Cisco IT Executive Presentation
Core Routing and Switching

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Produced by the Cisco on Cisco team within Cisco IT
Executive Summary
Cisco All Packet Summary

- Core Switch: Cisco Catalyst 6500 Series Switch
- Edge Switches: Cisco Catalyst 6500, 3750G Series Switches
- Access Switch: Cisco 6500, 4900 and 3750E Series Routers

- Core Router: Cisco Catalyst 6500 Series Router
  - Edge: Cisco 3845 Integrated Services Router
  - Edge: Cisco 3845 Multiservice Platform
  - Edge: Cisco 3800 and 6500 Series Routers
  - Console Server: Cisco 2800 and 3800 Series Routers

- WAN Access: Cisco 7200/7600 Series Router
  - OC-48/STM-16
  - OC-12/STM-4
  - OC-3/STM-1
  - DS-3 WAN backbone

- ISP Router: Cisco 12400 and 7200 Series Router
  - Service provider IP VPN network in Europe and emerging markets
  - OC-192 rings on large campus LANs

- 14 production / customer facing data centers
- Data Center - Nexus

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Cisco Data Centers

Total of 215,000 square feet of raised Data Center space at Cisco

Data Centers

- **Business Data Center**
- **Engineering R&D Data Center**
Latency Data Points between Data Center Locations

Primary DC locations:
- San Jose (SJC) <-> Research Triangle Park (RTP5): 85 ms
- San Jose (SJC) <-> Mountain View (MTV5): 2 ms
- San Jose (SJC) <-> Richardson (RCDN9): 53 ms
- Research Triangle Park (RTP5) <-> Richardson (RCDN9): 40 ms
- Richardson (RCDN9) <-> Richardson 2nd DC (new): not-to-exceed 1-2 ms

Latency to different continents:
- San Jose (SJC) <-> Bangalore (BGL11): 240 ms
- San Jose (SJC) <-> Amsterdam (AMS3): 172 ms
- Richardson (RCDN9) <-> Bangalore (BGL11): 292 ms
- Richardson (RCDN9) <-> Amsterdam (AMS3): 128 ms

Remote office latency extremes:
- San Jose (SJC) <-> Saudi Arabai (JED01): 400 ms
- San Jose (SJC) <-> Nairobi (NBO03): 740 ms
Campus

- Gigabit Ethernet and 10 Gigabit Ethernet in campus core; 10/100/1000, Gigabit Ethernet to desktop
- Cisco Catalyst 6500 Series as an edge–to–core platform using both switching and routing capability
- Campus network design uses duplexed equipment and circuits to avoid single point of failure
Europe and Emerging Markets Intelligent Network Infrastructure

**Transport**
- Any-to-any
- Provides security, QOS, multicast, and resiliency

**Services**
- Enables voice, video, and peering applications
- Access to new services—IP—PSTN, Internet
Routing and Switching – Past, Present and Future

**Past**
- Spoke-and-hub WAN architecture
- Beginning of IP convergence
- All-PBX infrastructure
- Early WLAN deployment
- Limited storage network

**Present**
- Converged voice, video, and data network
- Bandwidth upgrades and Equipment upgrades to support 456 TelePresence sites
- WAAS/ACNS at every site
- AVS/ACE at every data center
- Network as a platform for enabling globalization, collaboration and virtualization

**Future**
- Nexus deployed for 10 gig I/O consolidation
Core Routing & Switching – Business Value Snapshot

**Productivity**
- Latency minimized through “shortest path” any-to-any topology, enhancing end-user experience

**Quality/End User Experience**
- IP VPN = 1 connection to network providing flexible office adds and moves

**Cost Savings/Avoidance**
- IP VPN = 4X bandwidth at no extra cost
- International VoIP calling
- Overall cost reduction of 23% through modernized IP network
- Highly adaptive routing and switching with high-value software platform optimize long-term network business value and cost-effectively manage growth
To learn more about real-world Cisco IT deployments, visit www.cisco.com/go/ciscoit