Soluciones para una transición a IP6

April 2013

A10 Networks Company Overview

- Flagship product: AX Series

- Lee Chen – founder/CEO

- HQ in San Jose, California

- 350+ employees worldwide

- Profitable

- #1 fastest growing private Computer Hardware company in North America

- 2nd fastest growing private company in Silicon Valley

Application Delivery and Load Balancing Overview

- Site Always Available
  - Faster Response

Users

Backup Datacenter

- High Volume Traffic & Unpredictable Spikes
- Disparate Devices & Protocols

External Network

Primary Datacenter

- Application Delivery Controller

ADC

- Automatic Failover
- Datacenter Redundancy & Disaster Recovery

- Efficient Distribution
- Reduced Connections
  - Normalized Traffic

Internal Network

- CPU & Network Off-load
  - Easier Management
  - Connection Efficiency

Servers

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3

IPv6 Solutions

- **No standard compatibility**

- **Different requirements**
  - ◆ Home
  - ◆ Enterprise
  - ◆ Service Provider

- **"IPv4 Legacy Networks"**

- **Each solution has its own pros & cons**

IPv6 Migration Gateway

LSN
T64/DNS64
DS-Lite   6rd
6to4-PMT
SLB-PT

IPv4 Clients
IPv6 Clients
IPv4 Network
IPv6 Network
Internet
AX Series
No access
IPv4 Servers
IPv6 Servers

IPv6 Provider
IPv4 Provider
IPv6/v4 Provider

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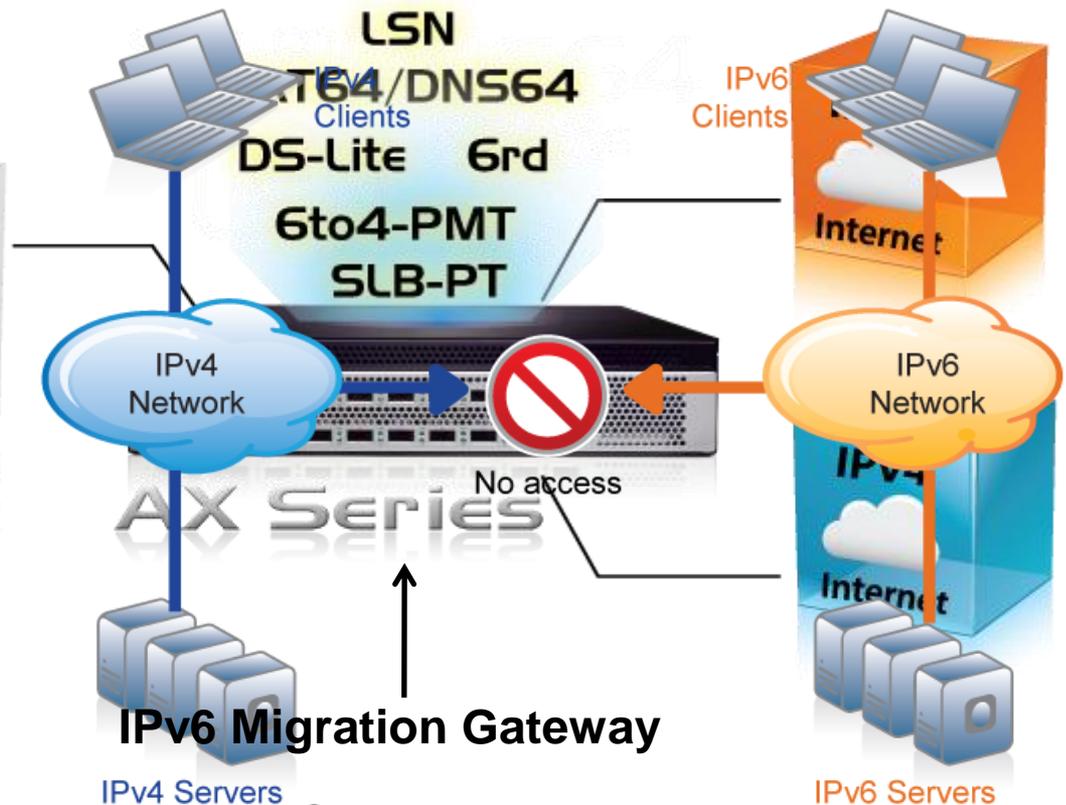
IPv6 Migration Techniques

