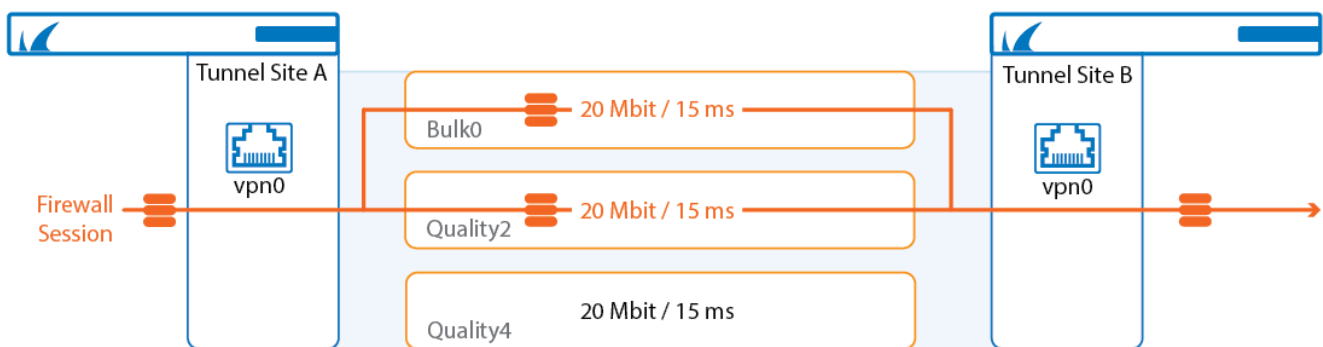


How to Configure Traffic Duplication for VPN Tunnels with Traffic Intelligence

<https://campus.barracuda.com/doc/73719196/>

Traffic Duplication copies packets and sends them over the primary and secondary transport simultaneously to ensure that traffic continues uninterrupted even if one VPN transport goes down. At the other VPN endpoint, the packet stream is reassembled. Traffic Duplication should be used only for critical, real-time traffic using two transports with the same latency and bandwidth.



Limitations

- Not available for transports using IPv6 VPN envelopes
- Latency and bandwidth must be identical for both transports.

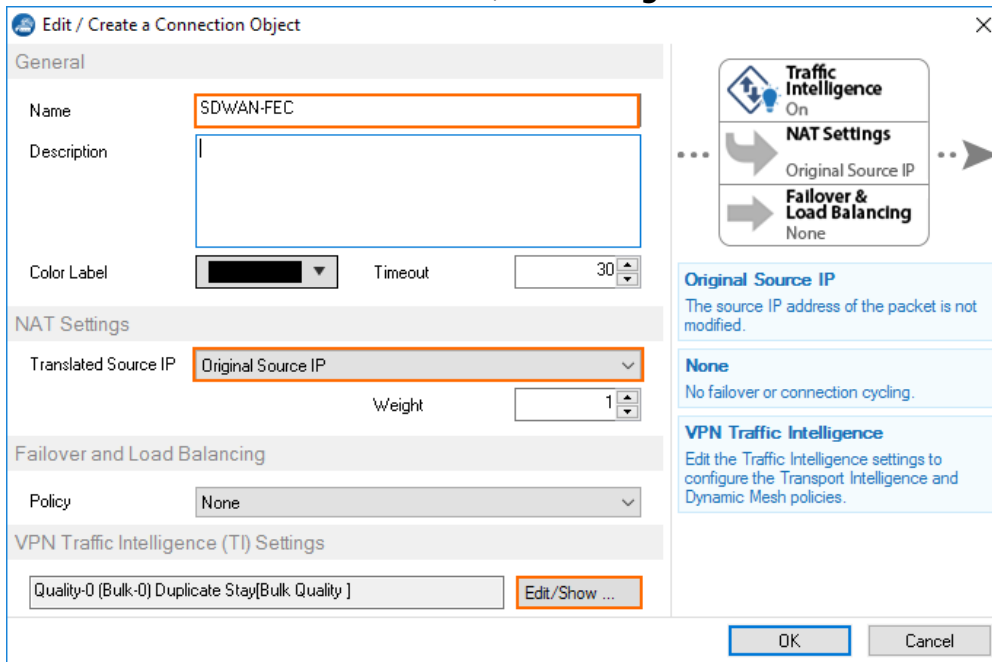
Before You Begin

Create a multi-transport VPN tunnel between two CloudGen Firewalls:

