FlowIntegrator™

Integrating Flow Technologies with Mainstream Event Management Systems

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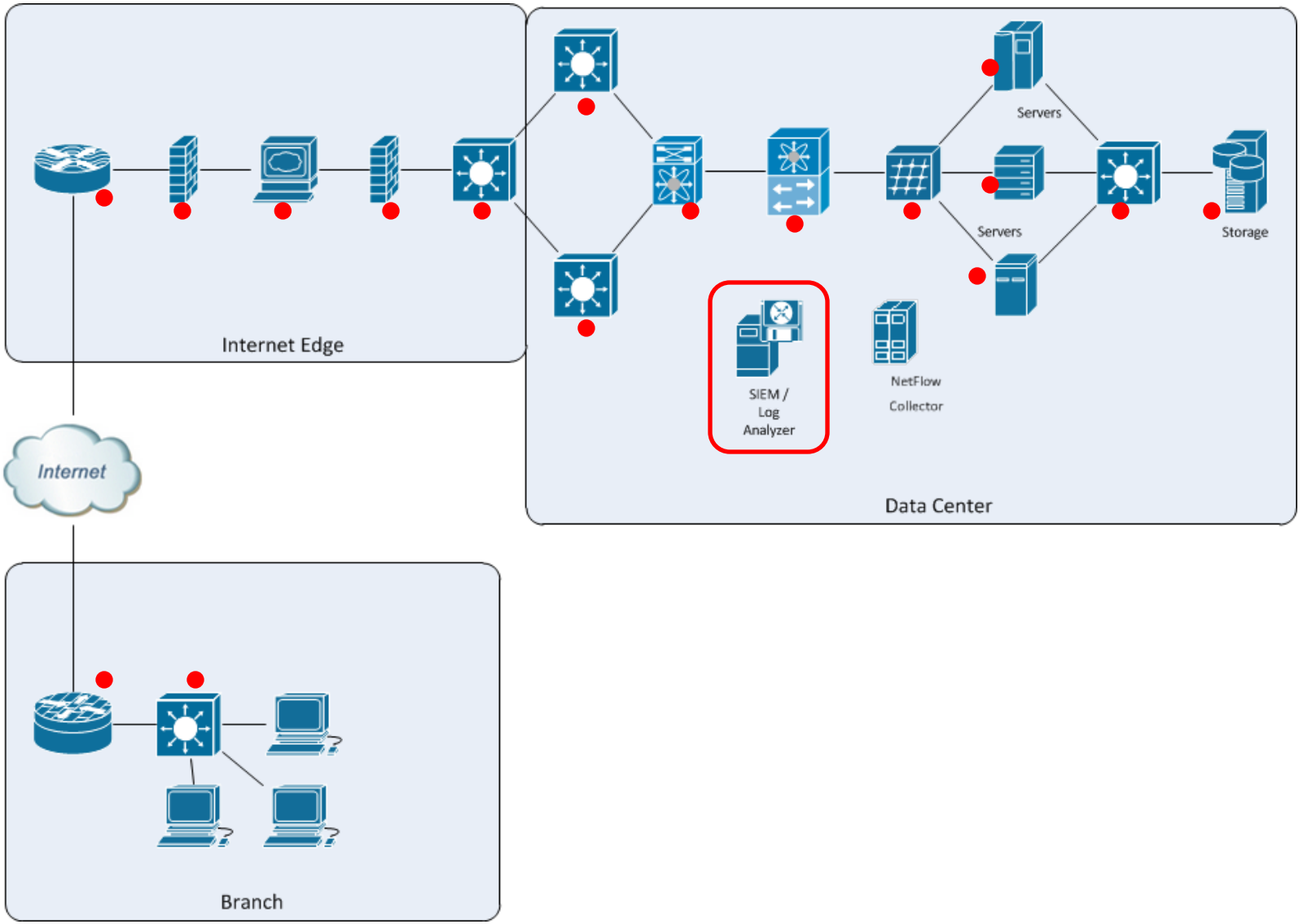
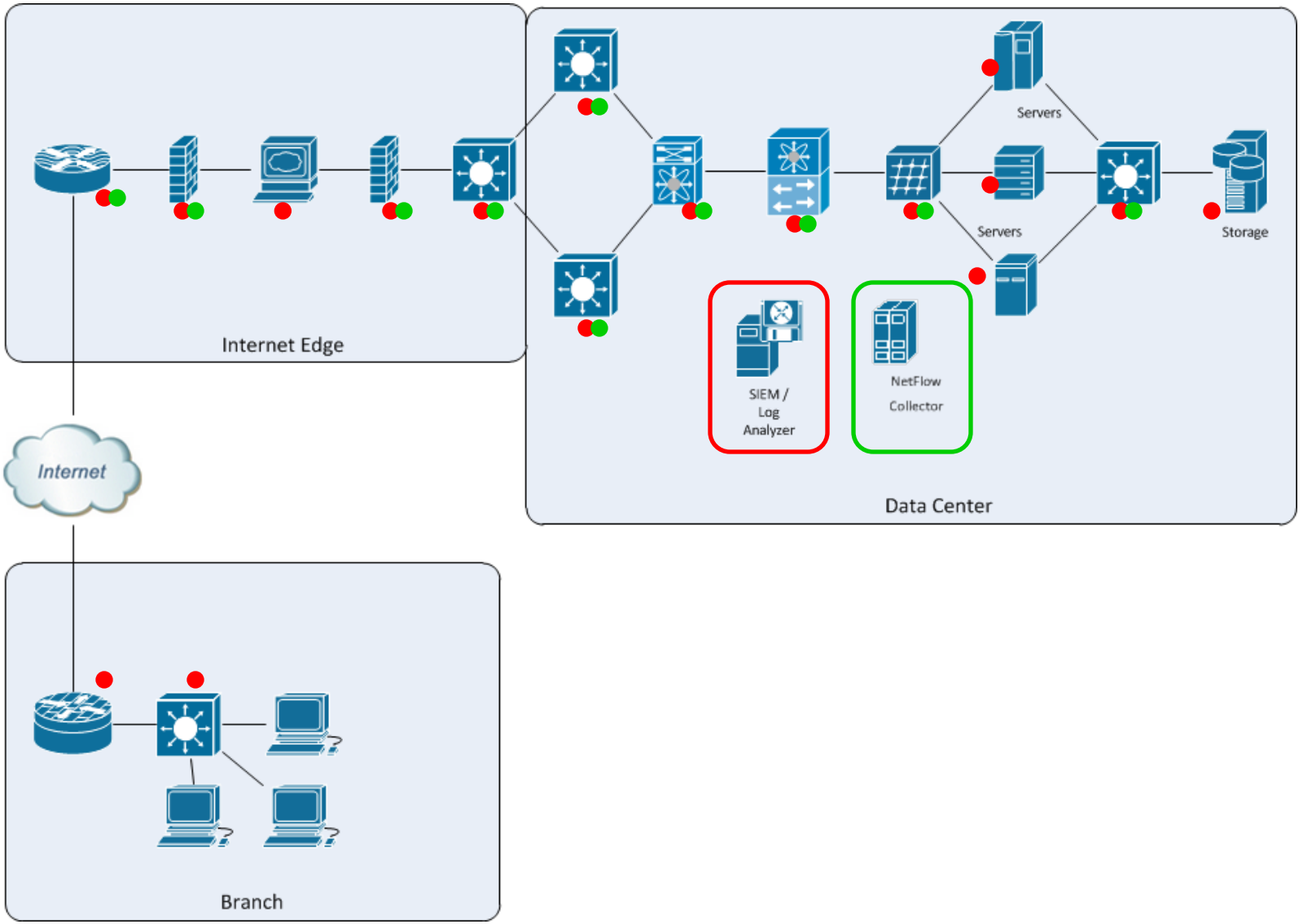
Problem

