

High Availability on SINGLEstream® Taps

Intro to Taps:

Network Taps are often used in network and security monitoring applications to create permanent access ports for passive monitoring. A Tap, or test access port, can be set up between any two network devices, such as firewalls, routers, and switches. Network appliances can simply plug into the access port created by the Tap and receive “in-line” data.

SINGLEstream® Taps:

A SINGLEstream® is a type of Active Tap that reroutes network traffic into its inner electronics, makes a copy, then sends the traffic on to its destination. The copy of the traffic then gets sent to the monitoring device(s). Unlike Passive taps, SINGLEstream® Taps come with additional features like being able to aggregate traffic from multiple links. One advantage that is gained from aggregation is the ability to install a SINGLEstream® on a pair of redundant links and monitor them both simultaneously.

High Availability:

When monitoring a pair of redundant links, it is important to be able to provide a seamless stream of traffic to the monitoring tool in the instance of a failover. The SINGLEstream® product line can provide this functionality by ensuring that all traffic transmitted on both primary and secondary links are successfully provided to the monitoring tool.

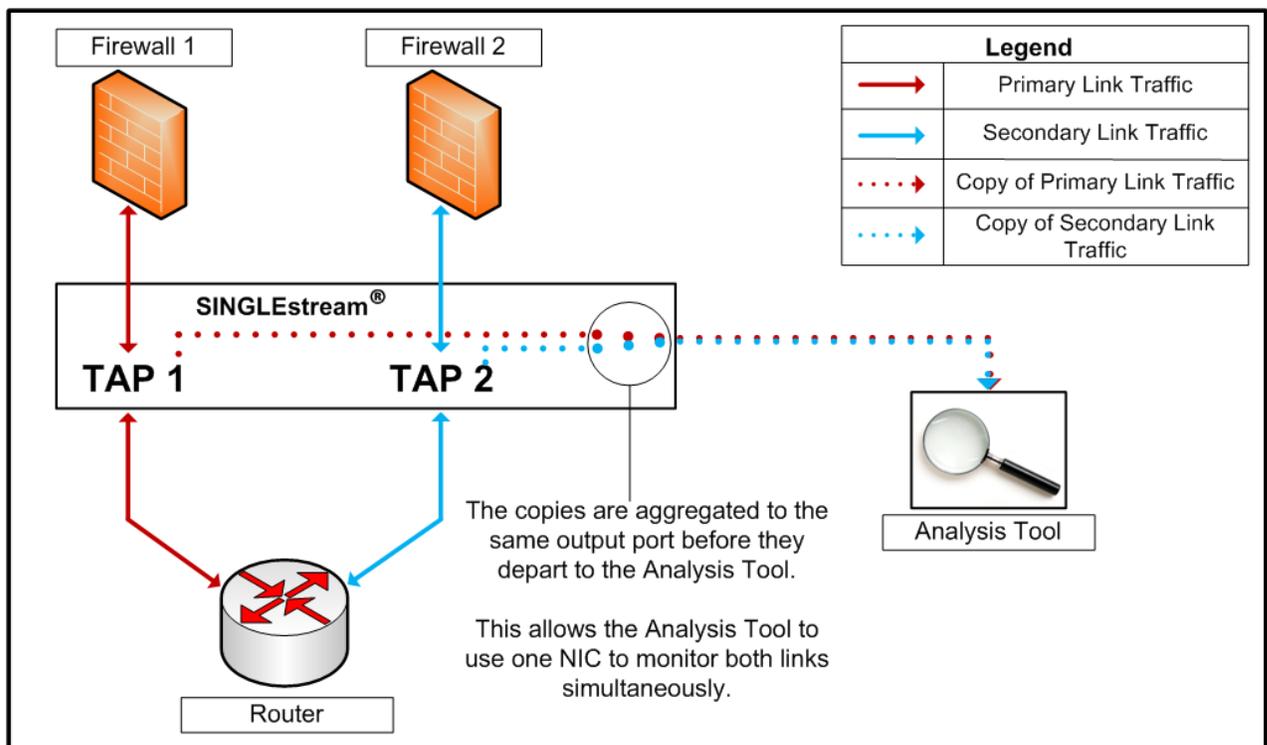


Figure 1 – High Availability Functionality Diagram

In addition to allowing the monitoring tools to access both streams of traffic, the SINGLEstream® also has the ability to aggregate all of the traffic between the redundant links out a single port. By doing this, the monitoring tool only needs to use a single NIC to receive traffic from both links.

In the event of a failover, the monitoring tool will receive the last packet that went over the primary link and the first packet that goes over the secondary link.

No Interference with HA:

SINGLEstream® taps do not obstruct HA measures from occurring on connected network endpoints. On models with fiber network ports, the connection between the SINGLEstream® and the network endpoints is entirely passive. This means that the network endpoints connected to the tap ports will directly negotiate with each other. To the network, the SINGLEstream® will function similarly to an extension of the fiber cable.

