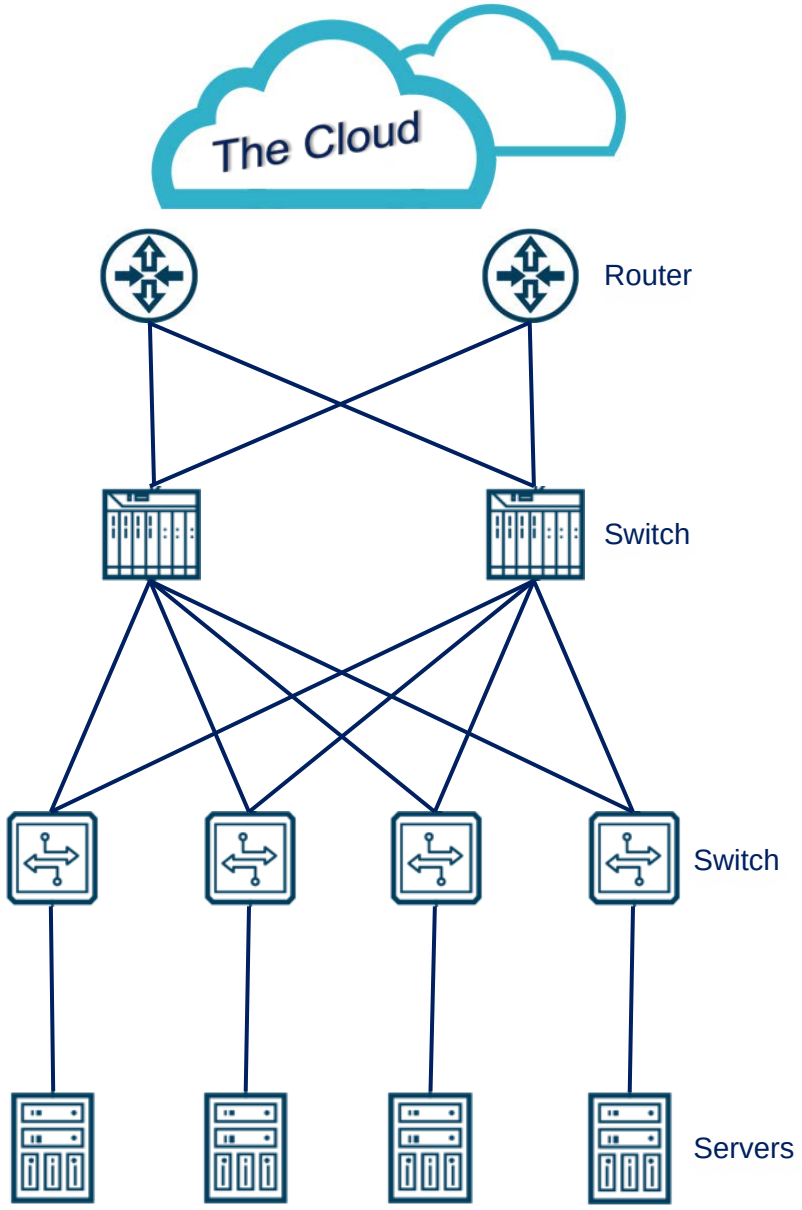
ARROW SOMMERFEST 2018

Christian Reuling, System Engineer

EXAMPLE NETWORK INFRASTRUCTURE



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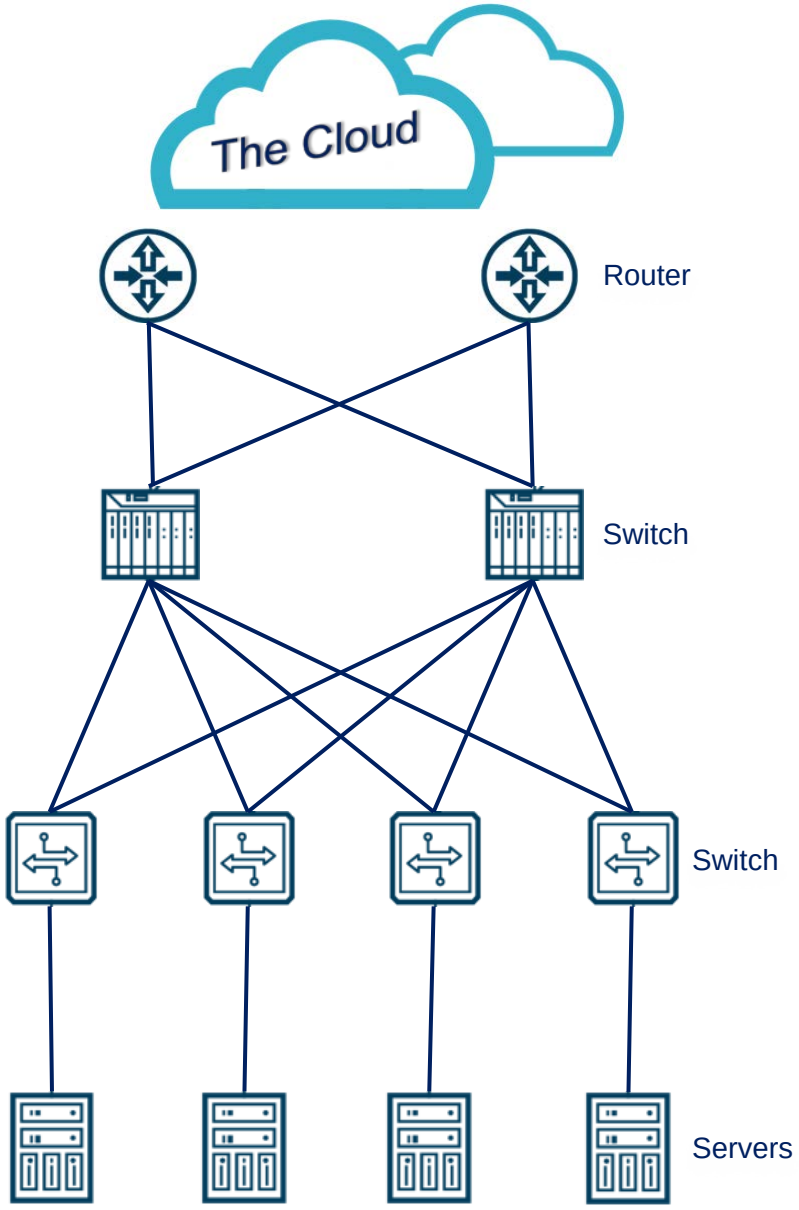
WHAT DO YOU WANT TO KNOW