- Network infrastructure devices and devices connected to the network generate disparate types of information flows (syslog, SNMP, NetFlow, sFlow, etc.)
- Unless all sources of information are integrated, critical insights into network management or network security will be missed
- Unless security events are identified in real time, your enterprise is at risk
- Unless network problems are discovered in real time, your organization suffers

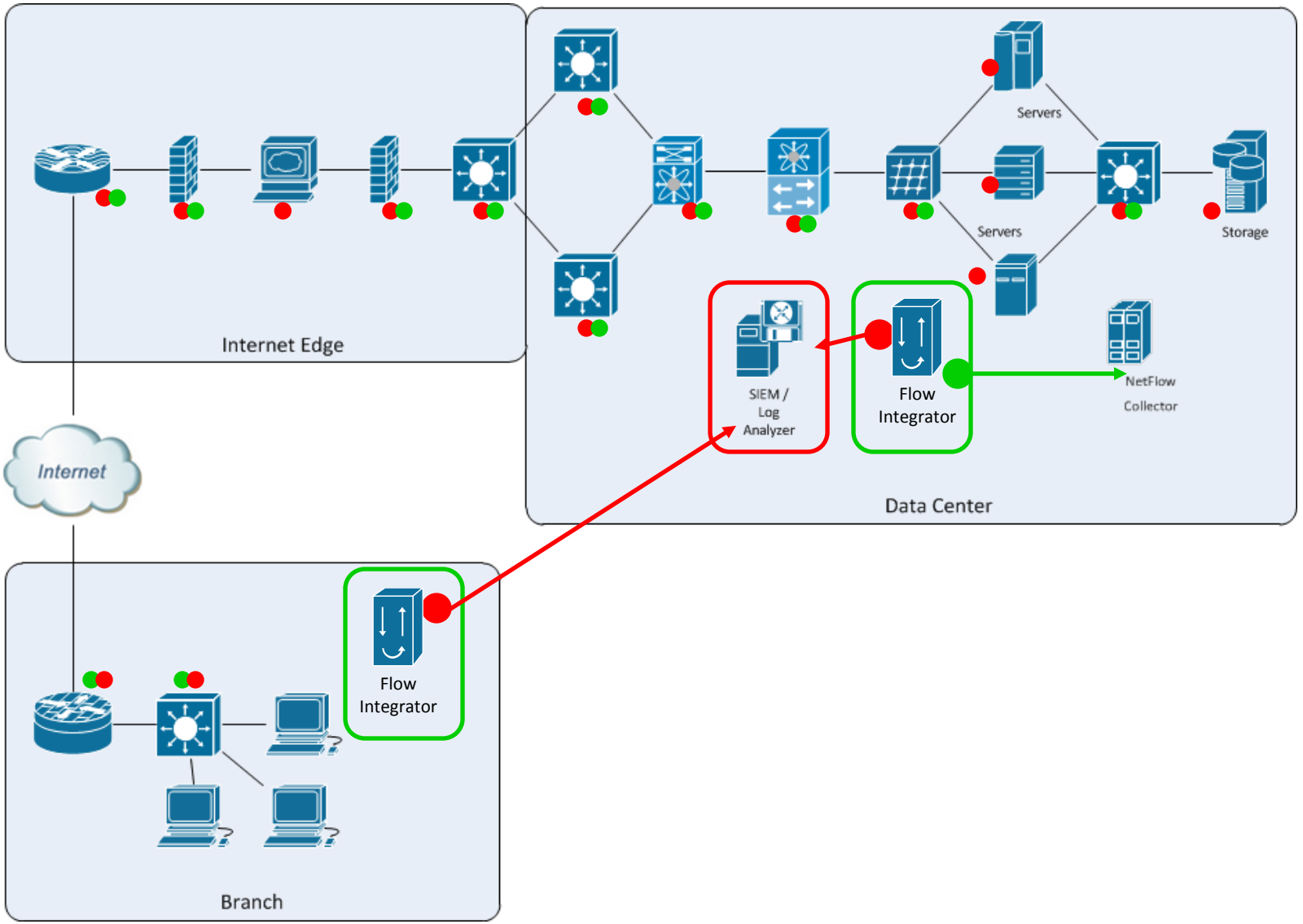
Collecting Syslogs



Collecting Flows



Putting It All Together!



