins with 0 (:0). For channelized OC12/STM4 IQ and IQE interfaces, channel numbering begins with 1 (:1).

The OC-slice range is the range of SONET/SDH slices. For SONET/SDH interfaces, the OC-slice range specifies the bandwidth size required for the interface type you are configuring. For channelized OC1 interfaces, the OC slice can be from 1 through 12. You can configure only one OC slice per channelized OC1 interface.

The interface type is the channelized interface type or clear channel you are creating. For channelized OC12 interfaces, *type* can be **so** or **coc1**.

Example: Configuring T3 Interfaces

Configure a T3 interface using partition 3 and OC slice 3. This configuration creates interface **t3-1/1/0:3**:

```
[edit interfaces coc12-1/1/0]
partition 3 oc-slice 3 interface-type coc1;
[edit interfaces coc1-1/1/0:3]
no-partition interface-type t3;
```

For a full configuration example, see the *JUNOS Feature Guide*.

Configuring OC3 Interfaces

To configure an OC3 interface, include the **partition**, **oc-slice**, and **interface-type** statements at the **[edit interfaces coc12-fpc/pic/port]** hierarchy level, specifying the **so** interface type:

```
[edit interfaces coc12-fpc/pic/port]
partition partition-number oc-slice oc-slice-range interface-type so;
```

The partition number is the sublevel interface partition index. For SONET/SDH interfaces, the partition number does not correlate with bandwidth size. For OC3 interfaces, the partition number can be from 1 through 4.



NOTE: For channelized OC12 interfaces, channel numbering begins with 0 (:0). For channelized OC12 IQ and IQE interfaces, channel numbering begins with 1 (:1).

The OC-slice range is the range of SONET/SDH slices. For SONET/SDH interfaces, the OC-slice range specifies the bandwidth size required for the interface type you are configuring. OC3 interfaces must occupy three consecutive OC slices per interface, in one of the following forms:

- 1–3
- 4–6
- 7–9
- 10–12

By contrast, the T3 and OC1 IQ interfaces each occupy one OC slice per interface.

The interface type is the channelized interface type or data channel you are creating. For channelized OC12 interfaces, the interface type can be **coc1** or **so**.

Example: Configuring OC3 Interfaces

Configure an OC3 interface, using partition 1 and OC slices 4 through 6. This configuration creates interface **so-1/1/0:1**:

```
[edit interfaces coc12-1/1/0]
partition 1 oc-slice 4-6 interface-type so;
```

For a full configuration example, see the *JUNOS Feature Guide*.

Configuring T1 Interfaces

To configure T1 interfaces on a Channelized OC12 IQ or IQE PIC, perform the following tasks:

1. Partition the channelized OC12 interface into channelized OC1 interfaces by including the **partition**, **oc-slice**, and **interface-type** statements at the **[edit interfaces coc12-fpc/pic/port]** hierarchy level, specifying the **coc1** interface type:

```
[edit interfaces coc12-fpc/pic/port]
partition partition-number oc-slice oc-slice-range interface-type coc1;
```

2. If your network equipment uses VT mapping, partition the channelized OC1 interface into T1 interfaces by including the **partition** and **interface-type** statements at the **[edit interfaces coc1-fpc/pic/port]** hierarchy level, specifying the **t1** interface type:

```
[edit interfaces coc1-fpc/pic/port]
partition partition-number interface-type t1;
```

3. If your network equipment uses M13 or C-bit parity, convert the channelized OC1 interface into a channelized T3 interface by including the **no-partition** and **interface-type** statements at the **[edit interfaces coc1-fpc/pic/port:channel]** hierarchy level, specifying the **ct3** interface type. Note that because the **no-partition** statement is included, this configuration does not create another level of channelization, as denoted by the number of colons in the resulting interface.

```
[edit interfaces coc1-fpc/pic/port]
[Unresolved xref] partition-number interface-type ct3;
```