Dual-Stack
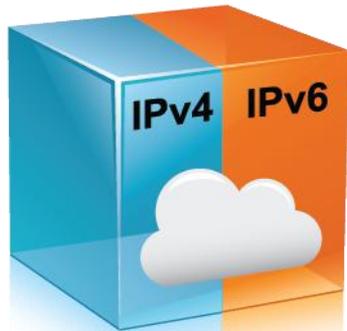
Encapsulation

Translation
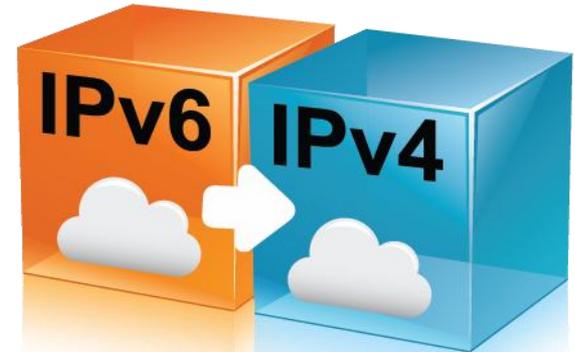
Server Load Balancing Protocol Translation (SLB-PT aka SLB-64)

➢ **Main interest:**
  - ◆ Enterprises
  - ◆ Content Providers

➢ **Usage:**
  - ◆ Looked into by many Enterprises / Content Providers and already deployed today

➢ **Goal:**
  - ◆ Offer IPv6 services quickly with minimal changes
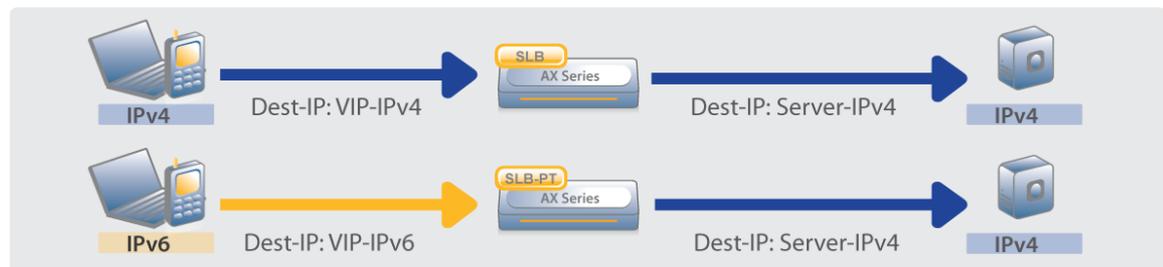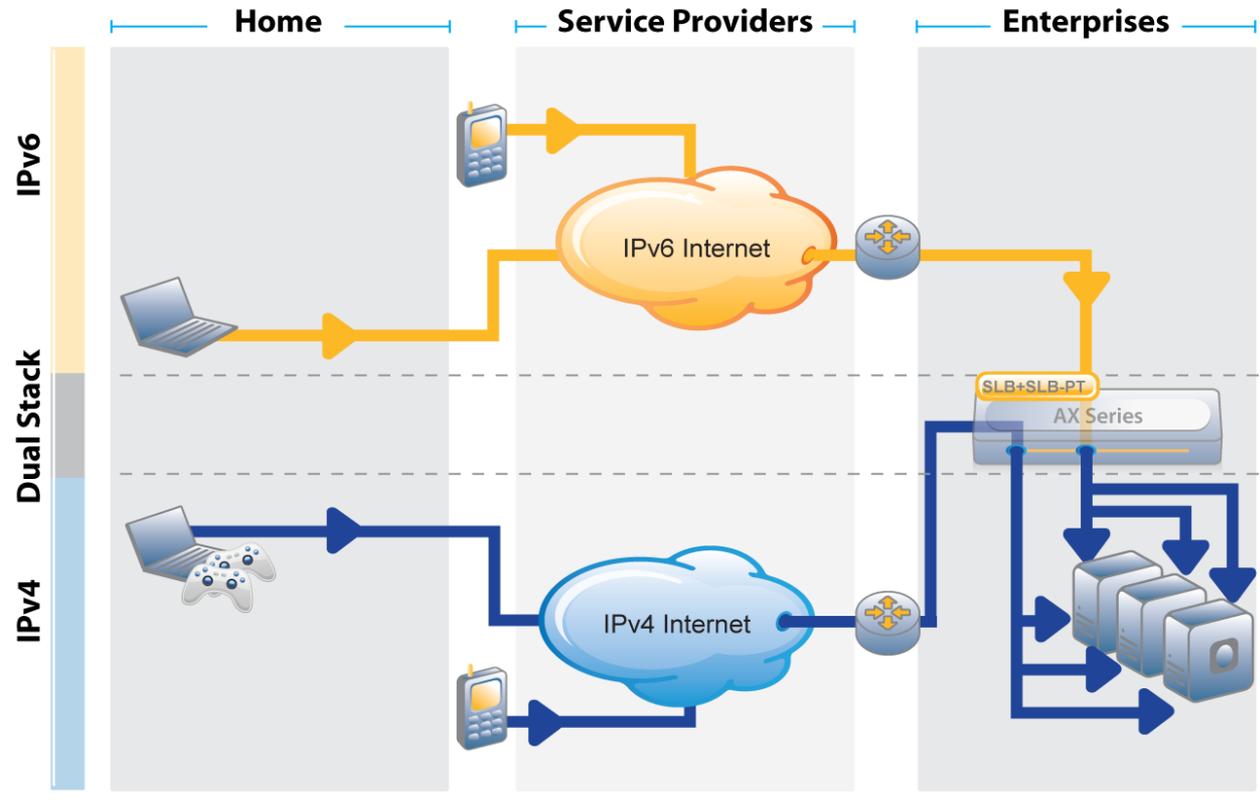
Large Scale NAT (LSN, aka CGN/NAT444)