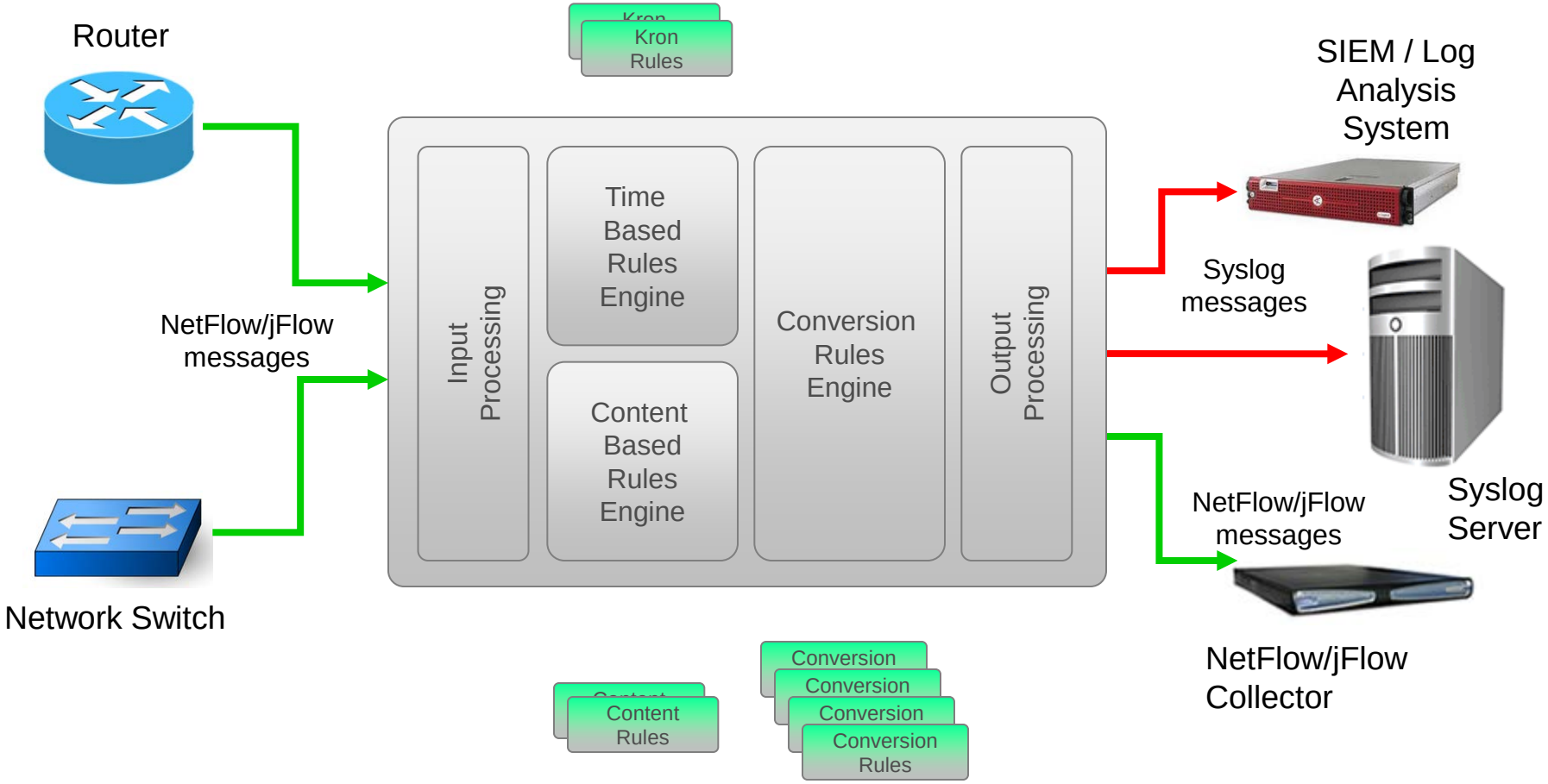
Challenges

- **Mid to high end routers may generate hundreds of thousands flow records per second**
  - Cisco ASR1000© series router Firewall and CGN features generate up to 400K NetFlow records per second
- **Too much data**
  - Flow data consumes terabytes of disk space
- **Flow data is transmitted in hard to decode binary format**
  - NetFlow v9/IPFIX protocol allows variable record structure
- **Difficult to process in real time**
  - Existing solutions require costly distributed infrastructure

FlowIntegrator Technology

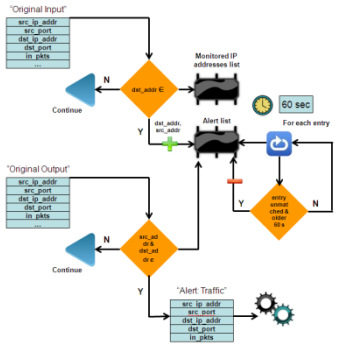
- Introduces a mechanism to intelligently process flows based on the content of records
- Permits configuring arbitrary filtering, aggregation, deduplication and obfuscation rules
- Time based rules allow for the reporting of flow aggregations and network events in real time with as little as 1 second resolution
- By converting flow information into the syslog format, seamlessly integrates flow data producers with all existing log collectors and SIEM systems
