Highlights

- Designed for 4G/LTE, 5G Mobile Network Operators, and IoT scale

- Maximizes utilization of existing monitoring solutions with subscriber-aware network traffic load balancing, filtering, and sampling

- Enables monitoring solutions to scale out beyond native boundaries by offloading control and data plane correlation from analytics probes

- Separates data and voice traffic to enable best-of-breed monitoring solution deployment

- Adapts to fast-changing monitoring needs with software-driven agility and API for workflow automation

Extreme Networks Session Director

Software-Driven Session Intelligence for Scalable, Agile Network Visibility

The world's leading service providers increasingly use an array of out-of-band analytics tools to monitor, orchestrate, secure and monetize their networks. To function more efficiently, these analytics tools depend on specialized "network visibility" infrastructure – commonly known as Network Packet Brokers (NPBs) – to aggregate, replicate, and forward relevant network traffic flows to them for analysis.

Exponential growth in IP traffic is driving mobile network operators to scale their monitoring and analytics infrastructure. However, the escalating costs to achieve scale are not sustainable. Therefore, service providers need new options to extract greater productivity from their existing monitoring tools and maximize returns on their investments. They also need to modernize their networks and improve service agility to remain competitive in the marketplace. To this end, service providers are adopting Software-Defined Networking (SDN), Network Functions Virtualization (NFV), and API-driven automation – and they expect their network visibility infrastructure to support these technologies. With Extreme Session Director, service providers can meet these challenges and cost-effectively scale their monitoring and analytics infrastructure.
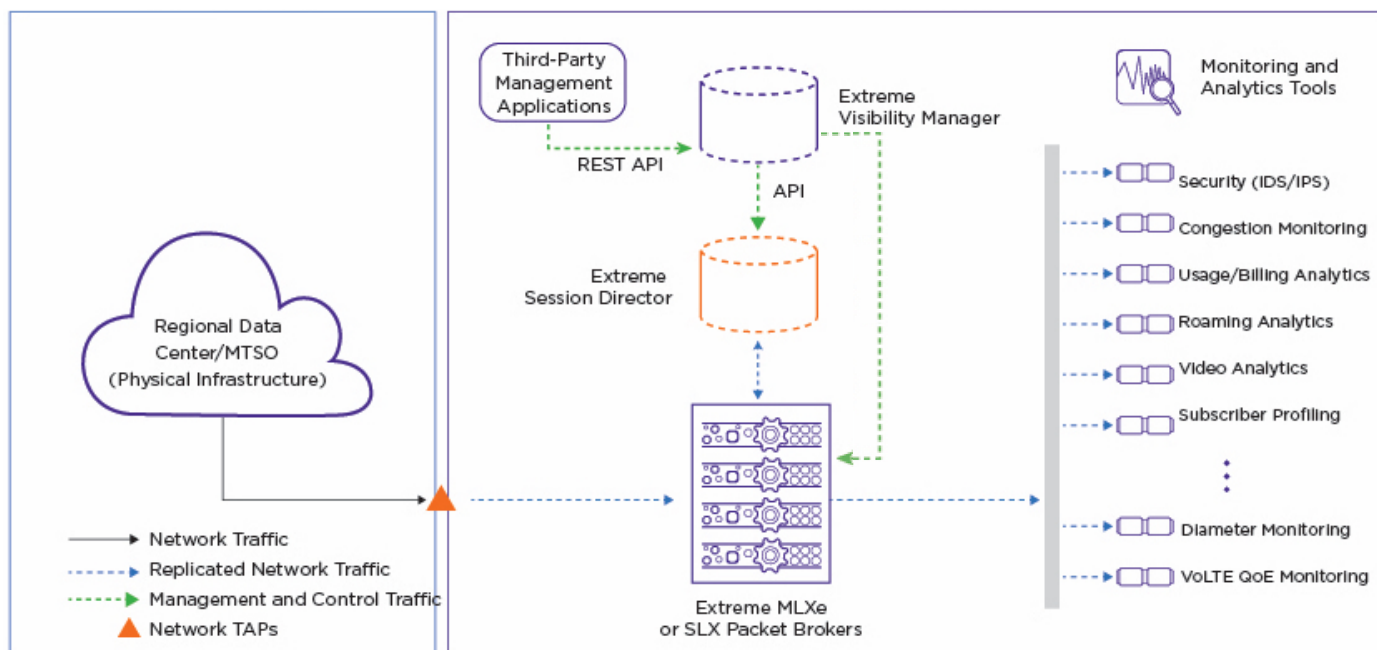
Figure 1: Extreme Networks Session Director deployment architecture.

