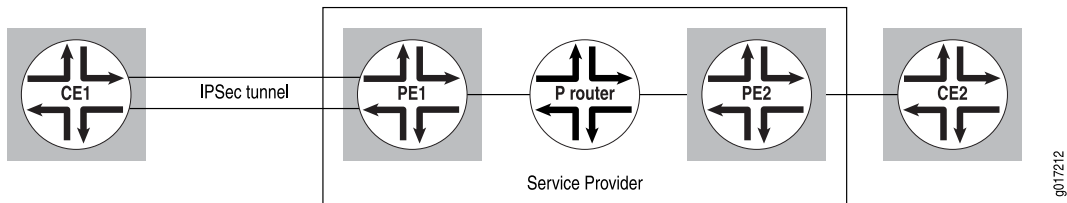


Configuring an ES Tunnel Interface Between a PE and CE Router

This example shows how to configure an ES tunnel interface between a PE router and a CE router in a Layer 3 VPN. The network topology used in this example is shown in Figure 1.

Figure 1: ES Tunnel Interface (IPsec Tunnel)



To configure this example, you perform the steps in the following sections:

- Configuring IPsec on Router PE1 on page 1
- Configuring the Routing Instance Without the Encapsulating Interface on page 2
- Configuring the Routing Instance with the Encapsulating Interface on page 3
- Configuring the ES Tunnel Interface on Router CE1 on page 4
- Configuring IPsec on Router CE1 on page 4

Configuring IPsec on Router PE1

Configure IP Security (IPsec) on Router PE1:

```
[edit security]
ipsec {
  security-association sa-esp-manual {
    mode tunnel;
    manual {
      direction bidirectional {
        protocol esp;
        spi 16000;
        authentication {
          algorithm hmac-md5-96;
          key ascii-text
            "$9$ABULt1heK87dsWLDk.P3nrevM7V24ZHkPaZ/tpOcSvWLNwgZUH";
        }
        encryption {
          algorithm des-cbc;
          key ascii-text "$9$/H8Q90lyrvL7VKMZjHqQzcycleLN";
        }
      }
    }
  }
}
```

Configuring the Routing Instance Without the Encapsulating Interface

You can configure the routing instance on Router PE1 with or without the encapsulating interface (t3-0/1/3 in this example). The following sections explain how to configure the routing instance without it:

- Configuring the Routing Instance on Router PE1 on page 2
- Configuring the ES Tunnel Interface on Router PE1 on page 2
- Configuring the Encapsulating Interface for the ES Tunnel on page 3

Configuring the Routing Instance on Router PE1

Configure the routing instance on Router PE1:

```
[edit routing-instances]
vpna {
  instance-type vrf;
  interface es-1/2/0.0;
  route-distinguisher 10.255.14.174:1;
  vrf-import vpna-import;
  vrf-export vpna-export;
  protocols {
    bgp {
      group vpna {
        type external;
        peer-as 100;
        as-override;
        neighbor 10.49.2.1;
      }
    }
  }
}
```

Configuring the ES Tunnel Interface on Router PE1

Configure the ES tunnel interface on Router PE1:

```
[edit interfaces es-1/2/0]
unit 0 {
  tunnel {
    source 192.168.197.249;
    destination 192.168.197.250;
  }
  family inet {
    address 10.49.2.2/30;
    ipsec-sa sa-esp-manual;
  }
}
```

Configuring the Encapsulating Interface for the ES Tunnel

For this example, interface t3-0/1/3 is the encapsulating interface for the ES tunnel. Configure interface t3-0/1/3:

```
[edit interfaces t3-0/1/3]
unit 0 {
  family inet {
    address 192.168.197.249/30;
  }
}
```

Configuring the Routing Instance with the Encapsulating Interface

If the tunnel-encapsulating interface, t3-0/1/3, is also configured under the routing instance, you need to specify the routing instance name under the interface definition. The system uses this routing instance to search for the tunnel destination address for the IPsec tunnel using manual security association.

The following sections explain how to configure the routing instance with the encapsulating interface:

- Configuring the Routing Instance on Router PE1 on page 3
- Configuring the ES Tunnel Interface on Router PE1 on page 4
- Configuring the Encapsulating Interface on Router PE1 on page 4

Configuring the Routing Instance on Router PE1

Configure the routing instance on Router PE1 (including the tunnel encapsulating interface):

```
[edit routing-instances]
vpna {
  instance-type vrf;
  interface es-1/2/0.0;
  interface t3-0/1/3.0;
  route-distinguisher 10.255.14.174:1;
  vrf-import vpna-import;
  vrf-export vpna-export;
  protocols {
    bgp {
      group vpna {
        type external;
        peer-as 100;
        as-override;
        neighbor 10.49.2.1;
      }
    }
  }
}
```

Configuring the ES Tunnel Interface on Router PE1

Configure the ES tunnel interface on Router PE1:

```
[edit interfaces es-1/2/0]
unit 0 {
  tunnel {
    source 192.168.197.249;
    destination 192.168.197.250;
    routing-instance {
      destination vpna;
    }
  }
  family inet {
    address 10.49.2.2/30;
    ipsec-sa sa-esp-manual;
  }
}
```

Configuring the Encapsulating Interface on Router PE1

Configure the encapsulating interface on Router PE1:

```
[edit interfaces t3-0/1/3]
unit 0 {
  family inet {
    address 192.168.197.249/30;
  }
}
```

Configuring the ES Tunnel Interface on Router CE1

Configure the ES tunnel interface on Router CE1:

```
[edit interfaces es-1/2/0]
unit 0 {
  tunnel {
    source 192.168.197.250;
    destination 192.168.197.249;
  }
  family inet {
    address 10.49.2.1/30;
    ipsec-sa sa-esp-manual;
  }
}
```

Configuring IPsec on Router CE1

Configure IPsec on Router CE1:

```
[edit security]
ipsec {
  security-association sa-esp-manual {
```

```
mode tunnel;
manual {
  direction bidirectional {
    protocol esp;
    spi 16000;
    authentication {
      algorithm hmac-md5-96;
      key ascii-text
        "$9$ABULT1heK87dsWLDk.P3nrevM7V24ZHkPaZ/tpOcSvWLNwgZUH";
    }
    encryption {
      algorithm des-cbc;
      key ascii-text "$9$/H8Q90lyrvL7VKMZjHqQzcyleLN";
    }
  }
}
}
```

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