How do they make sure that the millions of Dollars that has been spent are paying off in terms of:

- **Availability:**
  - meet SLAs
- **Security:**
  - Potential threats, data loss prevention, vulnerabilities
- **Compliance:**
  - Sarbanes-Oxley, HIPPA, PCI-DDS
- **Performance:**
  - End user experience, troubleshooting, root cause analysis
- **Trends:**
  - Capacity planning and scalability

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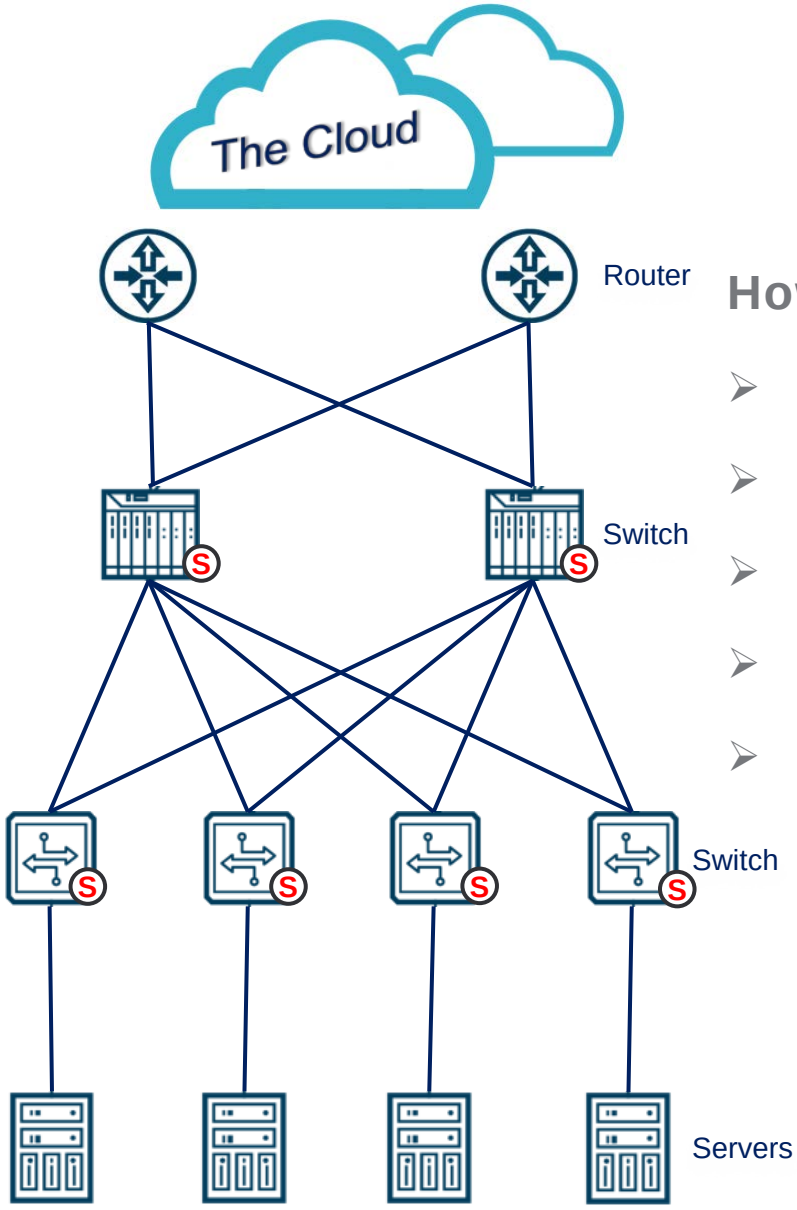
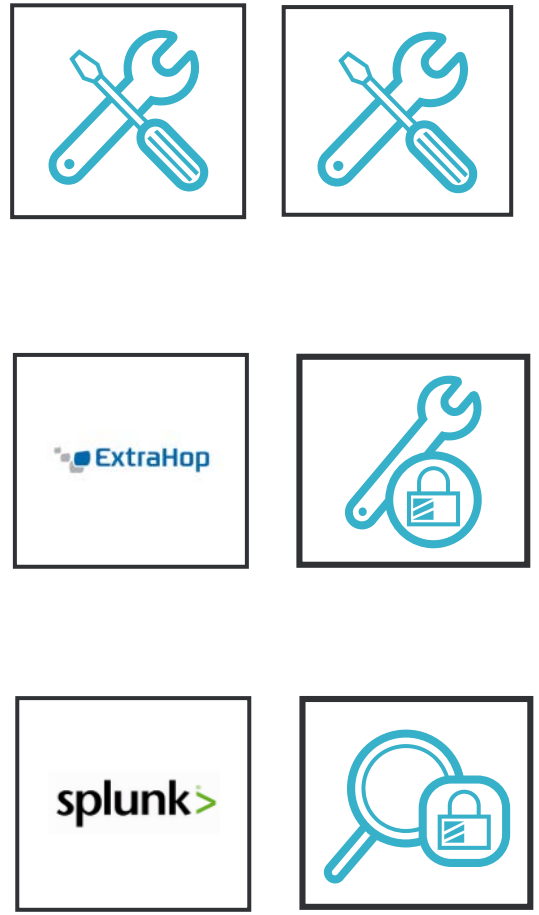
SOLVE PROBLEMS WHEN USING TOOLS