- Transparently fits into the existing flow data collection infrastructure
- Converts to syslog over 350K flow records per second on an 8 core Intel Xeon processor

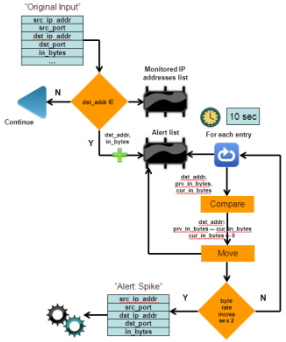
FlowIntegrator Ecosystem

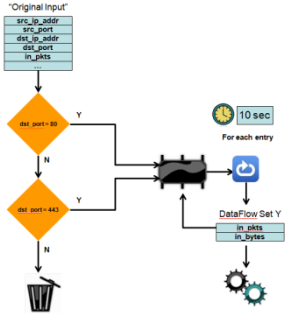


Processing Rules

- Rule-based technology able to process multiple flow formats such as NFv5, NFv9, jFlow, IPFIX, etc
- Rules are created via a GUI or SDK
- A rule may be applied to a specific record type or a subset of record types, or to all flow packets passing through FlowIntegrator
- Administrators may also specify one or more time-based (“kron”) rules for reporting aggregated information
- Rules can be chained



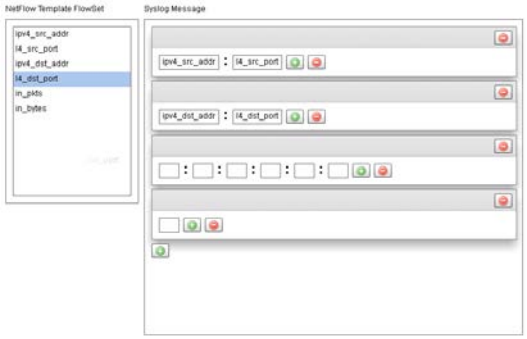




Conversion Rules

- A conversion rule implements mapping of a flow record to one or more syslog messages or flow packets
- Flow protocol to syslog maps are created via the built-in GUI or SDK
- Default built-in conversion rule provides one-to-one mapping of data in a flow record to a syslog message