➤ **Main SP interest:**

   ◆ ISPs

➤ **Usage:**

   ◆ Looked into/tested by many ISPs

➤ **Goal:**

   ➤ Resolve IPv4 exhaustion quickly with minimal changes

   ➤ Maximize IPv4 address capacity
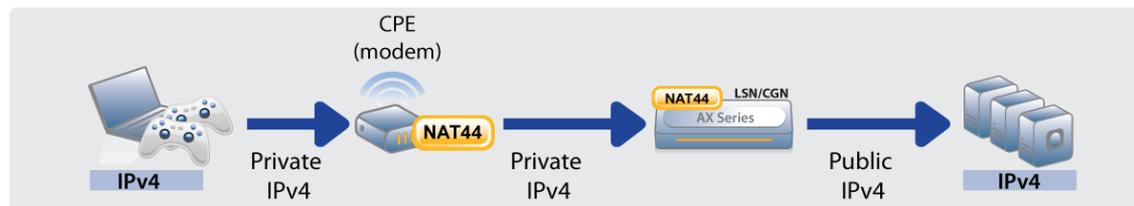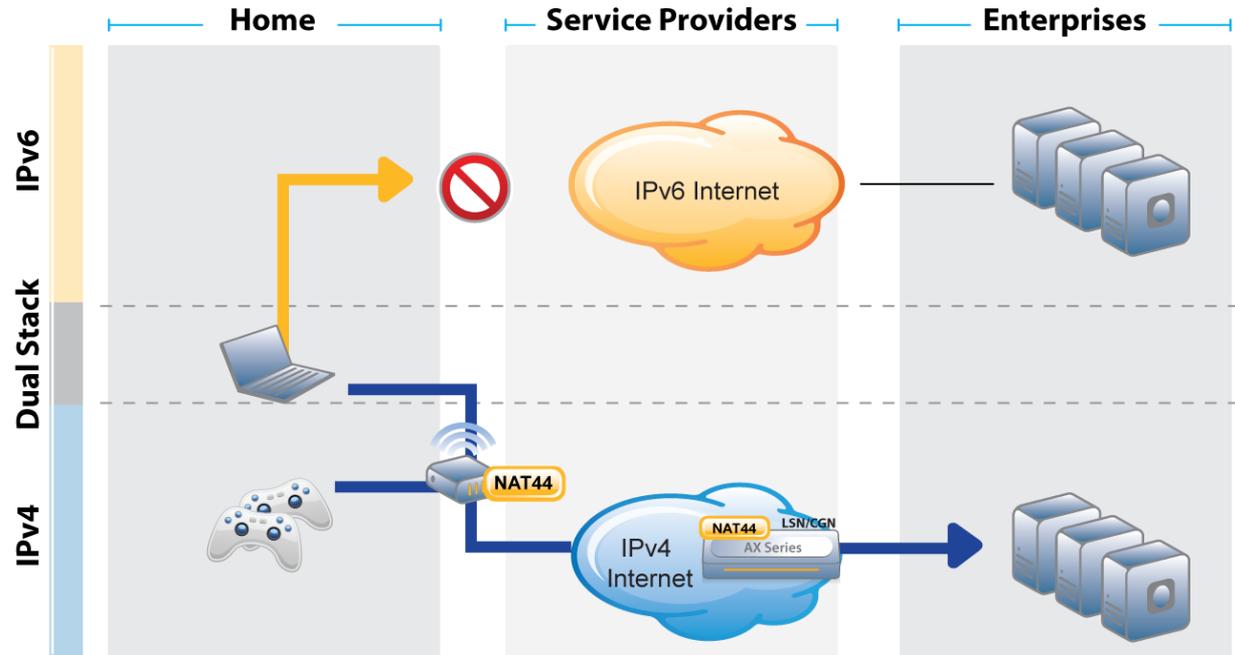
Note: LSN is also called "Carrier Grade NAT" (CGN) or NAT444.

