

Comcast Presentation for IEEE ComSoc

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Agenda

- **Infrastructure**
- **Xfinity (Residential)**
- **Business Class (SMB)**
- **Business Class Ethernet (Enterprise)**
- **Questions**

Infrastructure

- **Nationwide Backbone**
 - DWDM based - 40 Gbps transport - 100 Gbps in test
- **Regional Backbone (CRAN)**
 - Dual-redundant Fiber ring
 - 10 Gbps transport – 40 Gbps in development/test
 - Fiber network for Cable and Ethernet is separate
- **HFC (Hybrid Fiber Coax) model**
 - Fiber to the Node (FTTN), Coax to the home
- **DOCSIS 3.0**
 - Increased use of RF spectrums
 - Laying foundation for Ethernet over DOCSIS

Xfinity (Residential)

- **Data**
 - 50/10 Mbps of Internet access to the Home
 - Dynamic IP addresses
- **Video**
 - Increasing HD content
 - Instant On-Demand
- **Voice**
 - Feature rich, high quality IP-based Voice
 - Caller ID on Phone and TV
 - Online Voicemail
- **Triple Play**
 - Data, Video and Voice in an affordable package

Developments with Xfinity

■ Xfinity TV Application

- Watch OnDemand on iPad whenever you can access the Internet (4G or 802.11)
- Remote Tune – Change channels, send OnDemand content from iPad to TV

■ Xfinity Mobile App

- Mobile app available on iPad, iPhone, Android OS
- Remote DVR – Schedule recordings
- Voice – View missed calls, Call Forwarding, Voicemail
- Email and Voicemail integration

Developments with Xfinity

- **Xfinity Internet 2go**
 - 3G/4G wireless internet
 - Seattle, Atlanta, Philadelphia, Portland & Chicago
 - Coming to Boston and Houston
- **Xfinity Signature Support**
 - <http://xfinity.com/signaturesupport>
 - 24/7 Remote or Onsite, US-based techs
 - Maintenance, Troubleshooting and Repair
- **Xfinity Home Security**
 - <http://comcast.com/homesecurity>
 - 24/7 Monitoring
 - Remote Disarm, Climate Control, Lighting Control

Business Class Cable (SMB)

- **Data**

- 100/10Mbps Internet access
- Static IP addresses

- **Video**

- Public and Private view
- Packages tailored to Business customers

- **Voice**

- Business Class Voice - Analog interface up to 24 lines
- Business Class Voice – PRI interface up to 23 trunks

Business Class Ethernet (Enterprise)

- **Internet Access**

- Ethernet Dedicated Internet (EDI), effectively a point-to-point right into the Comcast National Backbone

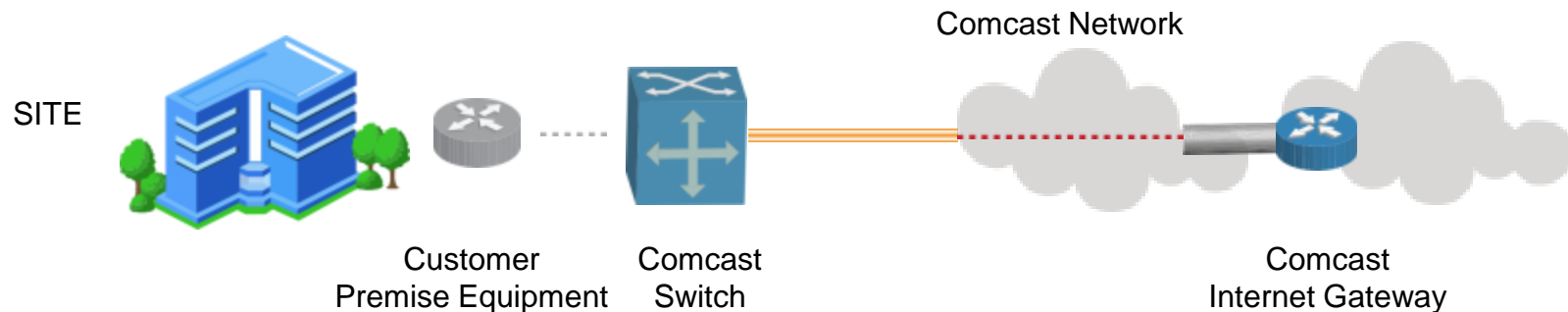
- **Layer 2 Ethernet Services**

- Ethernet Private Line (EPL)
- Ethernet Virtual Private Line (EVPL)
- Ethernet Network Service (ENS)



