

Chapter 24

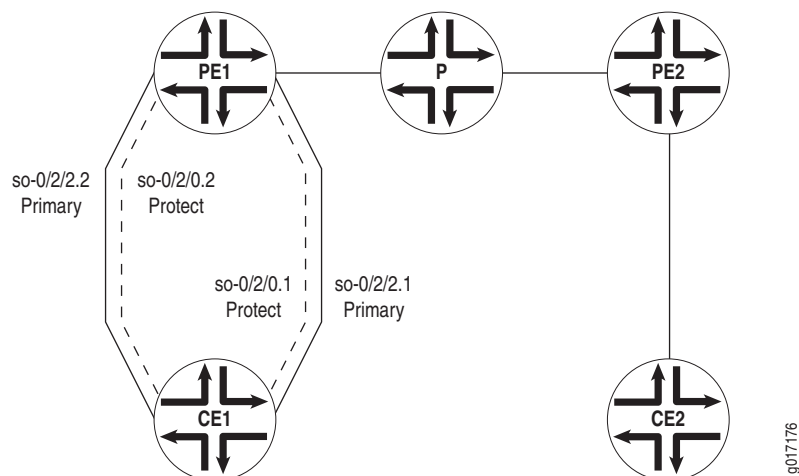
Layer 2 Circuits Example

The example presented in this chapter illustrates how you might configure a Layer 2 circuit with protect interfaces. Protect interfaces act as backups for their associated interfaces. The primary interface has priority over the protect interface and carries network traffic as long as it is functional. If the primary interface fails, the protect interface is activated. These interfaces can also share the same virtual path identifier (VPI) or virtual circuit identifier (VCI).

For more examples on how to configure Layer 2 circuits, see the *JUNOS Feature Guide*.

Figure 53 shows the network topology used in this example.

Figure 53: Layer 2 Circuits Using Protect Interfaces



The following sections describe how to configure a Layer 2 circuit to use a protect interface:

- Configuring Router PE1 on page 534
- Configuring Router PE2 on page 536
- Configuring Router CE1 on page 538
- Configuring Router CE2 on page 539

Configuring Router PE1

Configure an interface for traffic to Router CE1 from Router PE1 at the [edit interfaces] hierarchy level:

```
[edit interfaces]
so-0/2/2 {
  description "Router CE1 so-0/2/2";
  no-keepalives;
  encapsulation frame-relay-ccc;
  unit 1 {
    encapsulation frame-relay-ccc;
    point-to-point;
    dlcI 600;
  }
  unit 2 {
    encapsulation frame-relay-ccc;
    point-to-point;
    dlcI 602;
  }
}
```

Configure an interface for traffic to Router CE1 from Router PE1 at the [edit interfaces] hierarchy level. Logical interface `so-0/2/0.2` acts as the protect interface for `so-0/2/2.2`, and logical interface `so-0/2/0.1` acts as the protect interface for `so-0/2/2.1`:

```
[edit interfaces]
so-0/2/0 {
  description "to Router CE1 so-0/3/0";
  no-keepalives;
  encapsulation frame-relay-ccc;
  unit 1 {
    encapsulation frame-relay-ccc;
    dlcI 600;
  }
  unit 2 {
    encapsulation frame-relay-ccc;
    dlcI 602;
  }
}
```

Configure an interface for traffic to Router PE2 from Router PE1 at the [edit interfaces] hierarchy level:

```
[edit interfaces]
so-0/2/1 {
  description "to Router PE2 so-1/0/1";
  unit 0 {
    family inet {
      address 100.100.40.22/32 {
        destination 100.100.40.23;
      }
    }
    family iso;
    family mpls;
  }
}
```

Configure an interface for traffic to Router PE2 from Router PE1 at the [edit interfaces] hierarchy level:

```
[edit interfaces]
so-0/2/3 {
  description "Router PE2 so-1/0/3";
  unit 0 {
    family inet;
    family iso;
    family mpls;
  }
  lo0 {
    unit 0 {
      family inet {
        address 127.0.0.1/32;
        address 10.100.40.200/32;
      }
      family iso {
        address 47.0005.80ff.f800.0000.0108.0001.1921.6800.4213.00;
      }
    }
  }
}
```

