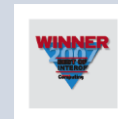


Ericsson and A10 Networks *CGNAT and IPv6 Transition Overview*

David Bell – A10 Networks Director of Business Development
Nikolay Mikhailov – Ericsson Solution Architect

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Customer Kudos
EMA Radar™ for ADCs/LBs: Q4-2011

Meeting Purpose & Agenda

- Who is A10?
- Ericsson and A10 partnership
- IPv6 transition challenges
- Technology and functional requirements
- Solution highlights
- A10 product family
- Competitive comparison example

A10 Company Overview

Founded in Late 2004

CEO & Founder

Lee Chen

Co-founder of
Foundry Networks,
Centillion Networks



Headquarters in San Jose

Offices in 22 countries;
customers in 50 countries



ACOS Platform



Leader in Application Networking

Optimize the networks of web giants, enterprises and service providers



Consistent Revenue Growth



CGNAT & IPv6 Transition Customer References

NTT Plala Inc.

KDDI

e mobile

PenTeleData.

NTT docomo

MetroCast

COX

3

ATLANTIC
broadband

suddenlink
Life Connected™

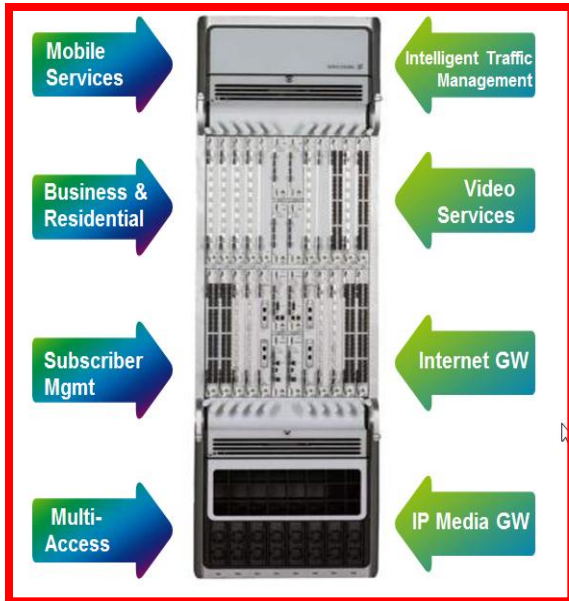
LOGIX
Simply better.

GRANDE
COMMUNICATIONS®
Here For You

A10 Customer Driven Innovation

Ericsson and A10 IPv6 Partnership Summary

Smart Services Router (SSR)



- A10 certified & preferred CGNAT & IPv6 transition solution
- Global partnership agreement - *signed Sept 18th 2012*
- Technology & market leadership
- Strategic long-term relationship

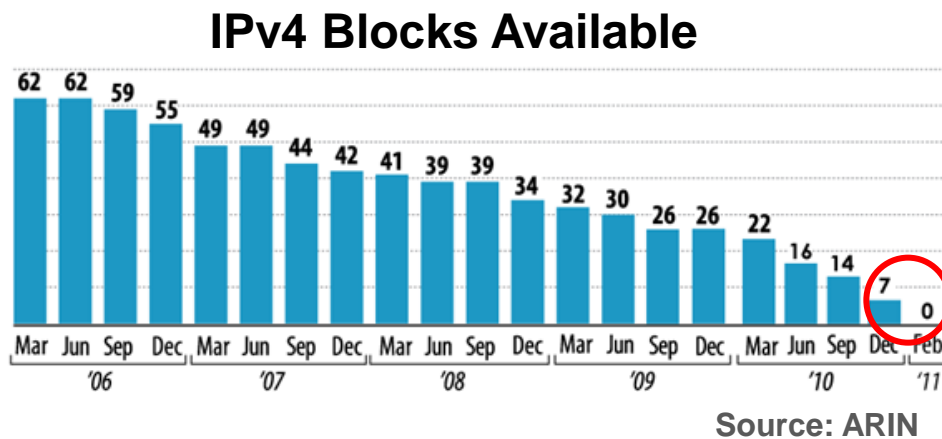


A10 CGNAT & IPv6 Transition

IPv6 Business Driver – IPv4 Depletion

➤ IPv4 Exhaustion

- ◆ More people & devices connected requiring an IP address – less IPv4 blocks available