Network Visibility and Expert Traffic Optimization at Scale

Extreme Session Director is a scalable software application deployed on commodity server hardware. It works in tandem with Extreme Networks MLXe or Extreme Networks SLX® Packet Brokers to deliver mobility-aware network traffic correlation, filtering, and load-balancing capabilities. See Figure 1. By inspecting mobile traffic flows, Extreme Session Director can make dynamic, session-aware forwarding decisions that are then enforced by the packet broker nodes. This next-generation network visibility solution enables mobile network operators to improve monitoring efficiency, and cost-effectively scale out their monitoring applications. In addition, Session Director enables operators to deploy best-of-breed analytics tools for each type of network traffic, and adapt to fast-changing monitoring needs.

Improve Monitoring Efficiency

Session Director enables mobile network operators to extract maximum productivity from their monitoring and analytics infrastructure. With its ability to correlate control and data plane, Session Director delivers the following key subscriber session-aware features that increase monitoring application utilization:

- Load balancing to distribute the load evenly among analytics probes, eliminating underutilized, or oversubscribed probes

- Filtering by subscriber, network, device type, or location to forward only relevant traffic to each analytics probe, improving probe resource utilization

- Network traffic sampling to reduce the volume of network traffic delivered to analytics probes

Scale Out

As data volumes grow in the mobile network, the monitoring infrastructure needs to scale out to increase monitoring capacity. However, this infrastructure is limited in its ability to scale and going beyond this limit typically involves costly upgrades. Session Director enables the monitoring infrastructure to scale beyond its native scale limit by offloading the resource-intensive session correlation and load-balancing functions. With Session Director, mobile operators can cost-effectively scale out their monitoring infrastructure.

Deploy Best-of-Breed Monitoring

Session Director can isolate voice (VoLTE) network traffic from the rest of the data traffic in the mobile network. This isolation enables operators to efficiently forward voice network traffic to specialized VoLTE analytics tools, while at the same time forwarding only data traffic to data analytics tools. Therefore, operators can deploy the best analytics tool for each network application while maximizing efficiency of each tool.

Software-Driven Agility

With its agile, software-defined architecture, Session Director speeds up scale and feature additions while reducing acquisition and deployment cycles. This enables mobile operators to efficiently adapt their visability infrastructure to changing monitoring needs. In addition, Session Director's a RESTful API enables workflow automation and third-party integration.

On-Demand Network Visibility

With Session Director, service providers gain software-defined session intelligence for scalable, and agile network visibility. Key features of this solution include:

- GTP, VoLTE, and SIP-RTP session correlation (of bearer and control flows)
- Filtering and load balancing traffic based on:
  - International Mobile Subscriber Identity (IMSI)
  - International Mobile Equipment Identity (IMEI)
  - Access Point Name (APN)
  - Radio Access Type (RAT)
  - Location identifiers (MCC, MNC, LAC, LAI, TAI, TAC, RAI, RAC, SAI, ULI, ECGI, CGI)
  - Charging characteristics
  - Subscriber-based traffic sampling with options to exclude control plane from sampling
  - Traffic deduplication for all traffic types or only user plane traffic
  - PTP–based time stamping
  - Flexible filtering based on pattern match any packet offset