In this example the resulting syslog message contains a standard header (blue), sourceIP:sourcePort , destIP:destPort, and the number of packets exchanged in this flow (prefixed with “P”)



Feb 26 18:23:47 10.10.0.2 0:0:2:2 10.10.1.14:28382 10.10.2.7:389 P:876

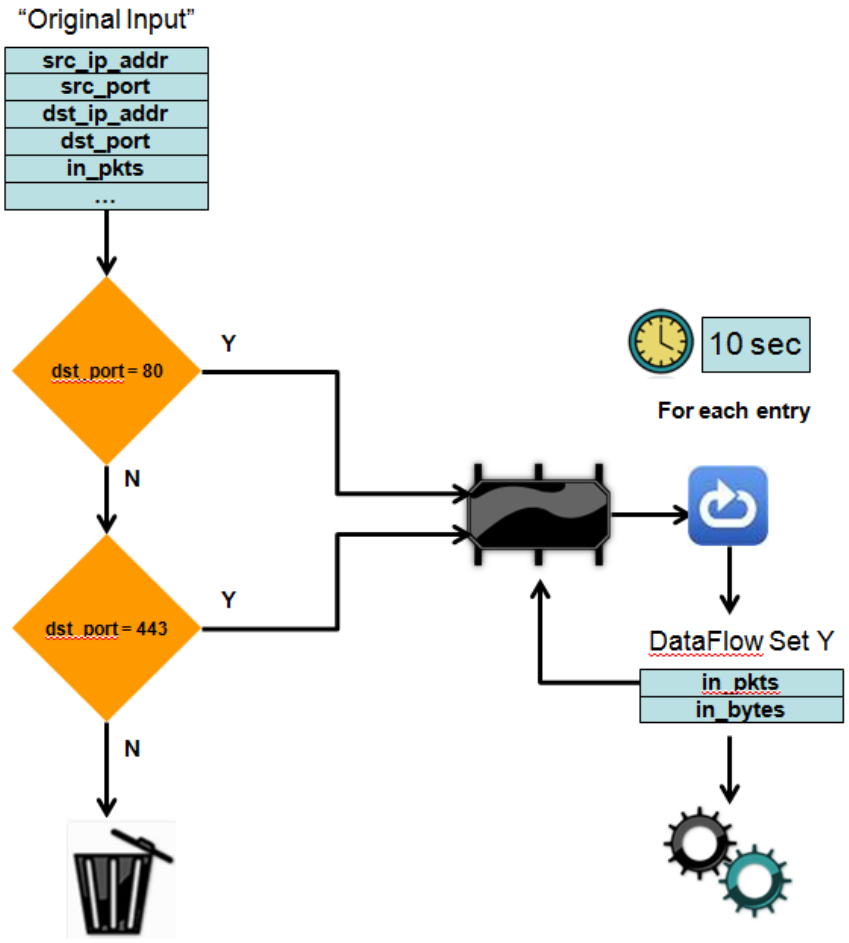
Example Rule: Aggregation

Objective:

Report current traffic load by application by router. In this simplified example we show a rule that reports incoming traffic to all web servers

FlowIntegrator Solution:

Sum up the number of bytes and packets of the observed web traffic, and report accumulated volume every 10 seconds