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DS-Lite (Dual-Stack Lite) + NAT with LSN/CGN

➢ **Main SP interest:**

  ◆ ISPs

➢ **Usage:**

  ◆ Currently being evaluated by some ISPs

➢ **Goal:**

  ◆ Provide IPv4 service access to IPv4 clients and IPv6 service to IPv6 clients without having a dual-stack SP network

  ◆ IPv6 core network

Note: Some ISPs look at combining DS-Lite with DNS64/NAT64

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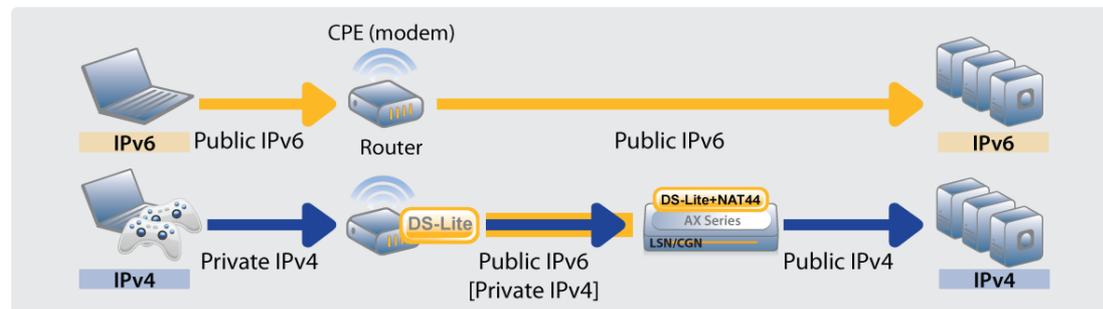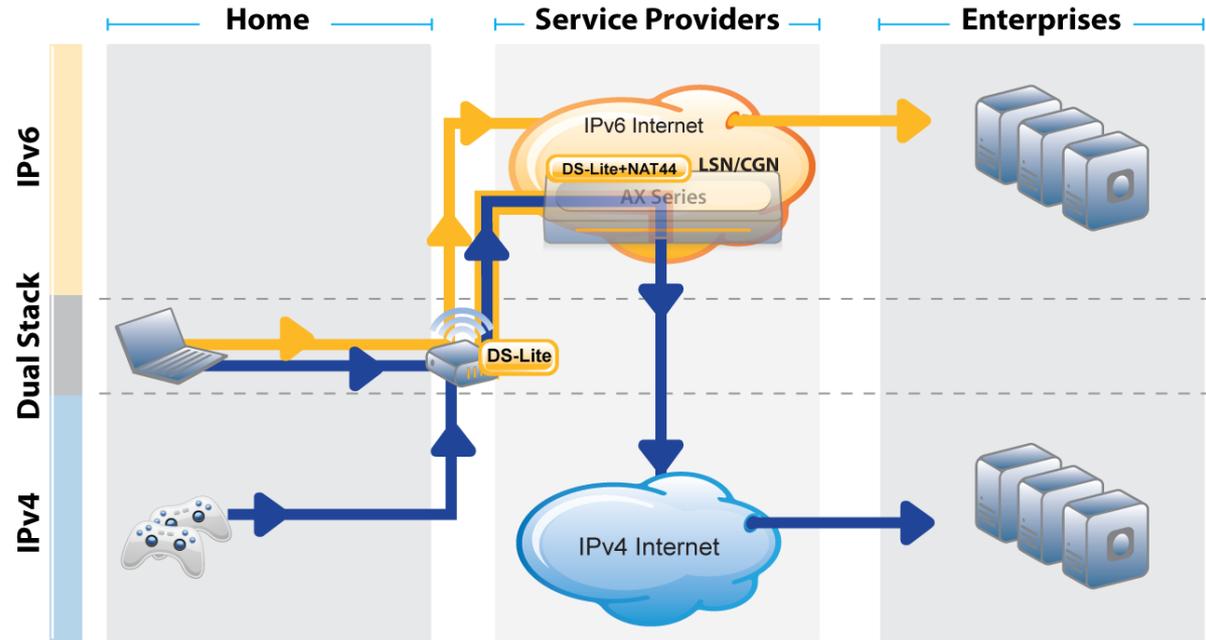
NAT64/DNS64