Session Director Specifications

Recommended Minimum Server Configuration

- CPU: Dual Intel Xeon E5-2670 v3 2.3 GHz, 30 MB cache, 9.60 GT/s QPI, Turbo, HT, 12 C/24 T (120 W), max memory 2,133 MHz or higher
- RAM: 256 GB
- HDD: 1 TB
- Operating system: CentOS 7.2, RedHat Enterprise 7.2
- Ports:
  - 40 GbE NIC (generally used as a data port): Supported by 2×40 GbE Intel NIC - Intel Ethernet Converged Network Adapter XL710-QDA2
  - 10 GbE NIC (can be used as a control/data port): Supported by 4×10 GbE Intel NIC - Intel Ethernet Converged Network Adapter X710-DA4FH
  - 10 GbE NIC (can be used as a control port): Supported by Intel 82599-based 10 GbE NIC (example: Intel X520 DP 10 GbE)

Performance (per instance)

- Maximum system throughput: 80 Gbps
- Maximum of data subscribers: 15 million
- Maximum of VoLTE subscribers: 15 million
- Maximum of bearer sessions: 50 million

Clustering

- Support for clustering of up to four Extreme Networks Session Director instances with maximum aggregate throughput of 320 Gbps per cluster

Management

- CLI- or GUI-based management interface with Extreme Networks Visibility Manager and RESTful APIs

Extreme Networks Session Director Ordering Information

Part Number	Description
BR-NVA-SD7100-P-01	Extreme Session Director (SD) 7100 feature bundle perpetual license for 40 Gbps of total traffic
BR-NVA-SD8100-P-01	Extreme Session Director (SD) 8100 feature bundle perpetual license for 40 Gbps of total traffic
BR-NVA-SD8200-P-01	Extreme Session Director (SD) 8200 feature bundle perpetual license for 40 Gbps of total traffic
BR-NVA-SD9100-P-01	Extreme Session Director (SD) 9100 feature bundle perpetual license for 40 Gbps of total traffic
NVA-SD7100-SVV-RSW-1	Essential App Support 24×7 renewal, for BR-NVA-SD7100-P-01
NVA-SD7100-SVV-RSW-2	Essential App Support 24×7 renewal, for BR-NVA-SD7100-P-01
NVA-SD7100-SVV-RSW-3	Essential App Support 24×7 renewal, for BR-NVA-SD7100-P-01
NVA-SD7100-SVV-RSW-4	Essential App Support 24×7 renewal, for BR-NVA-SD7100-P-01
NVA-SD7100-SVV-RSW-5	Essential App Support 24×7 renewal, for BR-NVA-SD7100-P-01
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Extreme Network Visibility Solutions

Network Visibility solutions help mobile operators monitor, secure, analyze, and monetize their physical and virtual networks at scale, as they begin their journey to 5G. With programmable hardware packet brokers and the industry's first full-featured software packet broker, Extreme Networks delivers a best-in-class network visibility solution built for the most demanding networks.

Extreme Networks Global Services

Extreme Networks Global Services has the expertise to help organizations build scalable, efficient cloud infrastructures. Leveraging 20 years of expertise in storage, networking, and virtualization, Global Services delivers world-class professional services, technical support, and education services, enabling organizations to maximize their Extreme Networks investments, accelerate new technology deployments, and optimize the performance of networking infrastructures.

Acquisition Options That Match Balance Sheet Objectives

Successful network deployments drive business forward, providing technical and financial agility. Extreme Networks offers the broadest financing models, from traditional leasing to Extreme Networks Network Subscription. Network-as-a-Service allows organizations to subscribe to network assets today then upgrade on demand, scale up or down, or return them with 60-day notification. Network Subscription plans can be structured to meet IASC guidelines for OpEx or CapEx treatment to align with financial goals. Learn more at www.nonetworkcapex.com.

Maximizing Investments

To help optimize technology investments, Extreme Networks and its partners offer complete solutions that include professional services, technical support, and education. For more information, contact a Extreme Networks sales partner or visit www.extremenetworks.com.

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