How to connect the tools to the network:

- Different tools are competing for the data
- Poor data quality with SPAN ports
- Different link speeds/standards in the network
- Possible too much data for the tool
- Tunneling protocols maybe in place (VxLan / VnTag)

Tools Farm



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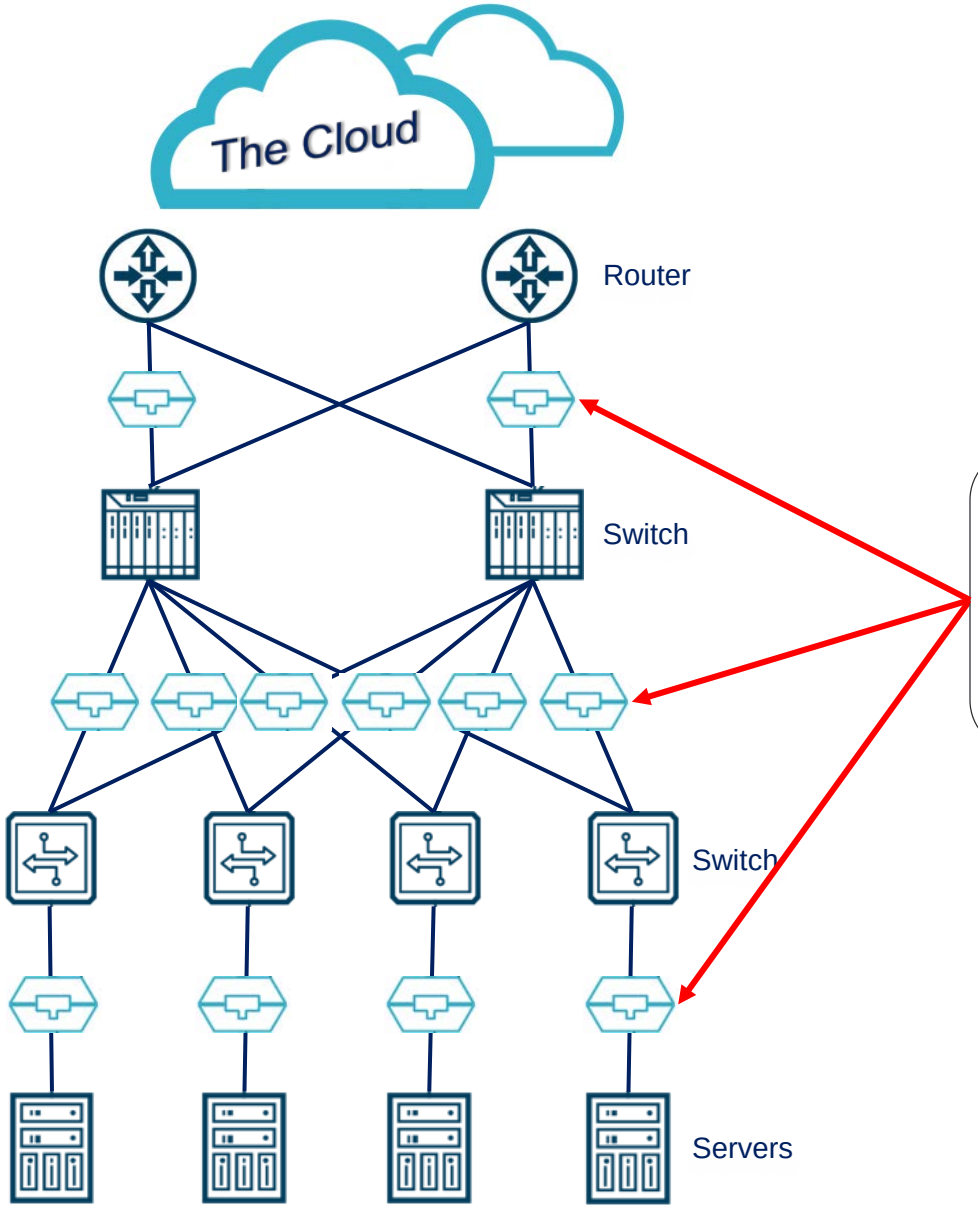
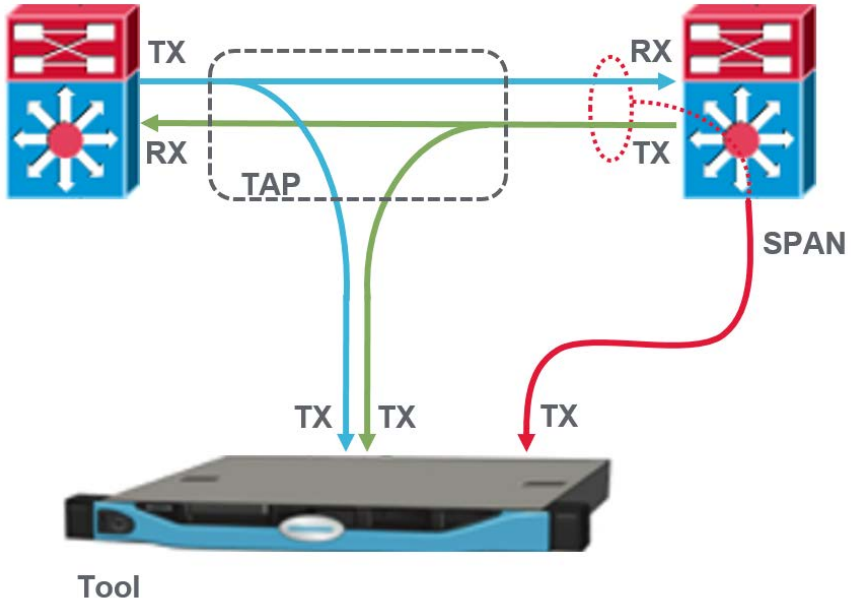
STEP 1: DEPLOY TAPS