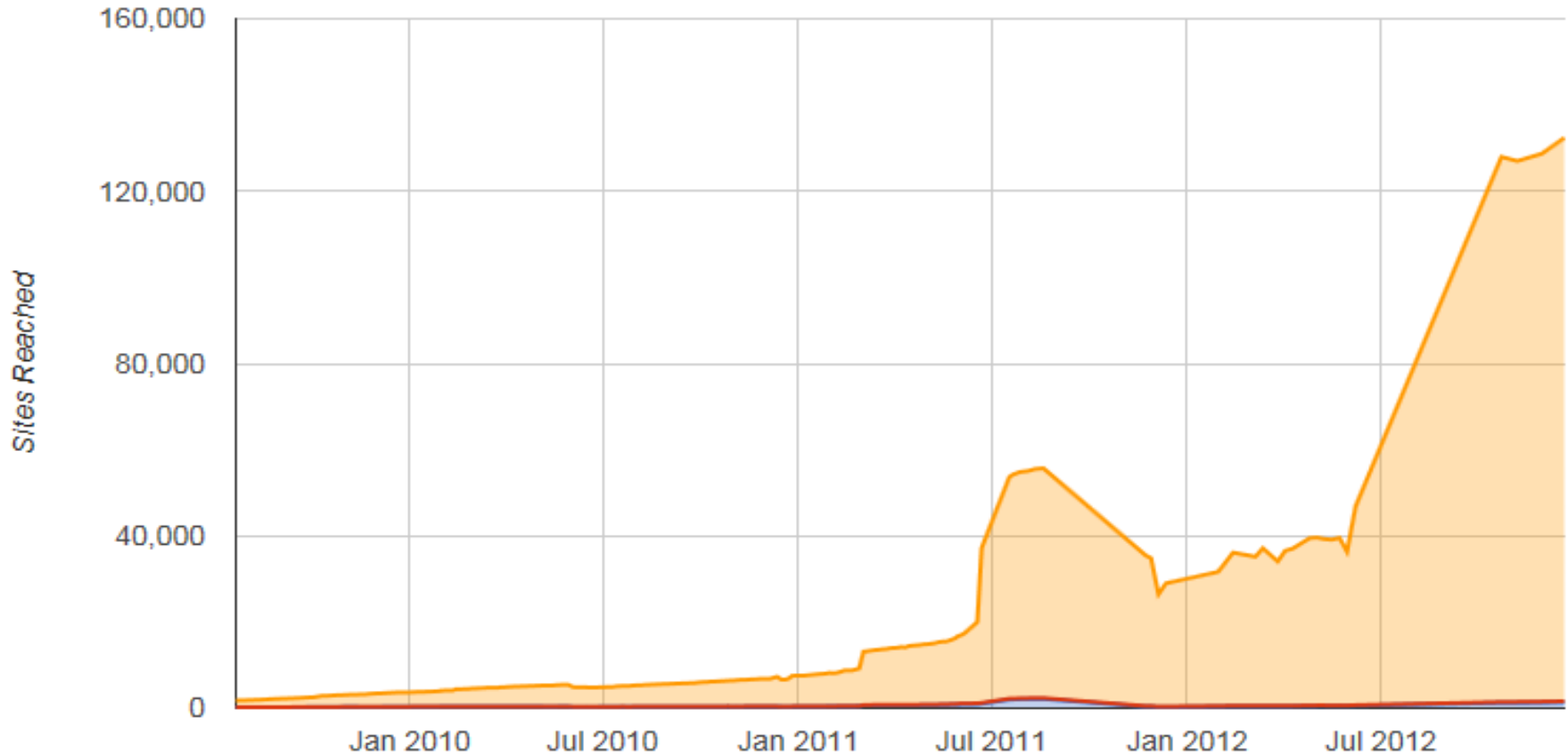
➤ Increased IPv6 Adoption

- ◆ More adoption in 2011 than all previous years combined
- ◆ Increased attention - World IPv6 Day
- ◆ Estimated 31 billion connected devices by 2020 (Intel study)



