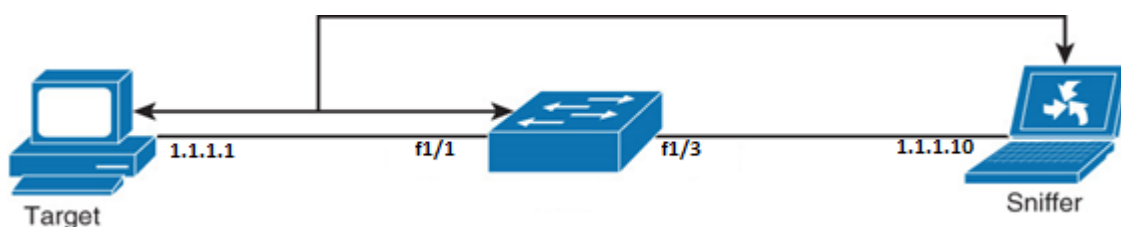


## SPAN (Switched Port Analyzer):

- o Cisco method called **Switched Port Analyzer** also known as SPAN.
- o SPAN is an efficient, high performance traffic monitoring system.
- o SPAN directs traffic from source port or VLAN to a destination port.
- o Switched Port Analyzer sometimes referred to as session monitoring.
- o Switched Port Analyzer is used for troubleshooting connectivity issues.
- o Its calculating network utilization & performance, among many others.
- o SPAN is used to monitor network traffic for troubleshooting problems.
- o SPAN is used to monitor network traffic for performing a security audit.
- o To monitor network traffic for checking network for suspicious traffic.
- o Analyze network traffic passing through ports or VLANs by using SPAN.
- o Redirect all traffic from a VLAN or port to an IDS or IPS or any Firewalls.
- o Redirect all the VoIP traffic calls from a VLAN so you can record the calls.
- o The source can be an interface or a VLAN, the destination is an interface.
- o Source interface can be anything switchport, routed port, access port, etc.
- o Layer 2, frames like CDP, VTP, DTP, and BPDUs are not copied by default.
- o The SPAN facility lets you connect a packet sniffer to a Cisco Switch.
- o SPAN system is able to monitor a single port or many ports or interface.
- o There are three main types of SPANs which supported on Cisco products.

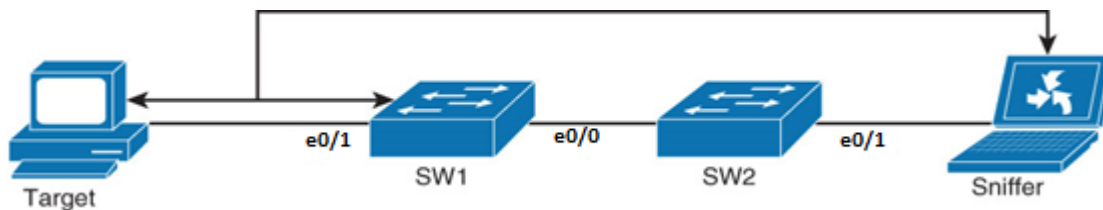
### Local SPAN:

- o Local Switched Port Analyzer supports SPAN session entirely within one Switch.
- o All source ports or source VLANs and destination ports are in the same Switch.
- o Local SPAN copies traffic from source ports to a destination port for analysis.
- o Copy all traffic from a source port or source VLAN to a destination interface.
- o When use destination interface on the same Switch, the Switch call SPAN.
- o Up to 64 SPAN destination ports can be configured on a Cisco Switches.
- o Port can act as destination port for only one Switched Port Analyzer session.
- o Both L2 switched ports & L3 ports can be configured source or destination ports.



## RSPAN:

- o RSPAN is term which is stands for **Remote Switched Port Analyzer**.
- o Source port can be a routed port, switchport, trunk or etherchannel.
- o When destination is a remote interface on another switch called RSPAN.
- o Supports source ports, source VLANs & destination ports on different switches.
- o Each session carries SPAN traffic over user-specified dedicated RSPAN VLAN.
- o Remote Switched Port Analyzer supports a SPAN session more than one Switch.
- o Remote Switched Port Analyzer need to use VLAN for Remote SPAN traffic.
- o RSPAN need to use a a dedicated VLAN that carries the traffic that are copying.
- o Remote Switched Port Analyzer enables to monitor traffic between Switches.
- o RSPAN allows traffic that is sourced from Switch to be mirrored to a remote Switch.



## ERSPAN:

- o ERSPAN is term stand for **Encapsulated Remote Switched Port Analyzer**.
- o Feature present on new IOS-XE on ASR1000 also available on Catalyst 6500.
- o ERSPAN brings generic routing encapsulation (GRE) for all captured traffic.
- o ERSPAN is used to send traffic for sniffing over L3 networks using GRE tunnel.
- o ERSPAN on Cisco ASR 1000 Series Routers supports only The Layer 3 interfaces.
- o Ethernet interfaces are not supported on ERSPAN configured as Layer 2 interfaces.

### For the Source session, need to Configure:

- o To configure ERSPAN it requires Unique session ID, List of source interfaces or VLANs.
- o What is the traffic we want to capture tx (Transmit Only), rx (Receive Only) or both.
- o ERSPAN configuration require Destination IP address for the GRE tunnel to connect.
- o Origin IP address which is used as source for generic routing encapsulation tunnel.
- o Unique Encapsulated Remote Switched Port Analyzer (ERSPAN) flow ID (Identity).

### For the Destination need to Specify:

- o For the Destination Unique session ID doesn't have to match with source session.
- o ERSPAN require Destination interface(s) where you want to forward the traffic to.
- o Source IP address has to match with the origin IP address of the source session.
- o ERSPAN require Unique ERSPAN flow ID, has to match with the source session.