Deploy Ixia TAPs within your network architecture providing you full visibility



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TAP VERSUS SPAN

TAP

- Full Duplex Taps
  (no packet loss due to aggregation)
- Simplest optical TAPs are safe as houses
  and grow with the Network from GE to 100GE
- Copper TAPs are fail safe even when the power is lost
- Available for all media types:
  Copper: 10M, 100M & 1G
  Optical: Single Mode 1G till 100G
  Multi Mode 1G till 100G
  Cisco Bidi

SPAN

- Limited number of SPANs leads to compromise
  (Multiple tools cannot be used at the same time)
- Have to be configured and maintained
  (Danger working on Production Network)
- Load depended behavior
  (tend to lose packets already at lower processor load)

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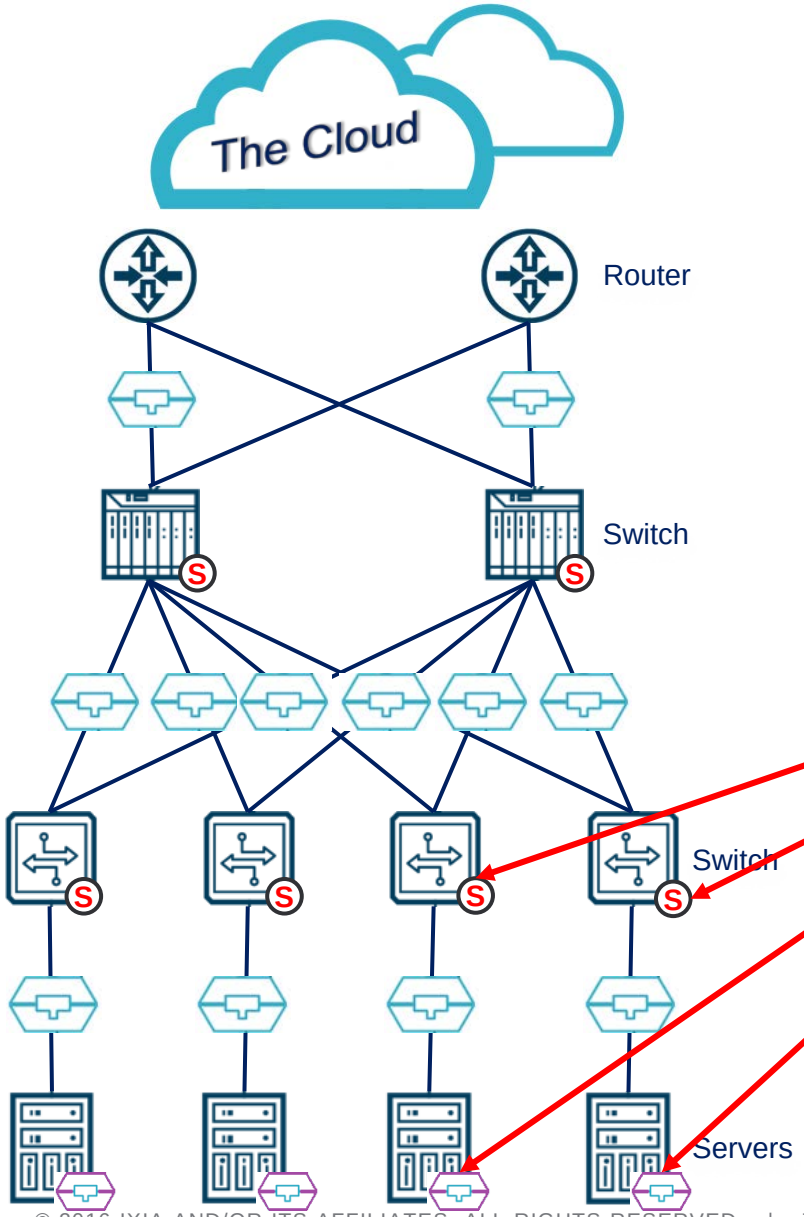
STEP 2: DEPLOY CLOUDLENS