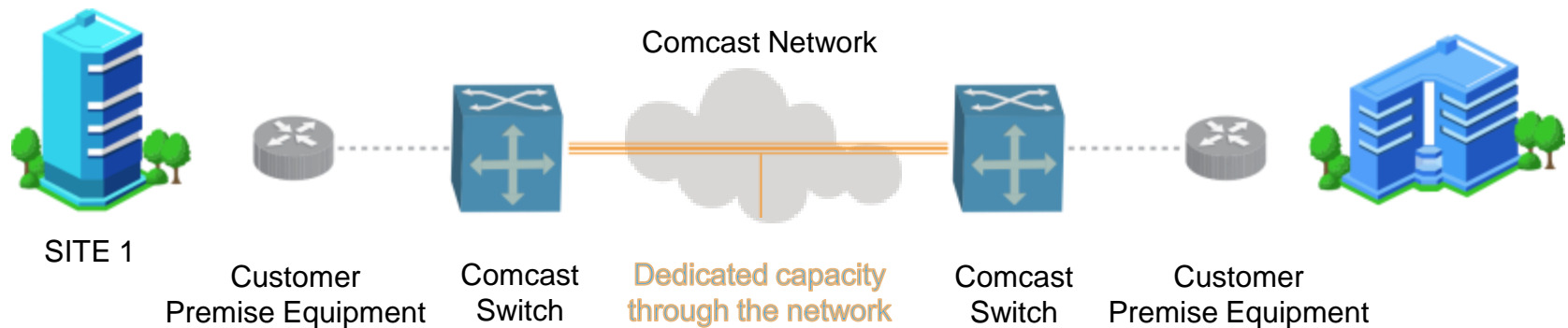
Ethernet Dedicated Internet (EDI)

- **Dedicated Internet Access (DIA)**
- **IPv6 ready**
- **BGPv4 supported**
- **Can have as many IPs as you can justify**



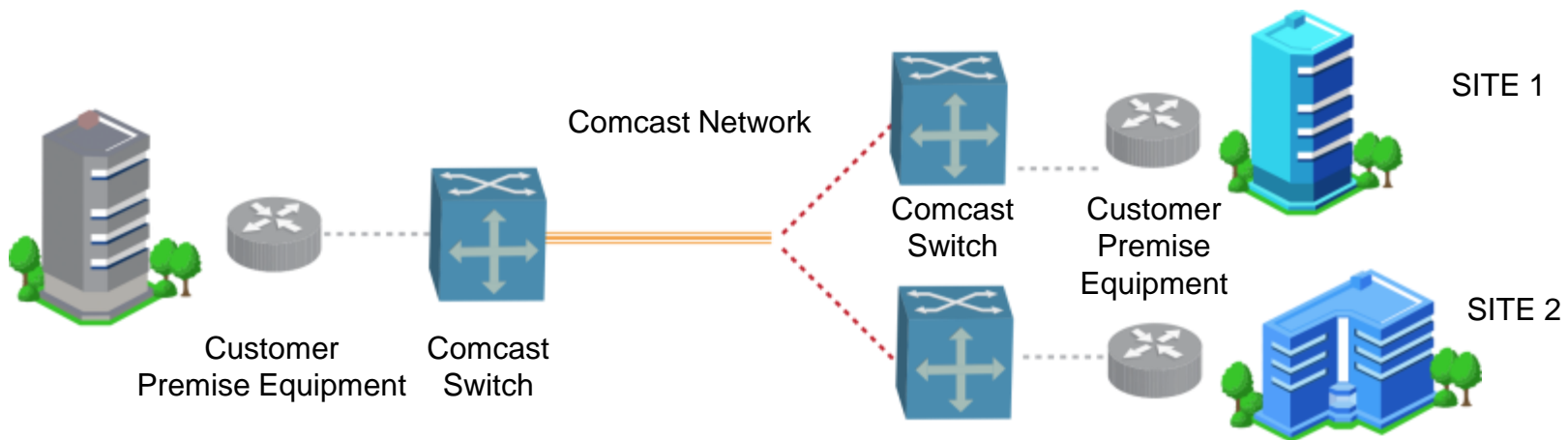
Ethernet Private Line (EPL)