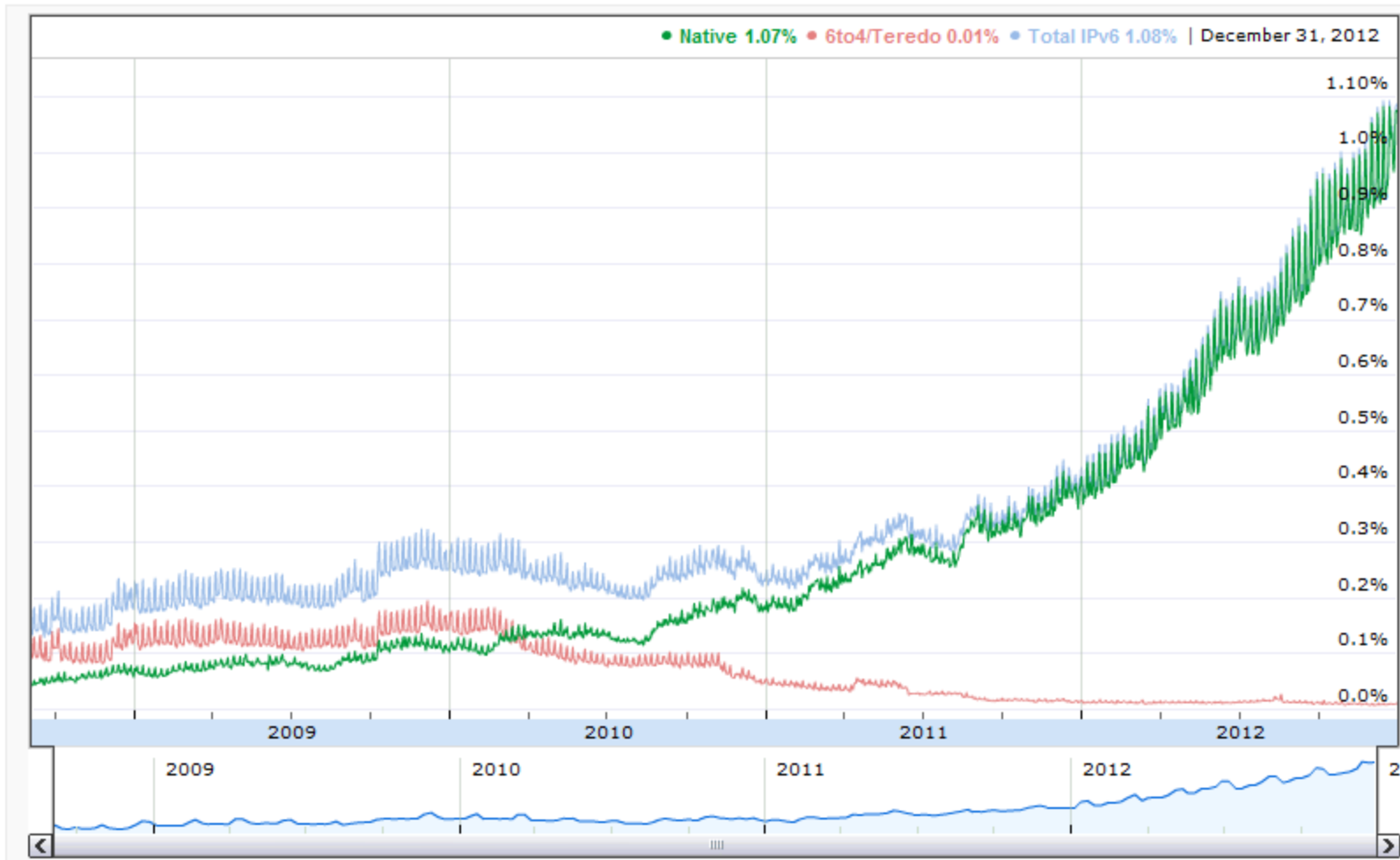
IPv6 Website Reachability

IPv6 vs. IPv4 Content Among Top 1M+ Sites



Source :UofPenn IPv6 Adoption Monitor

Google Access via IPv6



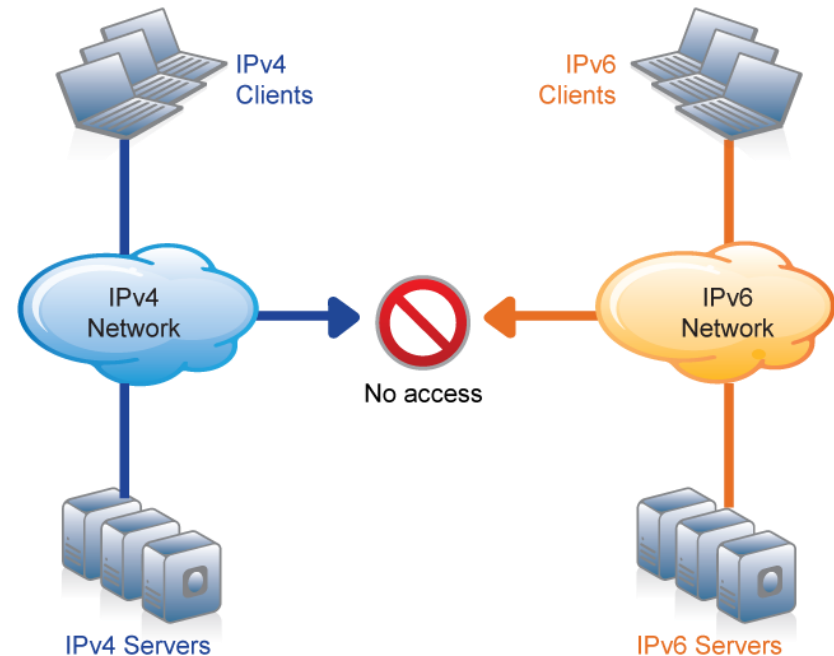
Source :ARIN IPv6 Adoption Monitor

Why is IPv6 not Already Widely Used?

- **IPv6 requires a full IPv6 chain of communication**
 - ◆ From **End Devices / Clients** (desktop, laptop, game device, smartphone)
 - ◆ To **Service Providers** (Internet Service Providers, Mobile Network Operators)
 - ◆ To **Enterprise / Content Providers**

Challenges

- Relatively low percentage of V6 content availability
- No IPV4 backwards compatibility!
- Lack of home CPE device support
- IPv6 Migration deployment and scale requirements
 - ◆ Throughput
 - ◆ NAT sessions
 - ◆ ALG support
 - ◆ Logging



Service Providers' IPv4 Exhaustion Solutions

➤ IPv4 Preservation

- ◆ Technology
 - ◇ CGNAT (Carrier Grade NAT)
- ◆ Deployment Models
 - ◇ NAT44 (Mobile)
 - ◇ NAT444 (Wireline)

➤ IPv6 Migration Technologies (Lots more!)

- ◆ Stateful
 - ◇ DS-Lite
 - ◇ NAT64 / DNS64
- ◆ Stateless
 - ◇ 6rd
 - ◇ Stateless NAT46

Requirements for Carrier Grade NAT (CGN)

➤ **Highly transparent**

- ◆ *existing user applications continue to work*
- ◆ Minimal to no impact on customers

➤ **Well defined NAT behavior**

- ◆ *new user applications can easily be developed*
- ◆ Consistent
- ◆ Deterministic

➤ **Fairness in resource sharing**

- ◆ User guarantees and protection

➤ **Work for both client-server (traditional) and client-client (P2P) applications**

Ensure your Customer's Applications Work!