➤ **Main SP interest:**

  ◆ MNOs and ISPs

  ◆ Enterprises

➤ **Usage:**

  ◆ Looked into by many operators and enterprises, production deployments started

➤ **Goal:**

  ◆ Provide IPv4 content access to IPv6-only clients

  ◆ "Improves" IPv6, more content returned

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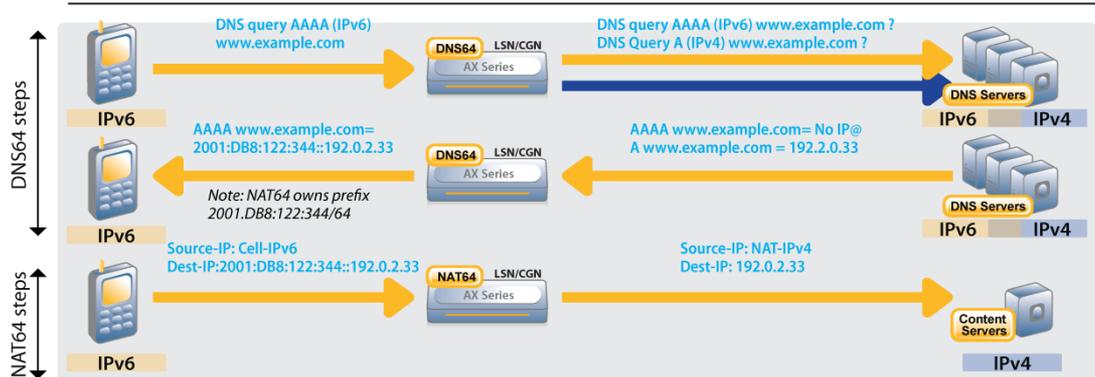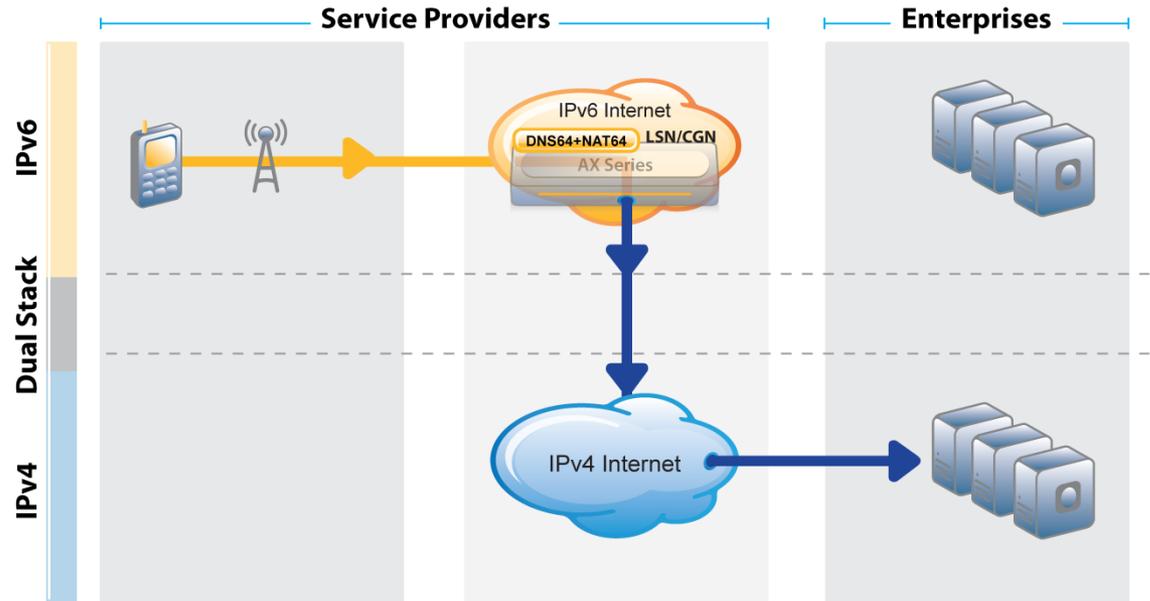
6rd (IPv6 Rapid Deployment)