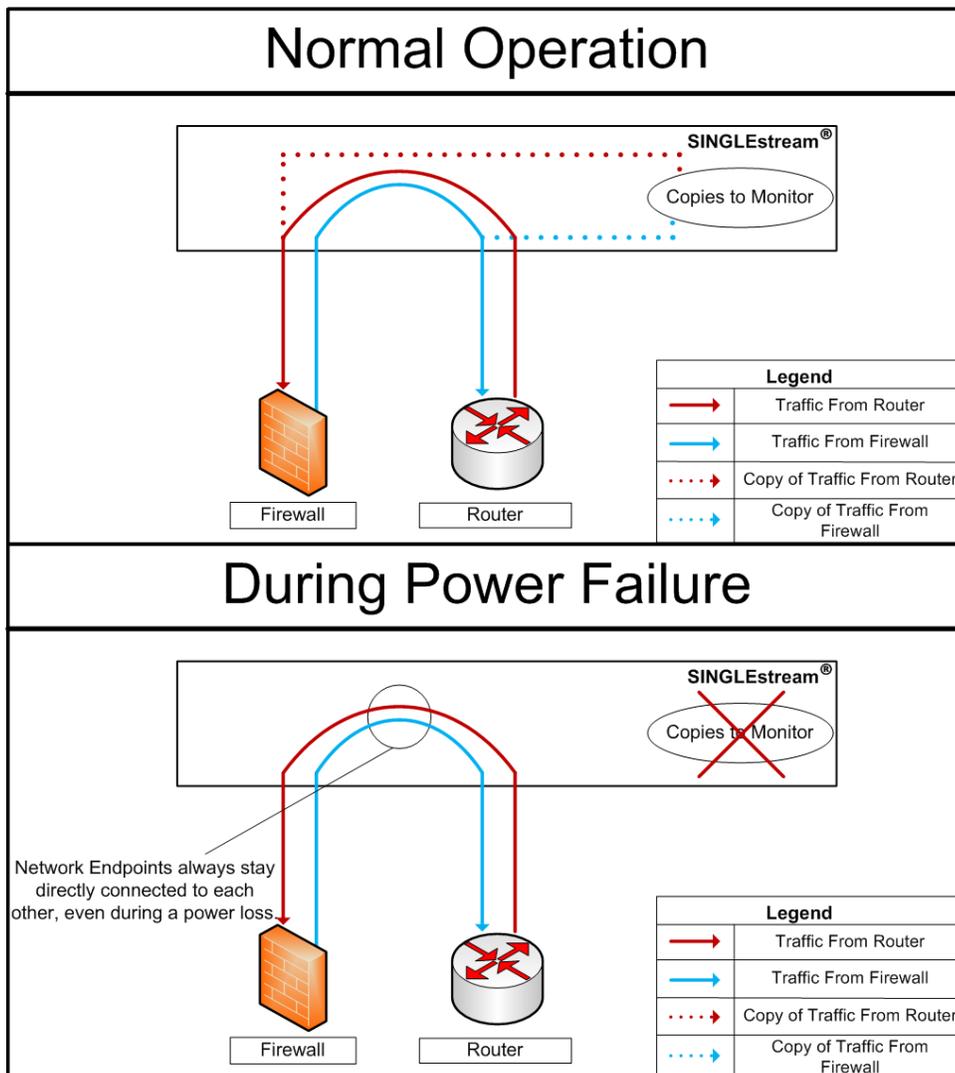


Figure 2 – Non-intrusive Tapping

LINKprotect®:

On SINGLEstream® model taps that are used to tap copper links, the LINKprotect® feature is used to allow HA systems on the network endpoint to take place. When LINKprotect® notices that one side of the tapped link goes down, it makes the SINGLEstream® temporarily passive by closing a relay. This allows a network endpoint configured with HA to notice the downed link and take action.

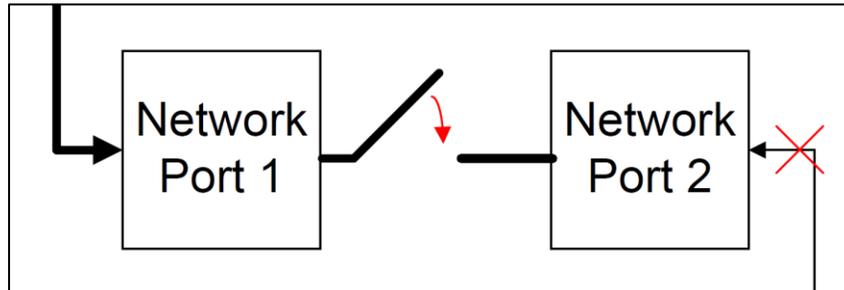


Figure 3 – Relays Closing

Benefits:

Using a SINGLEstream® to tap redundant links provides a few different benefits.

1. Since SINGLEstream® devices can tap multiple links; you only need to install a single tap. Up to 4 redundant links can be tapped on a single device.
2. The ability to aggregate traffic to a single port allows a single monitoring tool to be used. Without this feature, multiple monitoring tools or a dual-NIC monitoring tool would be required to monitor each link.
3. SINGLEstream® taps do not interfere with failover mechanisms on the network devices connected.
4. If one of the links or network endpoints needs to go down for maintenance, monitoring will continue on the redundant link.