



Enterprise MPLS Architecture

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Biography



Kenneth R. Owens Jr. is currently the Communications Architect at AG Edwards & Sons, Inc. He has made significant contributions in the network and security architecture and strategy. Prior to AG Edwards, Mr. Owens spent 2 years as a Technical Architect at Edward Jones Investments. Prior to Jones, Mr. Owens spent 10 years in Architecture and Design of Communications Systems and Components. He is a senior member of the Institute of Electrical and Electronic Engineers (IEEE).

Topics



- Review: Enterprise MPLS-
Strategic or Reactive
 - Enterprise MPLS Architecture
 - Deployment Strategy
 - Case Study: IP Telephony
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MPLS in the Enterprise Strategy



Enterprise communication infrastructures are under increasing pressures

- Support strategic business requirements for enhanced application performance
- Convergence of real-time applications (voice, video, SAN) over legacy IP infrastructures

Enterprise communication infrastructures must be application-aware and dynamic

Key Strategic Considerations



- 1) Financial benefit from “any-to-any” wide area network that uses “distance-independent” pricing
 - 2) Enables virtualization of Data Centers by leveraging the inherent flexibility of MPLS Traffic Engineering
 - 3) Enabling dynamic growth and agility to support future business services and applications
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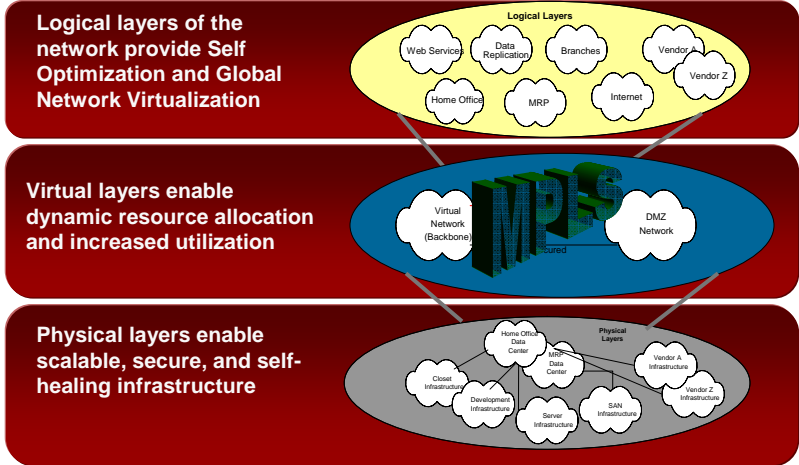
Enterprise MPLS Architecture



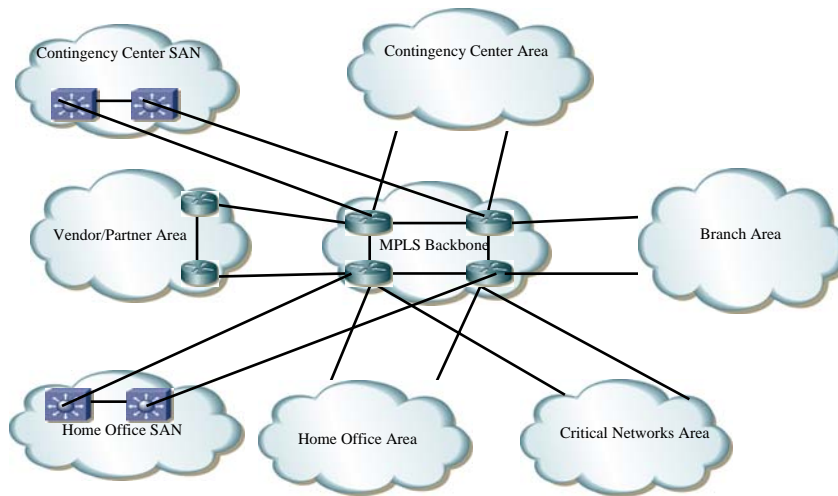
- Holistic Enterprise Architecture
 - Enterprise Architecture is business-driven and evolutionary. It satisfies the **current needs of the business** while **anticipating future needs**. Enterprise architecture must communicate an enterprise-shared vision, architecture principles, a system of governance, and sound processes for disciplined architectural analysis and decision-making.
 - Architecture Principles of Interest
 - Security
 - Information
 - Real-time
 - Productivity
 - Agility
 - Quality
 - Value
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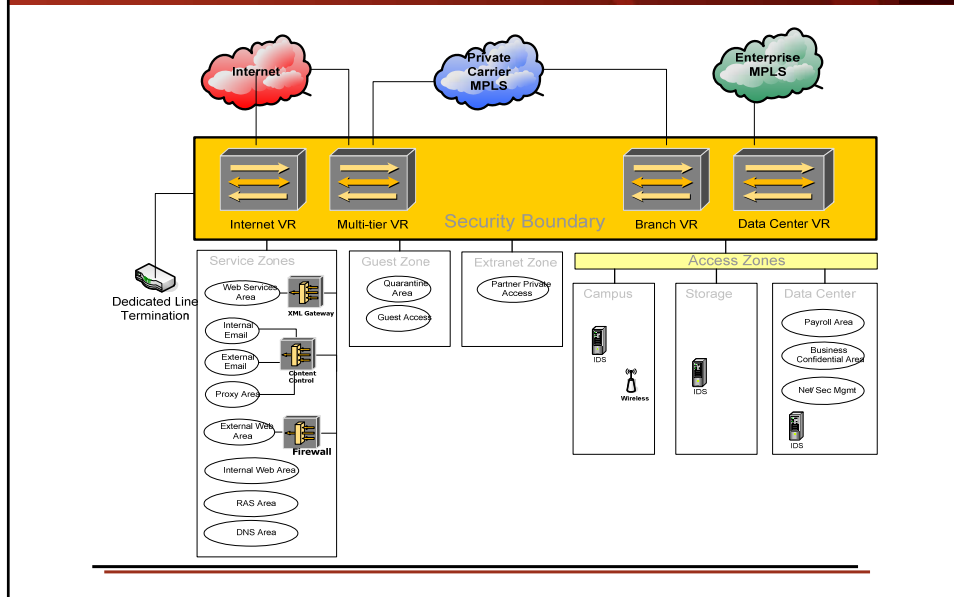
Enterprise MPLS Architecture