> **Main SP interest:**
>   - ISPs

> **Usage:**
>   - Looked into/tested by some ISPs and deployed by a few

> **Goal:**
>   - Provide IPv6 service access before core Network IPv6 upgrade
>   - IPv4 core network

Note: Some ISPs look at combining 6rd with NAT444 + DNS64/NAT64
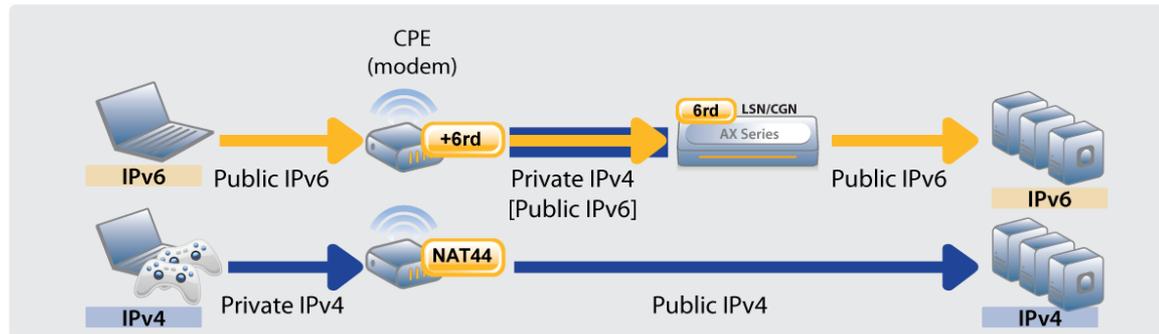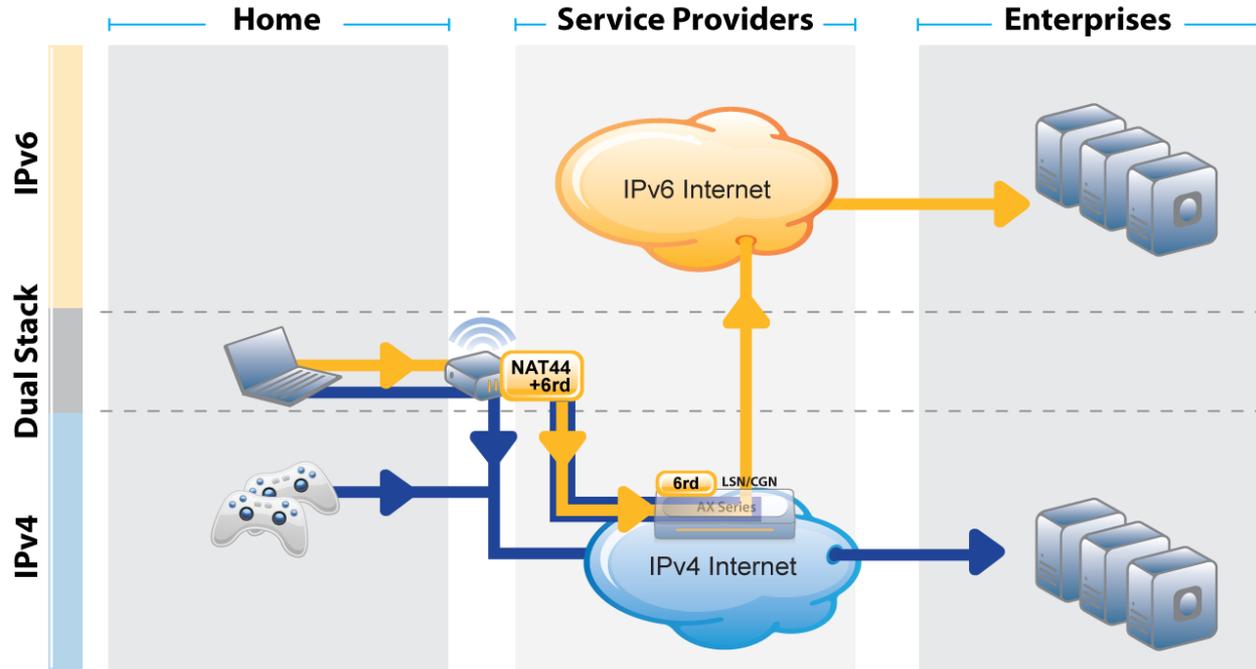
A10 IPv4-to-IPv6 Migration Advantages