4. Partition the channelized T3 interface into T1 interfaces by including the **partition** and **interface-type** statements at the [edit interfaces *ct3-fpc/pic/port*] hierarchy level, specifying the **t1** interface type:

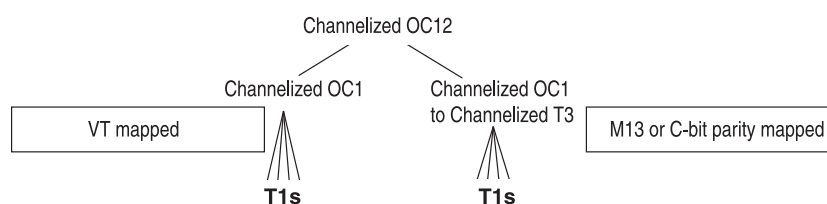
```
[edit interfaces ct3-fpc/pic/port]
partition partition-number interface-type t1;
```



NOTE: Class-of-service (CoS) rules cannot be applied to an individual channel configured on channelized IQ interfaces. You can only apply CoS rules to the aggregate bit streams.

Figure 1 shows VT-mapped and M13 or C-bit parity-mapped configurations of T1 interfaces.

Figure 1: T1 Interfaces on a Channelized OC12 PIC



Bold entries correspond to actual packet channels.

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Example: Configuring T1 Interfaces

Configure the following T1 interfaces:

```
t1-0/0/0:1:1
t1-0/0/0:1:2
t1-0/0/0:1:3
t1-0/0/0:1:4
t1-0/0/0:1:5
```

VT-Mapped Configuration

```
[edit interfaces coc12-0/0/0]
partition 1 oc-slice 1 interface-type coc1;
```

```
[edit interfaces coc1-0/0/0:1]
partition 1-5 interface-type t1;
```

M13 or C-bit Parity-Mapped Configuration

```
[edit interfaces coc12-0/0/0]
partition 1 oc-slice 1 interface-type coc1;
```

```
[edit interfaces coc1-0/0/0:1]
no-partition interface-type ct3;
```

```
[edit interfaces ct3-0/0/0:1]
partition 1-5 interface-type t1;
```

For a full configuration example, see the *JUNOS Feature Guide*.

Configuring NxDS0 Interfaces

To configure NxDS0 interfaces on a Channelized OC12 IQE PIC, perform the following tasks:

1. Partition the channelized OC12 IQE interface into channelized OC1 interfaces by including the **partition**, **oc-slice**, and **interface-type** statements at the `[edit interfaces coc12-fpc/pic/port]` hierarchy level, specifying the **coc1** interface type:

```
[edit interfaces coc12-fpc/pic/port]
partition partition-number oc-slice oc-slice-range interface-type coc1;
```

2. If your network equipment uses VT mapping, partition the channelized OC1 interface into channelized T1 interfaces by including the **partition** and **interface-type** statements at the `[edit interfaces coc1-fpc/pic/port]` hierarchy level, specifying the **ct1** interface type:

```
[edit interfaces coc1-fpc/pic/port]
partition partition-number interface-type ct1;
```



NOTE: Class-of-service (CoS) rules cannot be applied to an individual channel configured on channelized IQ interfaces. You can only apply CoS rules to the aggregate bit streams.

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3. If your network equipment uses M13 or C-bit parity, convert the channelized OC1 interface into a channelized T3 interface by including the **no-partition** and **interface-type** statements at the `[edit interfaces coc1-fpc/pic/port]` hierarchy level, specifying the **ct3** interface type:

```
[edit interfaces coc1-fpc/pic/port]
[Unresolved xref] partition-number interface-type ct3;
```



NOTE: Because the **no-partition** statement is included, this configuration task does not create another level of channelization, as denoted by the number of colons in the resulting interface.