- **Application Level Gateways (ALGs) for Applications that Require Special Handling**
 - ◆ Streaming Media (RTSP)
 - ◆ File Services (FTP)
 - ◆ Voice over IP (SIP)
 - ◆ Virtual Private Networking (PPTP, IPsec)
 - ◆ TFTP, ICMP, and DNS

- **End Point Independent Mapping and Filtering**
 - ◆ Peer to Peer Applications
 - ◆ VoIP
 - ◆ Gaming
 - ◆ Instant messaging

- **Sticky NAT**

- **Hair Pinning**

The Secret to Seamless IPv6 Transition

➤ Flexibility, Adaptability, and Feature Concurrency

- ◆ No one solution will fit all environments
- ◆ Each solution has its own pros & cons





Customer Driven Innovation

Solution Highlights

ACOS: L2 to L7 Intelligent Software Platform



A10 Solution Highlights

➤ Support for multiple IPv6 Migration Technologies

- ◆ *Feature Concurrency* for CGNAT, NAT64/DNS64, DS-Lite, 6RD, NAT46!
- ◆ No licenses

➤ High Availability

- ◆ *Fully stateful*
- ◆ Active-Standby or Active-Active
- ◆ IPv6 session synchronization for uninterrupted service following failover
- ◆ Multiple High Availability sets in the same network for greater service protection

➤ Logging

- ◆ Scalable, low impact, high performance and highly configurable
- ◆ Advanced features (Fixed-NAT/Zero-Logging, Port Batching, policy-based logging, compact logging, binary logging and others)

➤ CGN implementation on SoftAX

- ◆ VM support on VMware, KVM, Hyper-V, and Xen

A10 Solution Highlights (continued)

➤ Flexibility of Deployment

- ◆ Distributed or centralized
- ◆ Broadest range of performance choices
- ◆ Inline mode or one-armed mode
- ◆ User quota management

➤ IPv6 Routing

- ◆ Static IPv6 route and neighbor configuration
- ◆ Dynamic routing - OSPFv3, IS-IS, RIPng, BGP4+