➤ **Industry-leading and mature implementation**
- ◆ Interop shownet, evaluations, lab and field trials
- ◆ Multiple live production deployments
- ◆ Significant marquee customers
- ◆ Proven interoperability, flexible deployment

➤ **High performance**
- ◆ Very high session establishment rate
- ◆ Large number of concurrent sessions
- ◆ Very high NAT processing PPS & throughput

➤ **Ideal 'green' form factor**
- ◆ 1U/2U with least power consumption

➤ **Price/performance advantage**
- ◆ All-inclusive

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Advanced Core OS (ACOS)

> **Development started in June 2005**

> **Multi-core CPU, shared memory architecture**

> **64-bit scalability**

> **Efficient design**
>   - Power, memory, space & resource consumption

> **Scalable Symmetrical Multi-processing (SSMP)**

> **Flexible design**
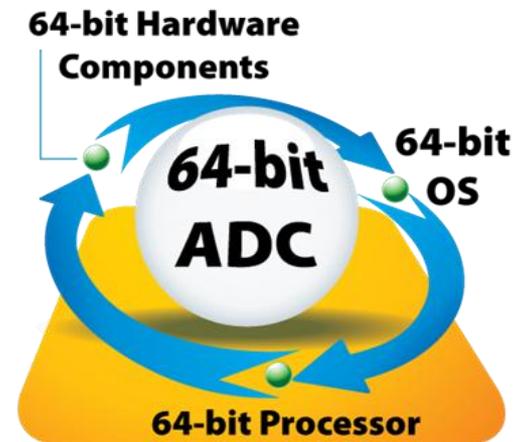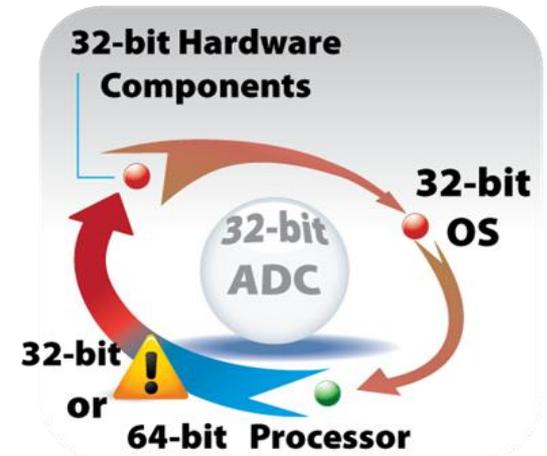
IPv6 (and IPv4) Advanced Traffic Management

➤ **ACOS platform recap**

  ◆ Application Delivery (ADC) and Server load balancing

  ◆ IPv6 migration and IPv4 preservation

  ◆ Widest choice of virtualization solutions

➤ **Recommended Resources**

  ◆ eLearning: A10 Quick Classes - Deploying an IPv6-ready Website for Your Enterprise (#3)

  ◆ White Paper - The End of IPv4? Migration paths to IPv6

  ◆ Case Study: A10 Networks (SLB-PT)

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Thank You
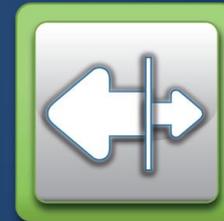
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