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4. Partition the channelized T3 interface into channelized T1 interfaces by including the **partition** and **interface-type** statements at the `[edit interfaces ct3-fpc/pic/port]` hierarchy level, specifying the **ct1** interface type:

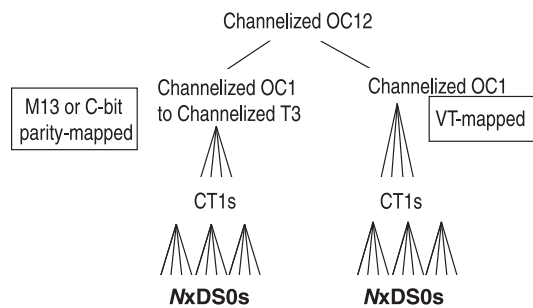
```
[edit interfaces ct3-fpc/pic/port]
partition partition-number interface-type ct1;
```

- Configure channelized *NxDS0* IQ interfaces on the channelized T1 IQ interface by including the **partition**, **timeslots**, and **interface-type** statements at the [edit interfaces *ct1-fpc/pic/port*] hierarchy level, specifying the **ds** interface type:

```
[edit interfaces ct1-fpc/pic/port:channel:channel]
partition partition-number timeslots time-slot-range interface-type ds;
```

Figure 2 shows VT-mapped and M13 or C-bit parity-mapped configurations of *NxDS0* IQ interfaces.

Figure 2: Sample Channelization of OC12 IQE PIC



Bold entries correspond to actual packet channels.

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Example: Configuring *NxDS0* Interfaces

Configure the following two *NxDS0* interfaces with 10 time slots and 4 time slots, respectively:

VT-Mapped Configuration

```
ds-0/0/0:1:2:1
ds-0/0/0:1:2:2

[edit interfaces coc12-0/0/0]
partition 1 oc-slice 1 interface-type coc1;

[edit interfaces coc1-0/0/0:1]
partition 2 interface-type ct1;

[edit interfaces ct1-0/0/0:1:2]
partition 1 timeslots 1-10 interface-type ds;
partition 2 timeslots 12-16 interface-type ds;
```

M13 or C-bit Parity-Mapped Configuration

```
[edit interfaces coc12-0/0/0]
partition 1 oc-slice 1 interface-type coc1;

[edit interfaces coc1-0/0/0:1]
no-partition interface-type ct3;

[edit interfaces ct3-0/0/0:1]
```

```
partition 2 interface-type ct1;

[edit interfaces ct1-0/0/0:1:2]
partition 1 timeslots 1-10 interface-type ds;
partition 2 timeslots 12-16 interface-type ds;
```

For a full configuration example, see the *JUNOS Feature Guide*.

Configuring Fractional T1 Interfaces

By default, all the time slots on a channelized T1 interface are used. To configure a fractional T1 interface on a Channelized OC12 IQE PIC, perform the following tasks:

1. Configure a T1 interface. For more information, see [\[Unresolved xref\]](#).
2. Configure the number of time slots allocated to the T1 interface by including the `timeslots` statement at the `[edit interfaces t1-fpc/pic/port<:channel> t1-options]` hierarchy level:

```
[edit interfaces t1-fpc/pic/port<:channel> t1-options]
timeslots time-slot-range;
```

For channelized T1 interfaces, the time-slot range is from 1 through 24. You can designate any combination of time slots. To configure ranges, use hyphens. To configure discontinuous time slots, use commas. Do not include spaces. For more information, see *Configuring Fractional T1 Time Slots*.

Example: Configuring Fractional T1 Interfaces

Configure a fractional T1 interface that uses time slots 1 through 5 and 10:

```
[edit interfaces coc12-0/0/0]
partition 1 oc-slice 1 interface-type coc1;
[edit interfaces coc1-0/0/0:1]
partition 1 interface-type t1;
[edit interfaces t1-0/0/0:1:1 t1-options]
timeslots 1-5,10;
```

For a full configuration example, see the *JUNOS Feature Guide*.