Feb 26 18:23:47 10.10.0.2 0:0:2:2 Server=10.10.1.14 Packets=976 Bytes=999423

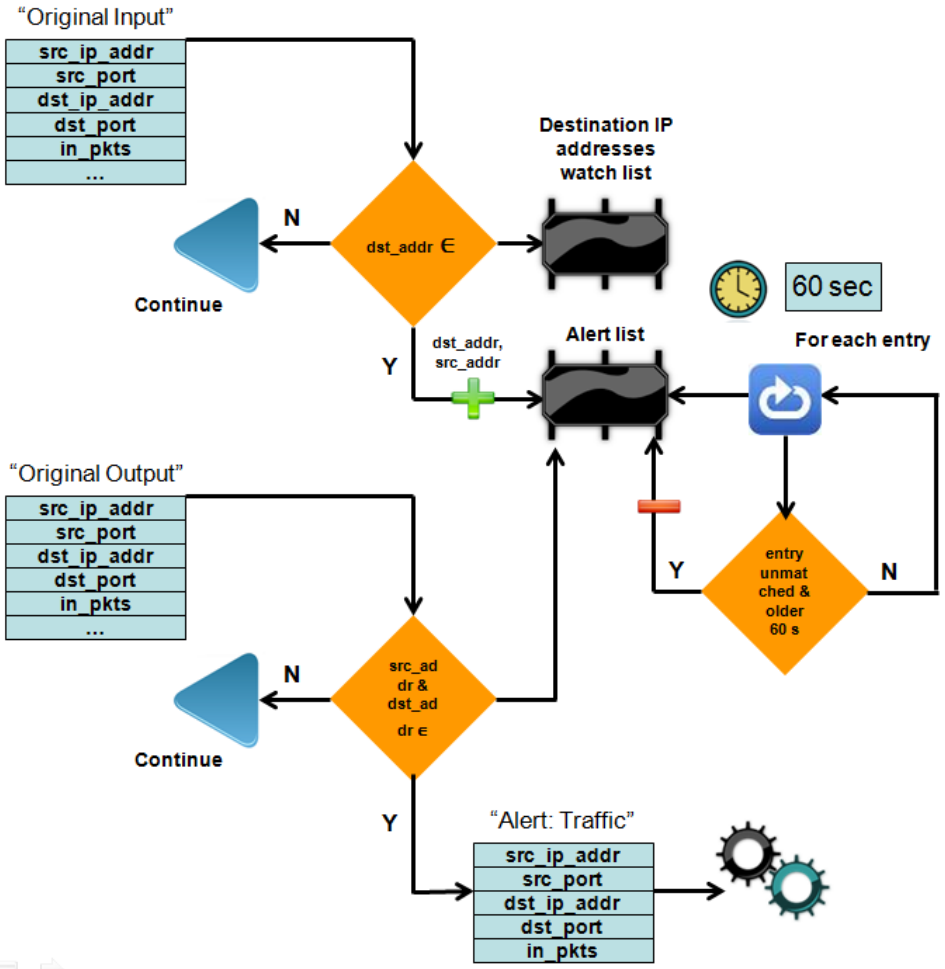
Example Rule: Detecting Unusual Traffic

Objective:

Detect an infected host on internal network. In this example the rule identifies an "off-limits" device on the internal network which responds to an outside peer

FlowIntegrator Solution:

Examine NFv9 "Original Input" and "Original Output" records and send a syslog message when one of the monitored internal devices attempts an egress communication in response to an ingress communication