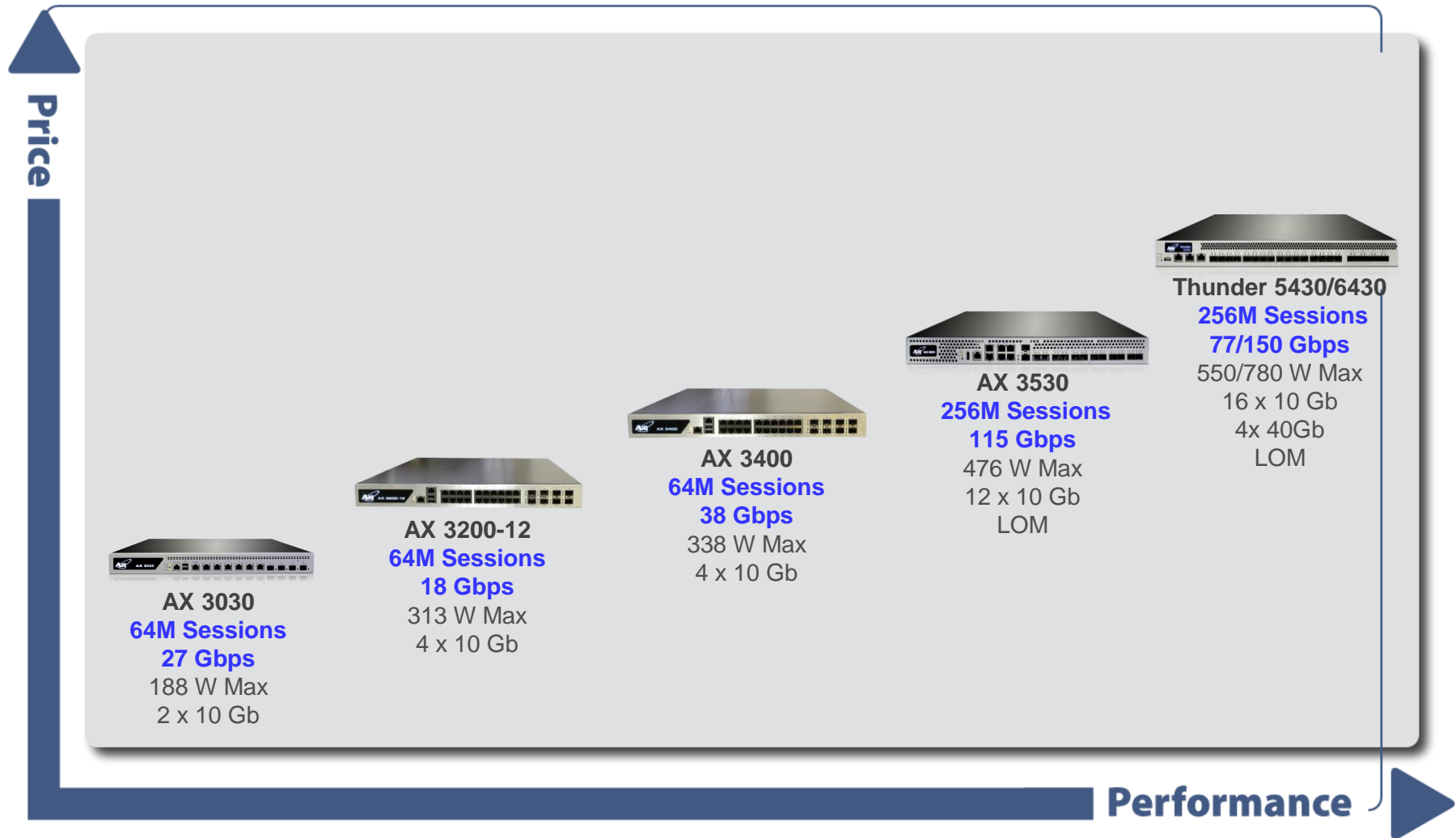
➤ Multi-Tenancy

- ◆ 128 VRF/VR
- ◆ Dynamic/Static routing between partitions

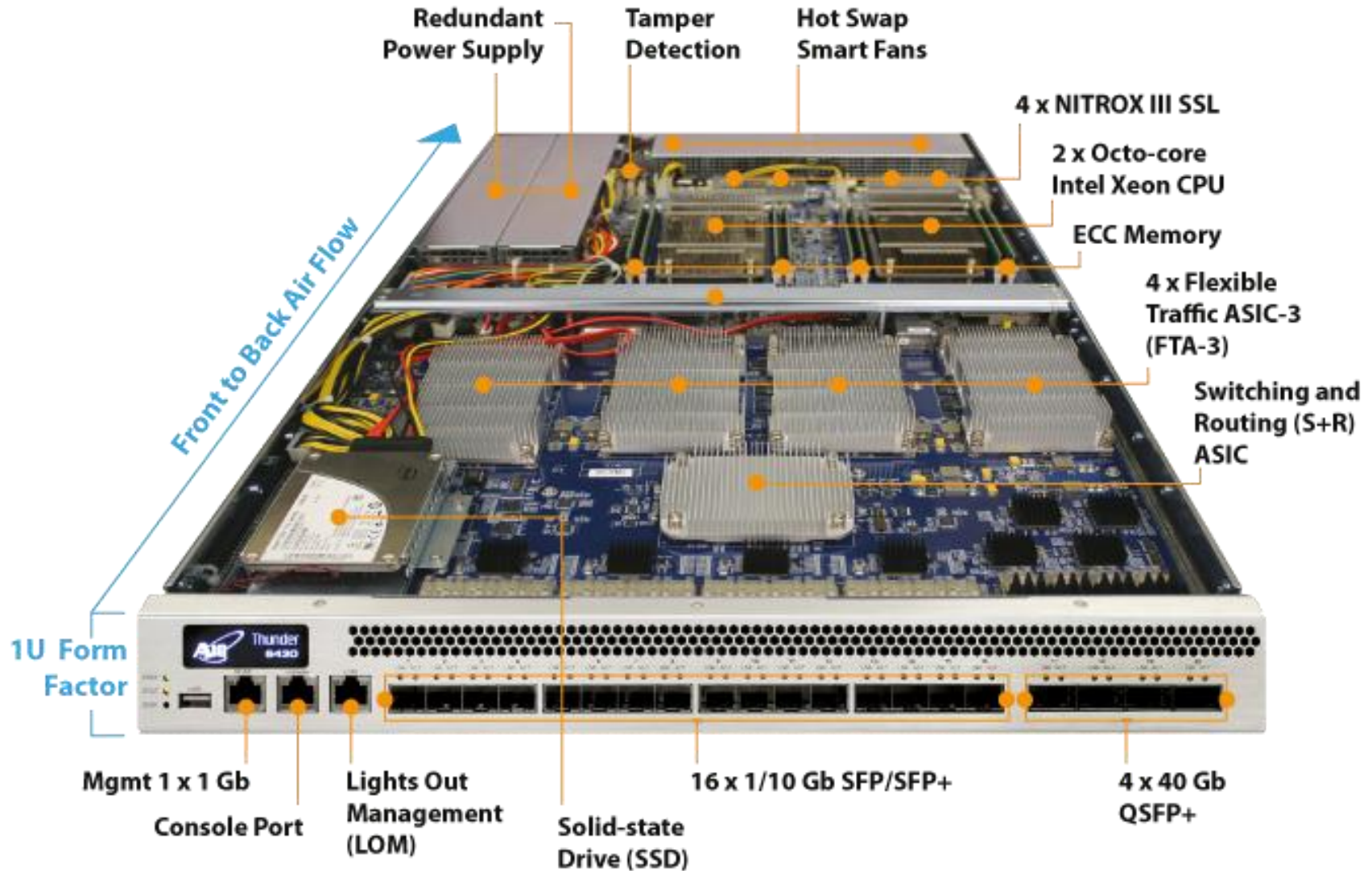
➤ AX Management Through IPv6

- ◆ Full native IPv6 and IPv4 management and feature support
- ◆ SSH, HTTP, HTTPS, SCP, and SFTP support

AX and Thunder Series Appliance Models



Thunder 6430S – 150 Gbps, 1 RU



Thunder Advantage: 5430S, 6430 and 6430S



Smart design for optimal performance

- FPGA and ASIC technology coupled with fast Intel Xeon CPUs
- Fastest CPS, Throughput, DDoS SYN Flood protection and SSL CPS per RU
- aVCS for 8x scale