Enterprise MPLS Architecture – High Level



Enterprise MPLS Architecture – Backbone



Deployment Strategy



- Develop Top Down Strategy – It's all about the Business Goals
- Simplify and aggregate WAN interfaces
- Determine enterprise MPLS strategy

The Link Between Business Goals and Network Infrastructure



- Enterprise applications drive infrastructure
- Network Approach: Start application down vs. from the network up
 - What are the business objectives?
 - What applications/services accomplish the business objectives?
 - What is the priority of those applications/services to the business?
 - How will these applications/services perform on communications infrastructure



Business Goals



Enterprise Applications



Network Infrastructure



Simplify and aggregate WAN interfaces



“Service providers continue to expand their core backbone networks as demand for more bandwidth per subscriber continues and network consolidation to Internet Protocol/multiprotocol label switching (IP/MPLS) continues. Service providers are deploying new services at the network edge, such as virtual private networks (VPNs), video on demand (VoD), voice over IP (VoIP), gaming and IPTV services, and they are bundling services to capture customer loyalty.”

– Gartner Group

- Changes the mindset
 - Provisioning WAN circuits based on the locality of applications and capacity planning
 - Enables network engineers to focus on the prioritizing of business applications and integrating new/additional services
- MPLS WAN model will lift the burden from Network Engineering for design, cost, and complexity of Vendor Connectivity, Remote Access, and growth of the firm.

Determine enterprise MPLS strategy



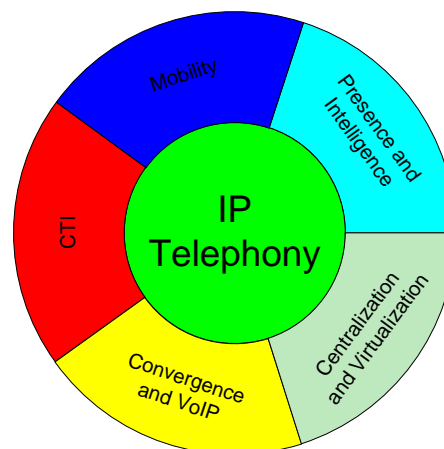
- 1) Understand the patterns for deployment of Applications and Services
 - ✓ IP Telephony
 - ✓ Real-time communications
 - ✓ Business Partners/ASPs
 - 2) Traffic Engineering?
 - 3) Modeling
 - 4) Testing
 - 5) Do not underestimate complexity of current environment
 - 6) Education
 - ✓ Engineering
 - ✓ Operations
 - ✓ Security
-

Case Study: IP Telephony



IP Telephony Defined:

- Presence and Intelligence
- Centralization and Virtualization
- Convergence and VoIP
- CTI
- Mobility





- Q & A