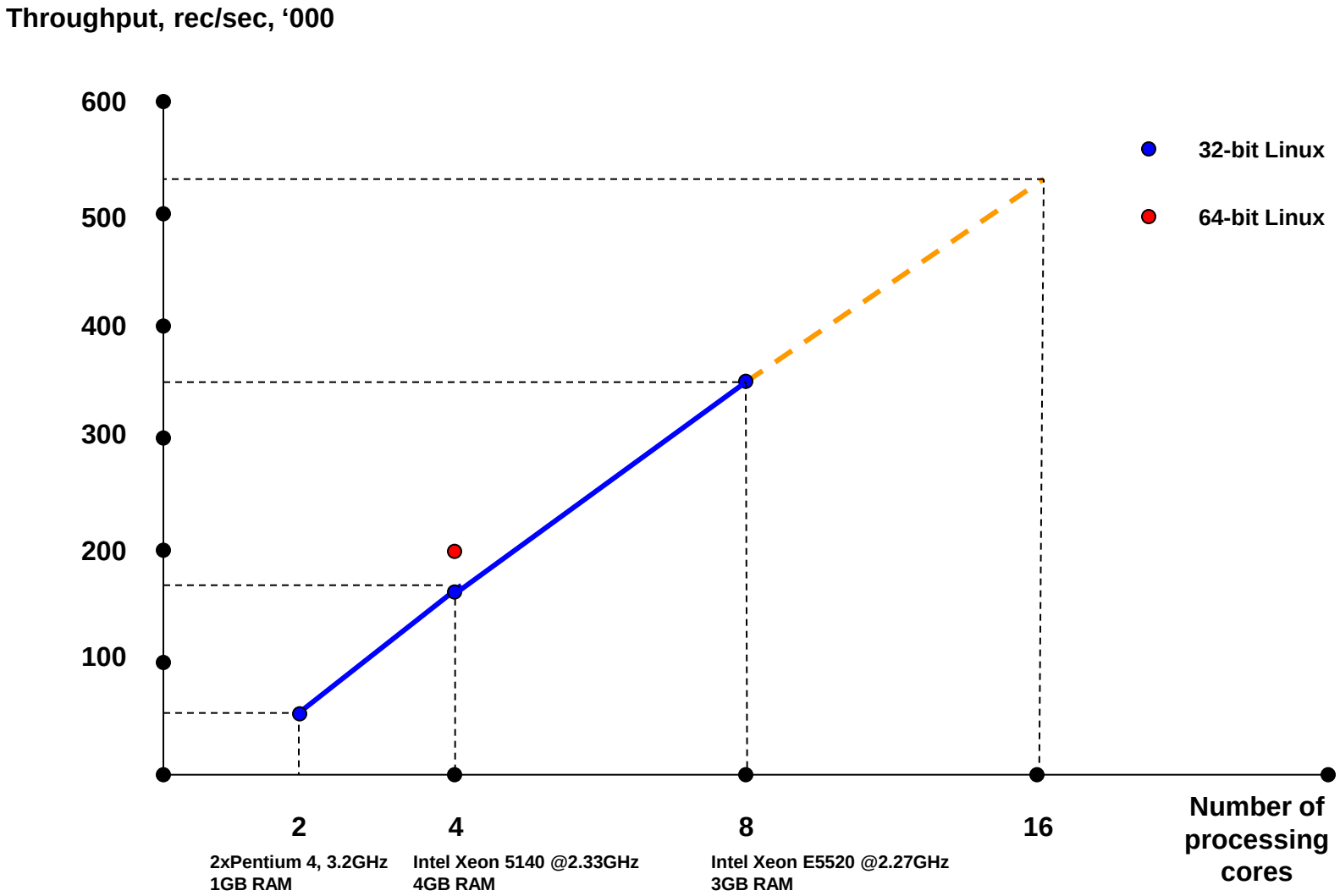


Feb 26 18:23:47 10.10.0.2 0:0:2:2 Ext=77.10.1.14:22213 Int=10.10.1.21: 8080 Alert=Traffic Pkts=425

Features and Benefits

- **FlowIntegrator is a NetFlow/IPFIX Mediator providing real time integration of network metadata into existing SIEM systems, syslog analyzers, flow data collectors, and network management systems**
- **Enables network administrators to:**
  - detect important network events in real time
  - identify applications for network management and security purposes
  - monitor and troubleshoot their networks for packet loss and jitter
  - filter and aggregate network metadata information
  - enable assured delivery of network metadata information to log collectors
- **Eliminates storage and sifting through terabytes of flow data**

FlowIntegrator – Performance



Thank You for Your Time

Contact information:

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