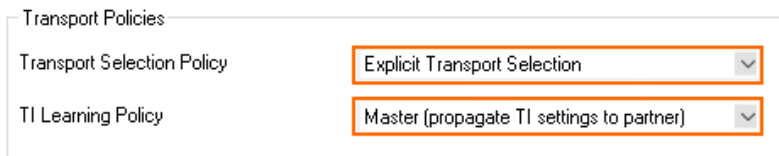
- Create a TINA site-to-site VPN tunnel. For more information, see [How to Create a TINA VPN Tunnel between CloudGen Firewalls](#) or [How to Create a VPN Tunnel with the VPN GTI Editor](#).
- Add one or more additional transports to the VPN tunnel. For more information, see [How to Add a VPN Transport to a TINA VPN Tunnel](#) or [How to Configure Traffic Intelligence Using the VPN GTI Editor](#).

Step 1. Create a Custom Connection Object for the TI Master

1. Go to **CONFIGURATION > Configuration Tree > Box > Virtual Servers > your virtual server > Assigned Services > Firewall > Forwarding Rules.**
2. In the left menu, click **Connections.**
3. Right-click the table and select **New Connection.** The **Edit/Create a Connection Object** window opens.
4. Enter the **Name.**
5. From the **Translated Source IP** list, select **Original Source IP.**



6. To edit the **VPN Traffic Intelligence** settings, click **Edit/Show.** The **TI Transport Selection** window opens.
7. Configure the **Transport Policies:**
 - o **Transport Selection Policy** – Select **Explicit Transport Selection.**
 - o **TI Learning Policy** – Select **Master.**



8. Configure the **Explicit Transport Selection:**
 - o **Primary Transport Class** – Select the primary transport.
 - o **Primary Transport ID** – Select the ID for the primary transport.
 - o **Secondary Transport Class** – Select the secondary transport.
 - o **Secondary Transport ID** – Select the ID for the secondary transport.
9. From the **Traffic Duplication (FEC)** list, select **Yes.**

Explicit Transport Selection

Primary Transport Class: Quality

Primary Transport ID: 0

Secondary Transport Class: Bulk

Secondary Transport ID: 0

Further Transport Selection: First try Cheaper then try Expensive

Allow Bulk Transports Allow Quality Transports Allow Fallback Transports

Simultaneous Transport Usage

Session Balancing: None

Traffic Duplication: Yes

10. Click **OK**.
11. Click **Send Changes** and **Activate**.

Step 3. Create a Custom Connection Object for the TI Slave

1. Go to **CONFIGURATION > Configuration Tree > Box > Virtual Servers > your virtual server > Assigned Services > Firewall > Forwarding Rules**.
2. In the left menu, click **Connections**.
3. Right-click the table and select **New Connection**. The **Edit/Create a Connection Object** window opens.
4. Enter the **Name**.
5. From the **Translated Source IP** list, select **Original Source IP**.

6. To edit the **VPN Traffic Intelligence** settings, click **Edit/Show**. The **TI Transport Selection**

window opens.

- From the **TI Learning Policy** drop-down list, select **Slave**.