Deploy Ixia CloudLens private solution as virtual Tap

Use SPAN ports as needed

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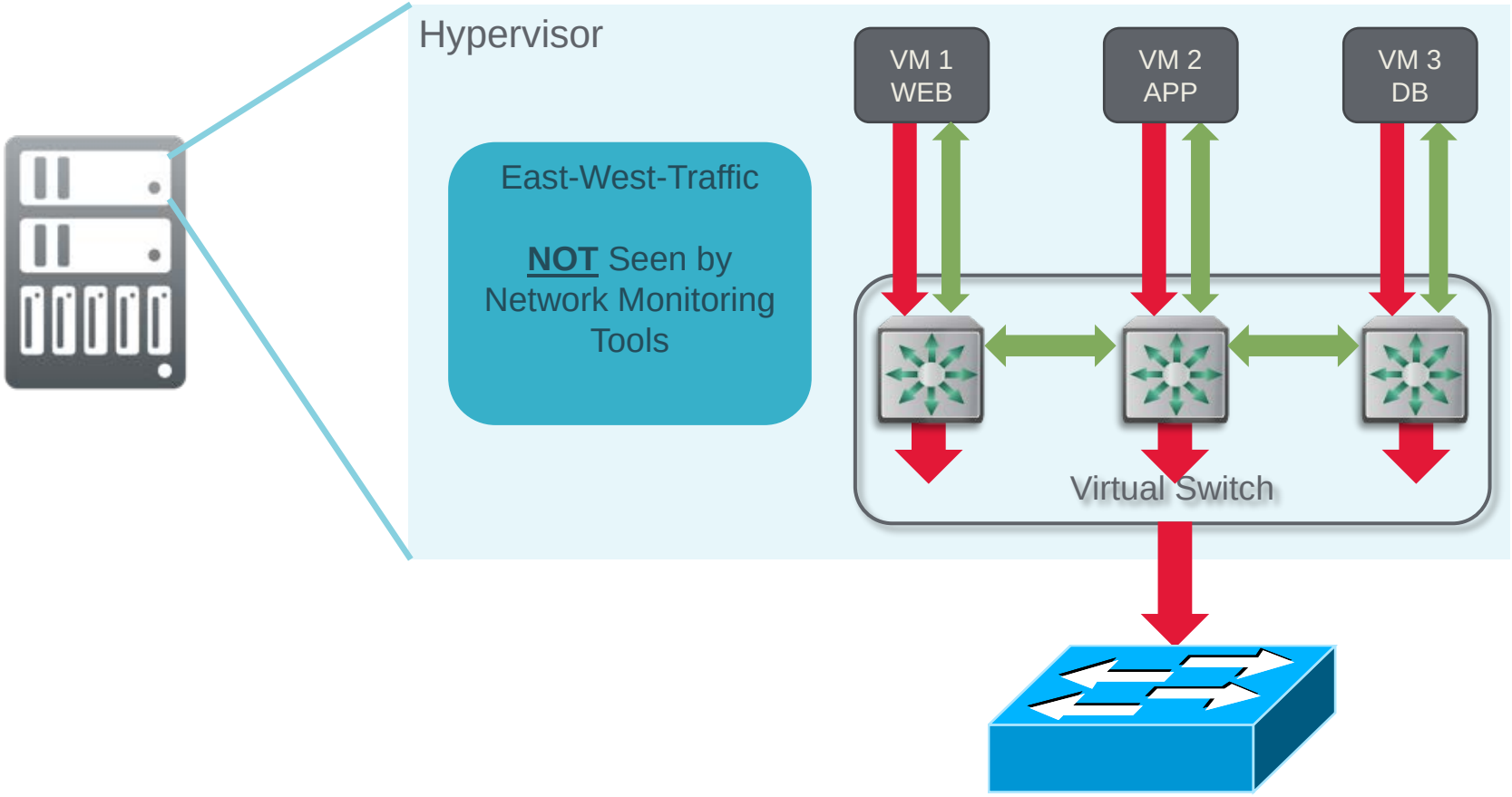
VIRTUAL NETWORKS



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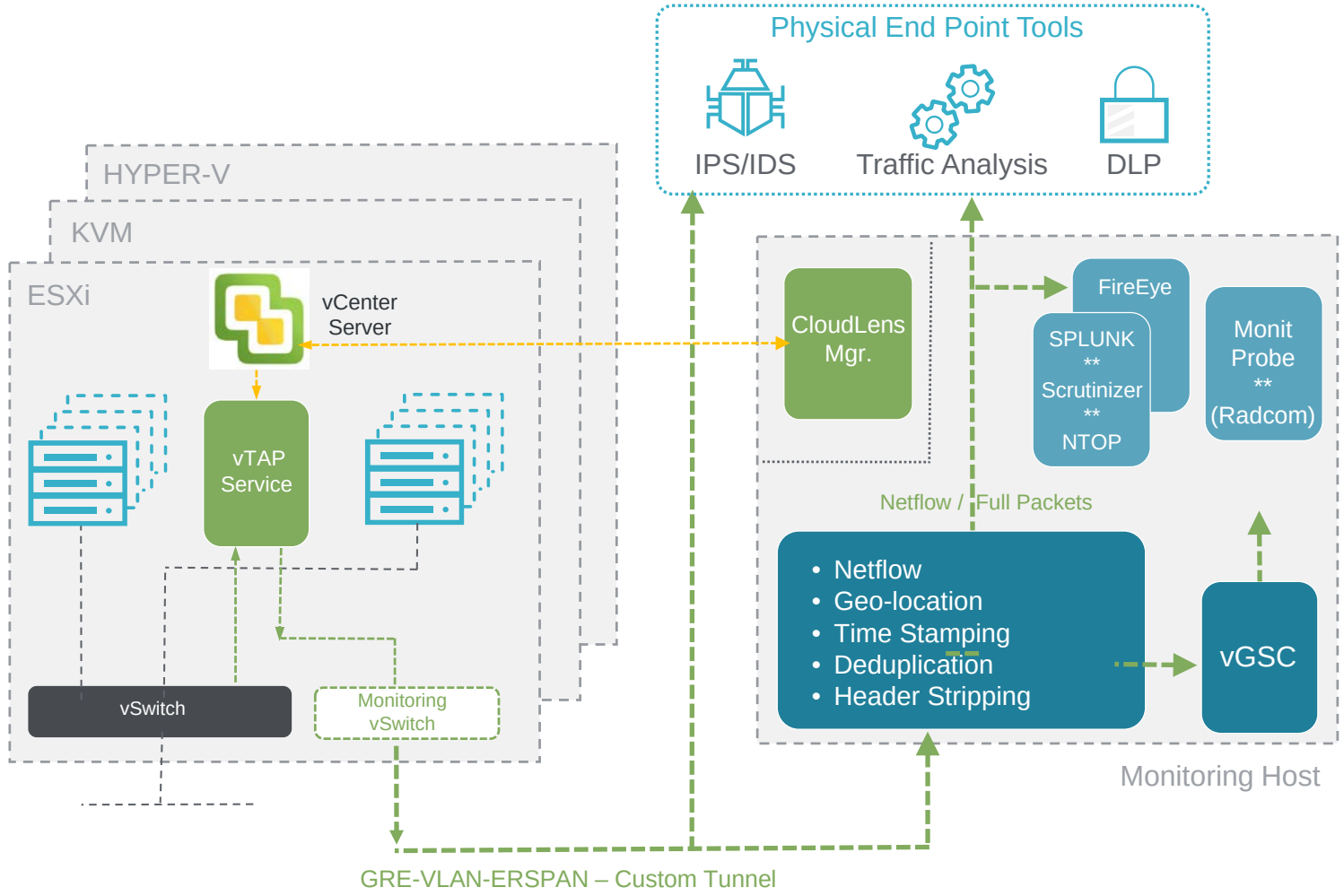
CLOUDLENS PRIVATE