Configure the Layer 2 circuit by including the `l2circuit` statement at the `[edit protocols]` hierarchy level. The logical interfaces for the Layer 2 circuits and their corresponding protect interfaces are included here:

```
[edit protocols]
l2circuit {
  neighbor 10.100.40.210 {
    interface so-0/2/2.2 {
      protect-interface so-0/2/0.2;
      virtual-circuit-id 2;
      no-control-word;
    }
    interface so-0/2/2.1 {
      protect-interface so-0/2/0.1;
      virtual-circuit-id 1;
      no-control-word;
    }
  }
}
```

Configuring Router PE2

Configure an interface for traffic to Router CE2 from Router PE2:

```
[edit interfaces]
so-1/0/0 {
  description "to Router CE2 so-0/2/0";
  no-keepalives;
  encapsulation frame-relay-ccc;
  unit 1 {
    encapsulation frame-relay-ccc;
    point-to-point;
    dlsi 700;
  }
  unit 2 {
    encapsulation frame-relay-ccc;
    point-to-point;
    dlsi 702;
  }
}
```

Configure an interface for traffic to Router PE1 from Router PE2:

```
[edit interfaces]
so-1/0/1 {
  description "to Router PE1 so-0/2/1";
  unit 0 {
    family inet {
      address 100.100.40.23/32 {
        destination 100.100.40.22;
      }
    }
  }
  family iso;
  family mpls;
}
```

Configure an interface for traffic to Router PE1 from Router PE2:

```
[edit interfaces]
so-1/0/3 {
  description "to Router PE1 so-0/2/3";
  unit 0 {
    family inet;
    family iso;
    family mpls;
  }
}
lo0 {
  unit 0 {
    family inet {
      address 127.0.0.1/32;
      address 10.100.40.210/32;
    }
    family iso {
      address 47.0005.80ff.f800.0000.0108.0001.1921.6800.4216.00;
    }
  }
}
```

Configure the Layer 2 circuit at the [edit protocols] hierarchy level:

```
[edit protocols]
l2circuit {
  neighbor 10.100.40.200 {
    interface so-1/0/0.1 {
      virtual-circuit-id 1;
      no-control-word;
    }
    interface so-1/0/0.2 {
      virtual-circuit-id 2;
      no-control-word;
    }
  }
}
```

Configuring Router CE1

Configure an interface for traffic to Router PE1 from Router CE1:

```
[edit interfaces]
so-0/3/0 {
  description "to Router PE1 so-0/2/0";
  no-keepalives;
  encapsulation frame-relay;
  unit 1 {
    dlci 601;
    family inet {
      address 12.12.12.1/24;
    }
  }
}
```

Configure an interface for traffic to Router PE1 from Router CE1:

```
[edit interfaces]
so-0/3/1 {
  description "Router PE1 so-0/2/2";
  no-keepalives;
  encapsulation frame-relay;
  unit 0 {
    dlci 600;
    family inet {
      address 10.10.10.1/24;
      address 11.1.1.1/24;
    }
    family iso;
    family mpls;
  }
  unit 2 {
    dlci 602;
    family inet {
      address 13.13.13.1/24;
    }
  }
}
```

Configuring Router CE2

Configure an interface for traffic to Router PE2 from Router CE2:

```
[edit interfaces]
so-0/2/0 {
  description "to Router PE2 so-1/0/0";
  no-keepalives;
  encapsulation frame-relay;
  unit 1 {
    dlsi 700;
    family inet {
      address 10.10.10.2/24;
      address 11.1.1.2/24;
      address 12.12.12.2/24;
    }
  }
  unit 2 {
    dlsi 702;
    family inet {
      address 13.13.13.2/24;
    }
  }
}
```