Transport Policies

| | |
|----------------------------|--|
| Transport Selection Policy | Explicit Transport Selection |
| TI Learning Policy | Slave (learn TI settings from partner) |

Explicit Transport Selection

| | |
|-----------------------------|--------------------------------------|
| Primary Transport Class | Quality |
| Primary Transport ID | 0 |
| Secondary Transport Class | Bulk |
| Secondary Transport ID | 0 |
| Further Transport Selection | First try Cheaper then try Expensive |

Allow Bulk Transports
 Allow Quality Transports
 Allow Fallback Transports

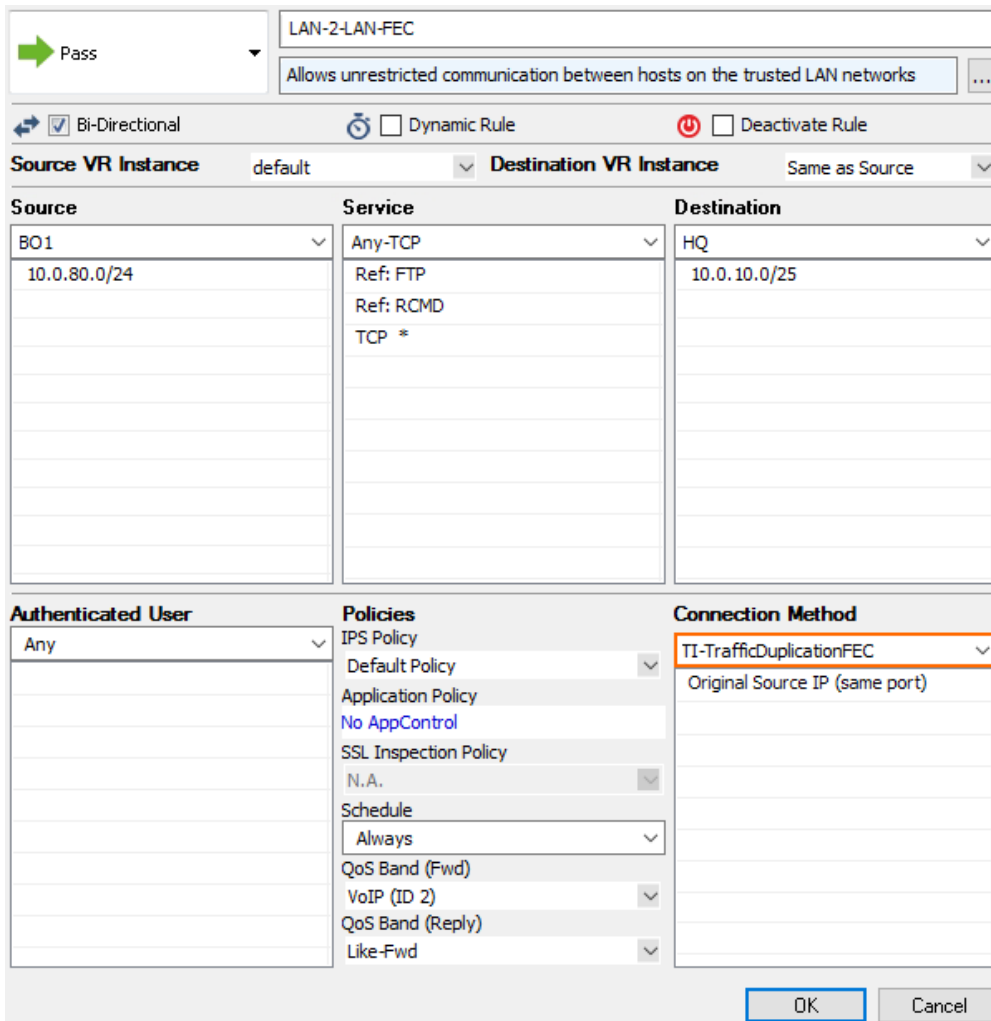
Simultaneous Transport Usage

| | |
|---------------------|------|
| Session Balancing | None |
| Traffic Duplication | Yes |

- Click **OK**.
- Click **Send Changes** and **Activate**.