Virtual Datacenter Visibility



Virtual Traffic Visibility

- Inter-VM Traffic Monitoring
- Multiple Hypervisor Support (ESXi, KVM, Hyper-V)
- GRE – VLAN – ERSPAN Protocols
- Centralized Management

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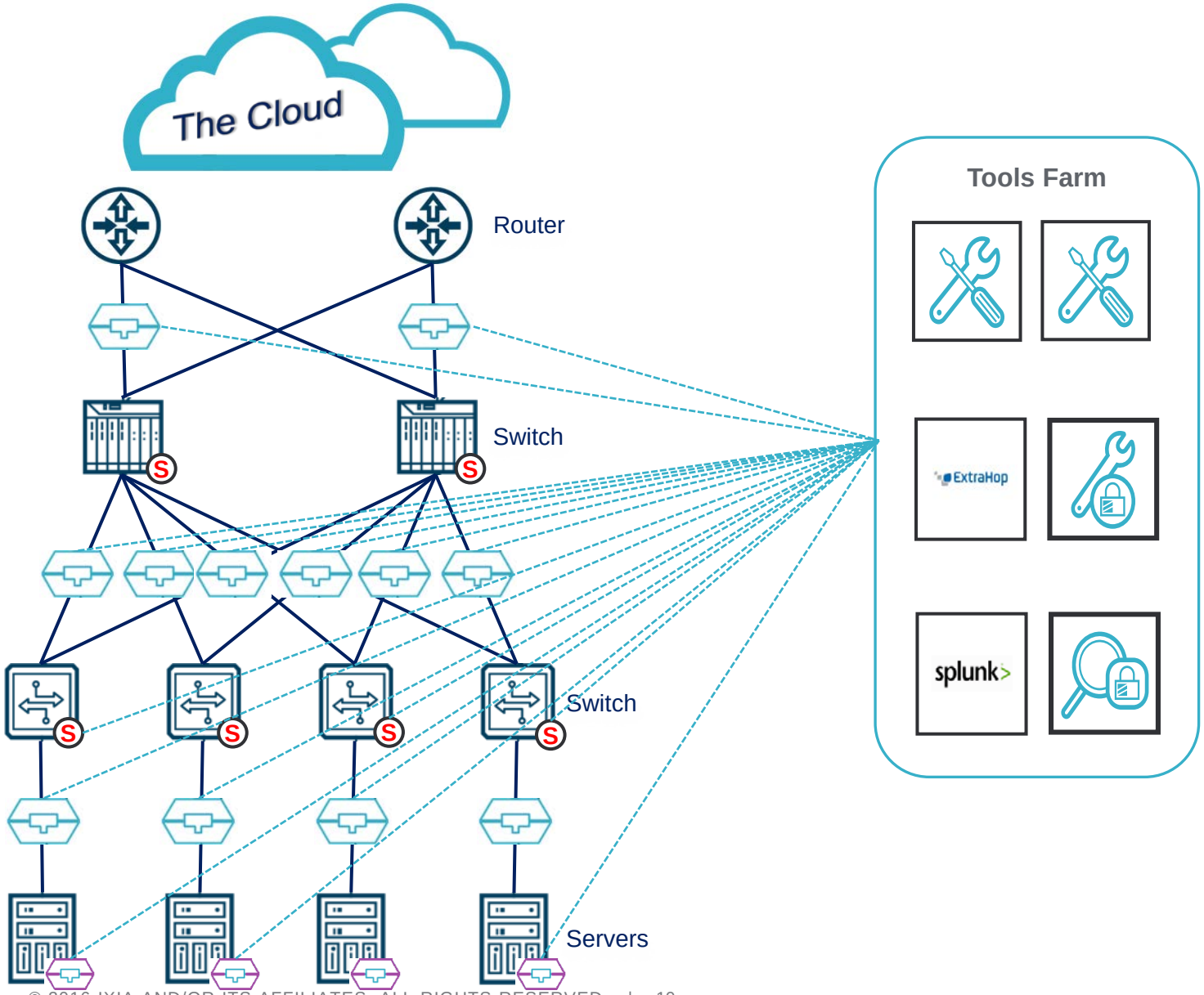
STEP 3: SOLVE ANOTHER PROBLEM



Granularity can become very costly due to:

> Every TAP requires two tool ports (A>B & B>A)

> Link speed dictates tool speed and performance (very costly for 40G/100G)

> Different tools are competing against the same TAP or SPAN port

> If not as much tool ports as TAP or SPAN are available engineers need to change ports. (Problems with access control/rights & distance)