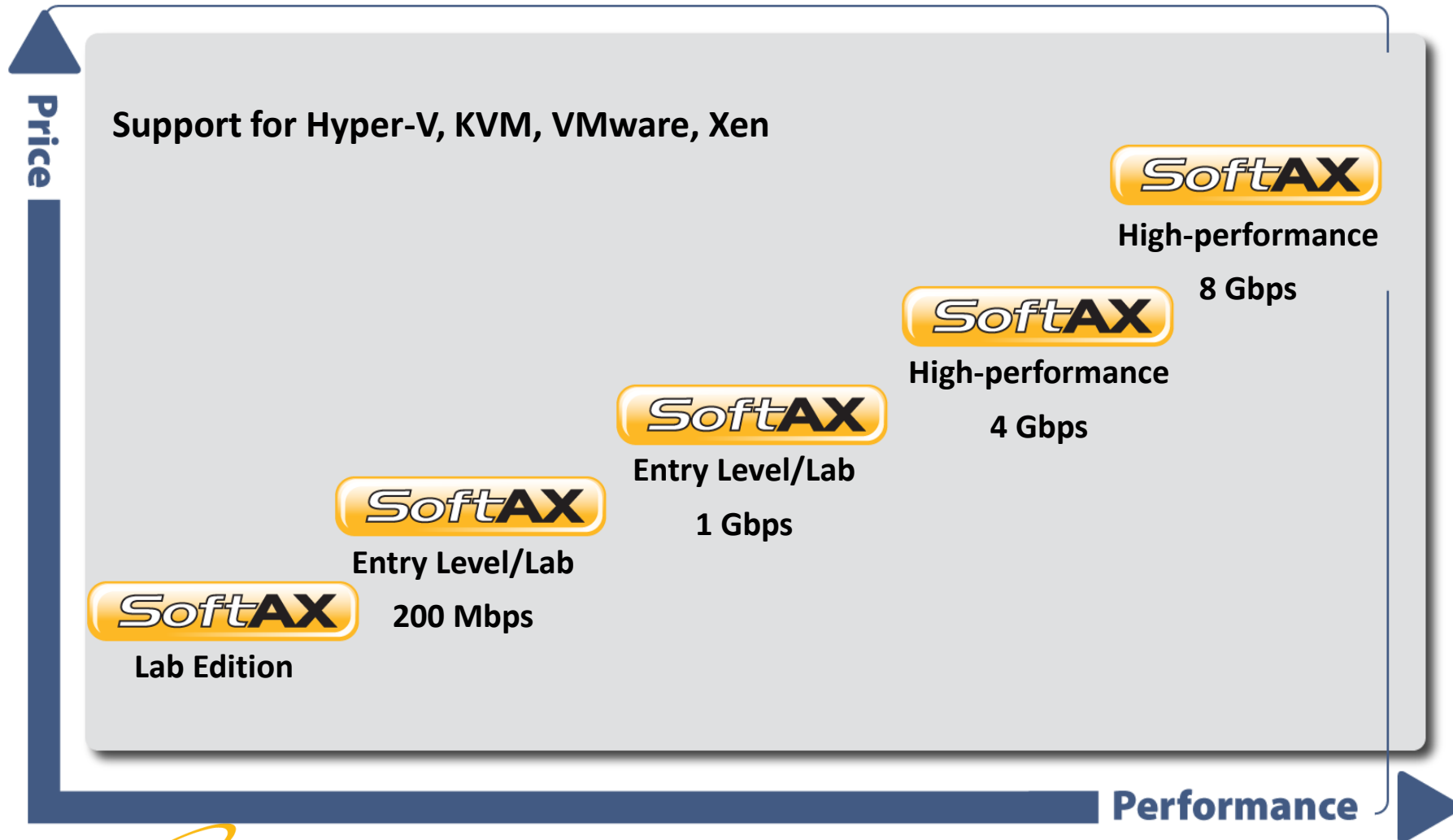
Delivering maximum uptime

- No moving parts, except hot swap smart fans
- No inaccessible fans or HDDs
- Lights out management/IPMI

Green, data center friendly design

- Highly compact, 1 RU design
- 80 Plus “Platinum” efficiency RPS
- Highest performance per Watt

64-bit SoftAX Virtual Appliances




A10 Networks Differentiation/Advantages

- **Industry-leading and mature implementation**
 - ◆ Proven interoperability, flexible deployment
 - ◆ Numerous live production deployments
 - ◆ Significant marquee customers
 - ◆ Rapid adoption of future CGN enhancements
- **High performance**
 - ◆ Very high session establishment rate
 - ◆ Large number of concurrent sessions
 - ◆ Very high CGN processing performance per second & throughput
- **“Green” form factor**
 - ◆ 1U with least power consumption
- **Price/performance advantage**
 - ◆ All-inclusive features (no licenses)



Competitive Comparison (CGN/LSN)*

| | A10 AX 3530  | Alcatel SR7750 | Cisco CRS-1 | Cisco ASR9K | Juniper SRX | Juniper MX | Huawei NE40E |
|--|--|-------------------|----------------|----------------|----------------|---------------|-----------------|
| Bandwidth | 115 Gbps | 10 Gbps | 10 Gbps | 10 Gbps | 120 Gbps | 19 Gbps | 20 Gbps |
| New Connections Per Second | 1.1 Million | 64K | 1 Million | 1 Million | 350K | 800K | 300K |
| Concurrent Connections | 256M | 6M | 20M | 20M | 10M | 10M | 6M |
| Subscribers Per Blade (Bandwidth) | 143.7K | 12.5K | 25K | 25K | 150K | 24K | 25K |
| Subscribers Per Blade (Concurrent Connections) | 1.28 Million | 30K | 50K | 50K | 50K | 50K | 30K |

*All numbers based on best available data, and should serve as a guide only. Numbers from any vendor may change at any time.

Thank You



Any App



Any Cloud



Any Size

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