Step 4. Modify Access Rule on the Firewall Acting as TI Master

- Go to **CONFIGURATION > Configuration Tree > Box > Virtual Servers > your virtual server > Assigned Services > Firewall > Forwarding Rules**.
- Click **Lock**.
- Right-click the ruleset and select **New > Rule** to create an access rule to match the VPN traffic you want to balance:
 - Action** – Select **Pass**.
 - Bi-Directional** – Select the check box to apply the rule in both directions.
 - Source** – Select a network object for all local networks.
 - Service** – Select a service object from the list.
 - Destination** – Select the network object containing the remote networks.
 - Connection Method** – Select the connection object for the TI master created in step 2.



Pass

LAN-2-LAN-FEC

Allows unrestricted communication between hosts on the trusted LAN networks

Bi-Directional Dynamic Rule Deactivate Rule

Source VR Instance: default Destination VR Instance: Same as Source

| Source | Service | Destination |
|--------------|--------------------------------|--------------|
| BO1 | Any-TCP | HQ |
| 10.0.80.0/24 | Ref: FTP Ref: RCMD TCP * | 10.0.10.0/25 |

| Authenticated User | Policies | Connection Method |
|--------------------|---|--|
| Any | IPS Policy Default Policy Application Policy No AppControl SSL Inspection Policy N.A. Schedule Always QoS Band (Fwd) VoIP (ID 2) QoS Band (Reply) Like-Fwd | TI-TrafficDuplicationFEC Original Source IP (same port) |

OK Cancel

4. Click **OK**.
5. Click **Send Changes** and **Activate**.

Step 5. Modify Access Rule on the Firewall Acting as TI Slave

1. Go to **CONFIGURATION > Configuration Tree > Box > Virtual Servers > your virtual server > Assigned Services > Firewall > Forwarding Rules**.
2. Click **Lock**.
3. Right-click the ruleset and select **New > Rule** to create an access rule to match the VPN traffic you want to balance:
 - **Action** - Select **Pass**.
 - **Bi-Directional** - Select the check box to apply the rule in both directions.
 - **Source** - Select a network object for all local networks.
 - **Service** - Select a service object from the list.
 - **Destination** - Select the network object containing the remote networks.
 - **Connection Method** - Select the connection object for the TI slave created in step 3.

| | | |
|---|--|--|
| <div style="display: flex; align-items: center;"> ➔ Pass <div style="border: 1px solid #ccc; padding: 2px;">LAN-2-LAN-FEC</div> </div> | | |
| <div style="border: 1px solid #ccc; padding: 2px; background-color: #f0f0f0;">Allows unrestricted communication between hosts on the trusted LAN networks</div> | | |
| <div style="display: flex; justify-content: space-between; align-items: center;"> ↔ <input checked="" type="checkbox"/> Bi-Directional 🕒 <input type="checkbox"/> Dynamic Rule ⏻ <input type="checkbox"/> Deactivate Rule </div> | | |
| Source VR Instance default | | Destination VR Instance Same as Source |
| Source BO1 10.0.80.0/24 | Service Any-TCP Ref: FTP Ref: RCMD TCP * | Destination HQ 10.0.10.0/25 |
| Authenticated User Any | Policies IPS Policy Default Policy Application Policy No AppControl SSL Inspection Policy N.A. Schedule Always QoS Band (Fwd) VoIP (ID 2) QoS Band (Reply) Like-Fwd | Connection Method TI-Slave Original Source IP (same port) |
| <div style="display: flex; justify-content: flex-end; gap: 20px;"> OK Cancel </div> | | |

4. Click **OK**.
5. Click **Send Changes** and **Activate**.

Traffic matching these access rules is now duplicated on the primary and secondary transport. Failure of one of the transports is completely transparent and no packet is dropped. In the **VPN** tab, Traffic Duplication is not visualized. Traffic Duplication can be tested very easily by disabling one transport. If traffic fails over instantly with no packets dropped and with no delay, Traffic Duplication is working correctly.

Figures

1. ti_traffic_replication.png
2. sdwan_FEC_01.png
3. sdwan_FEC_01a.png
4. sdwan_FEC_01b.png
5. sdwan_FEC_01.png
6. sdwan_FEC_03.png
7. sdwan_FEC_04a.png
8. sdwan_FEC_04.png

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