> Tools are flooded with unnecessary data

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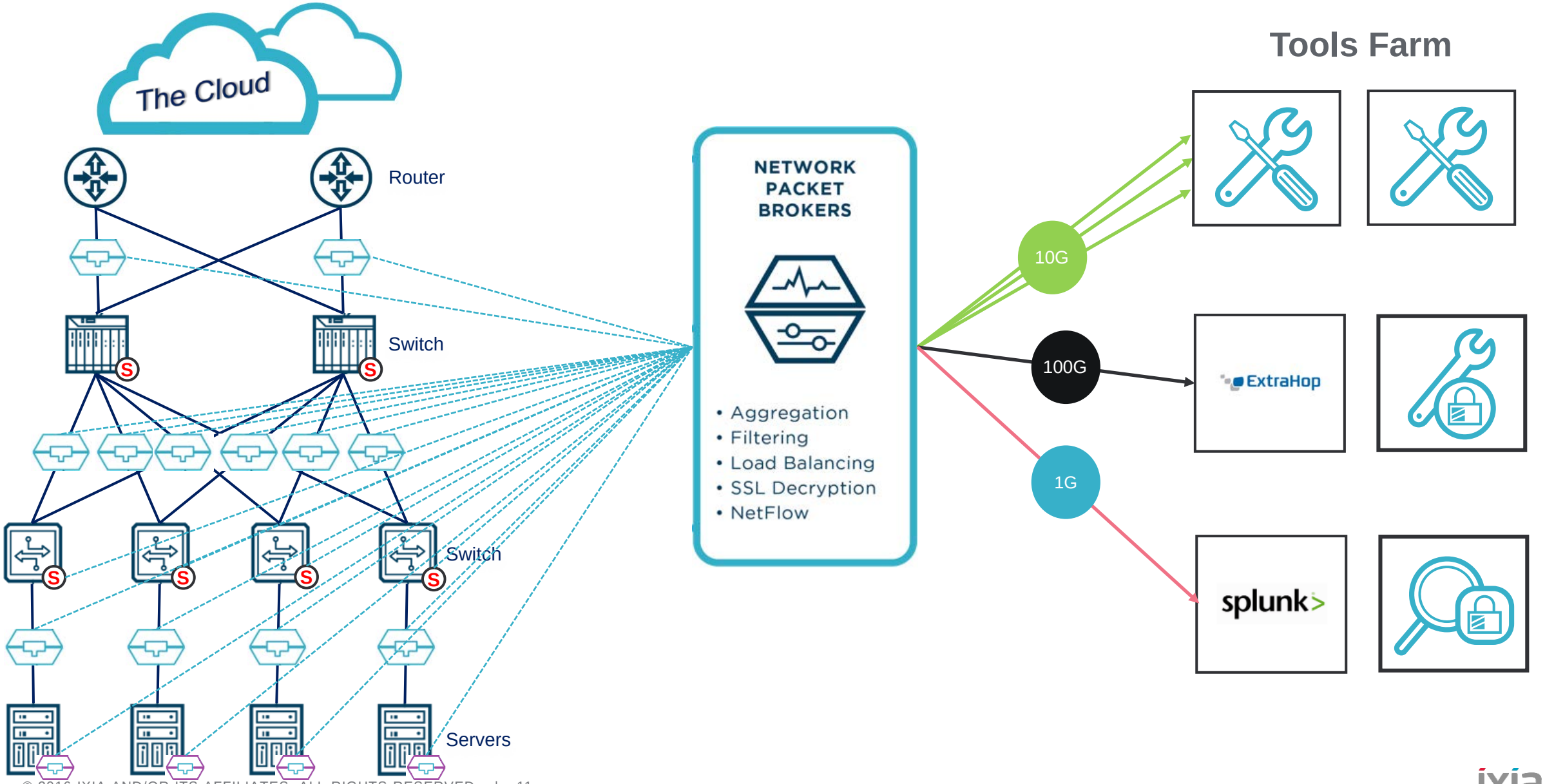
STEP 4: ADD A PACKET BROKER



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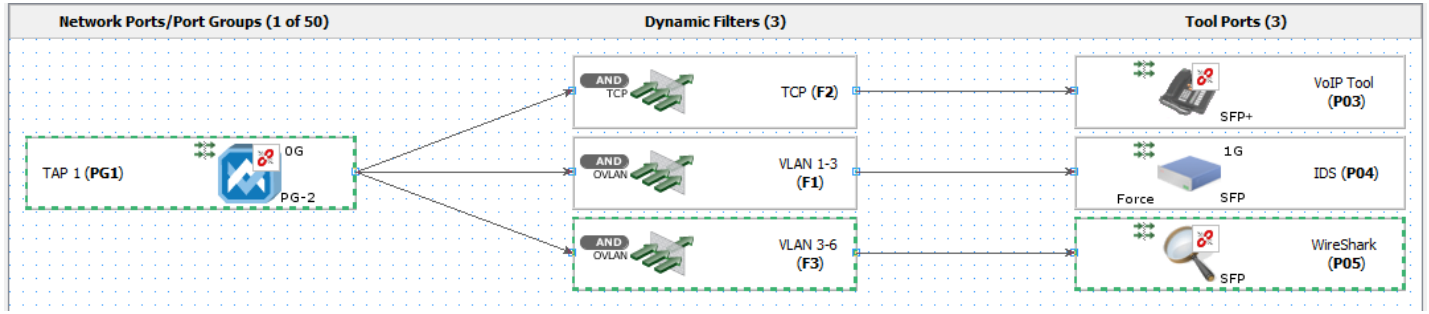
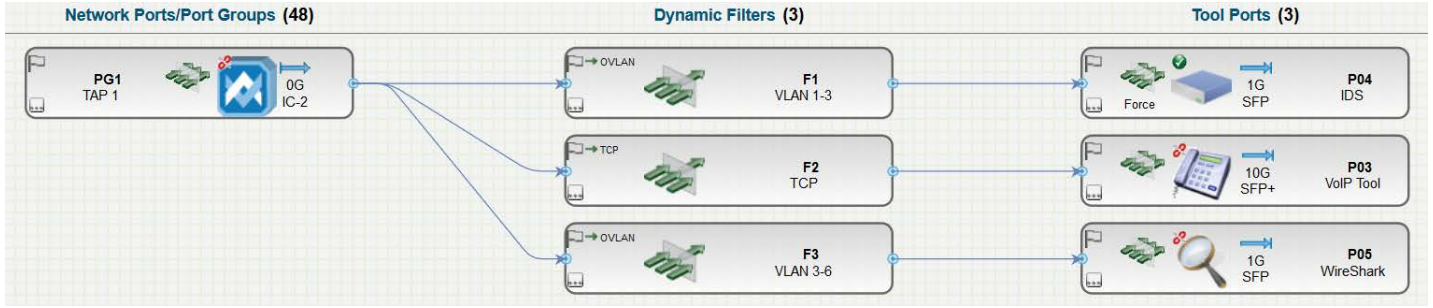
GRAPHICAL USER INTERFACE

The Easy Way (Ixia NTO)

Java



HTML 5



The Hard Way (Other)

Sample Commands – Multi-Rule Filters (VLAN & Ports)

```
# Define Port 1 thru 4 as egress ports (tool ports)), all others are ingress ports by default
config port-type 1 2 3 4 tool

# Define a cross-box "container" named "crossBoxMap"
config xbmap type mt alias crossBoxMap

# Define a multi-rule map filter, first four is for different VLAN ranges
# Tool port 1 & 2 of GigaVUE-1 is for NAC 1A & 1B
config map-rule crossBoxMap rule vlan 100..199 tool 1-1 1-4
config map-rule crossBoxMap rule vlan 200..299 tool 1-2 1-4

# Tool port 1 & 2 of GigaVUE-2 is for NAC 2A & 2B
config map-rule crossBoxMap rule vlan 300..399 tool 2-1 1-4
config map-rule crossBoxMap rule vlan 400..499 tool 2-2 1-4

# Tool port 3 of GigaVUE-1 is for AppMon 1A (which gets traffic for NetBIOS protocols)
config map-rule crossBoxMap rule portsrc 137..139 tool 1-3
config map-rule crossBoxMap rule portdst 137..139 tool 1-3

# Tool port 4 of GigaVUE-1 is for AppMon 1B (which gets everything except protocols)
config map-rule crossBoxMap rule collector tool 1-4

# This designates the ingress ports for the map (Switches 1A, 1B, 2A & 2B)
config xbmapping net 1-19 1-20 2-19 2-20 map crossBoxMap
```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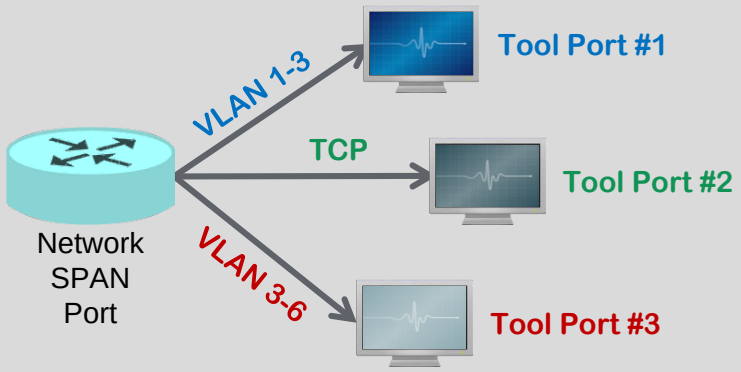
IXIA'S AUTOMATIC RULE ENGINE COMPILER

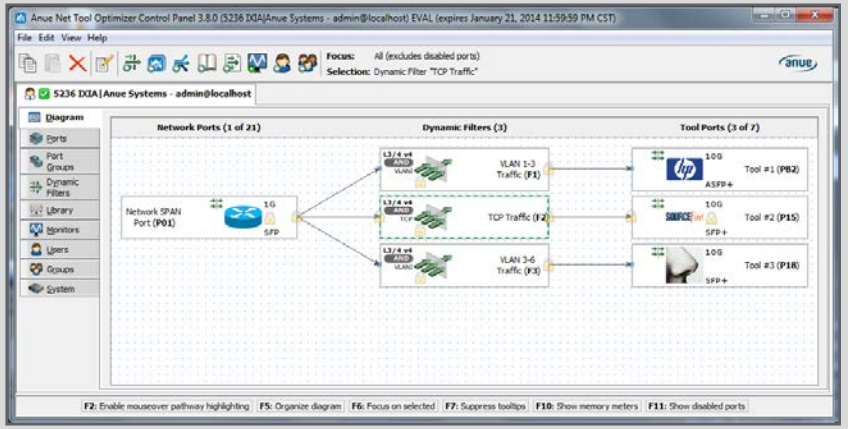
1. What you want

Traffic multi-casted from one SPAN port to 3 tools



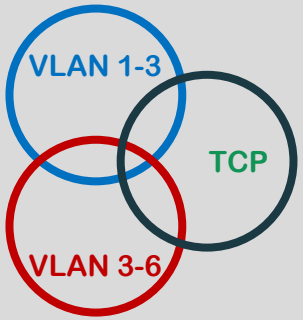
2. What you do

Enter 3 simple filters in the Network Tool Control Panel



3. What Automated Rule Set Compiler does

Automatically calculates filter overlaps, and creates rules



No.	Criteria	Action
0	VLAN 3 + TCP	Tool 1, 2 & 3
1	VLAN 1-3 + TCP	Tool 1 & 2
2	VLAN 4-6 + TCP	Tool 2 & 3
3	VLAN 3	Tool 1 & 3
4	VLAN 1-2	Tool 1
5	VLAN 4-6	Tool 3
6	TCP	Tool 2
7	Null	Drop

4. Why is this a big deal

- Automatically resolves overlapping rules. Greatly simplifies getting to what you need.
- Hitless changes – no packets dropped
- Concurrent changes by different admin users
- Simple to integrate with external provisioning systems – automated service provisioning

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THANK YOU