- Point-to-point (MEF E-Line)
- Secure data transfer between two sites
- Perfect for connection to a Data Center



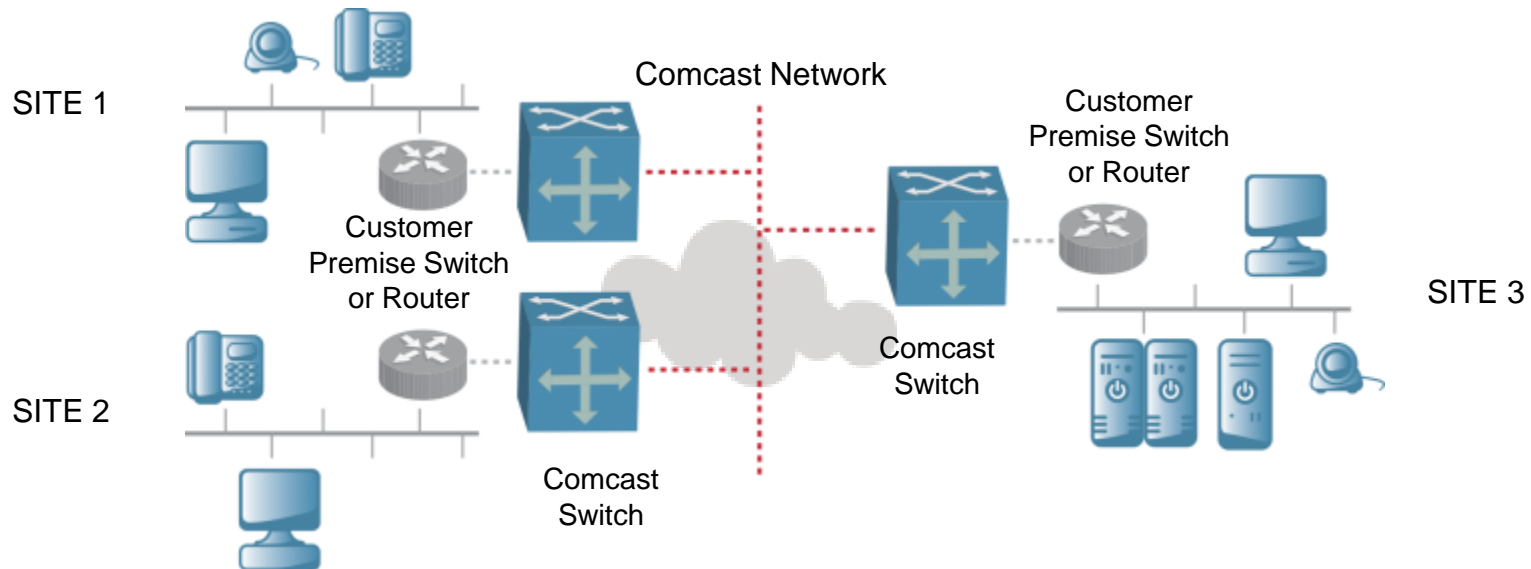
Ethernet Virtual Private Line (EVPL)

- **Point-to-Multipoint (MEF E-Tree)**
- **Multiple circuits aggregated to one point**
- **Comcast controlled VLANs**
- **No Broadcast or Multicast limitations**



Ethernet Network Service (ENS)

- Multipoint-to-Multipoint (MEF E-LAN)
- Customer controlled VLANs
- Like having a virtual switch in the Cloud



Business Class Ethernet (Enterprise)

- **Fiber to the Premise**
- **Flexibility**
 - All services capable of up to 10 Gbps bandwidth
 - Layer 2 services include options for provider VLAN based managed CoS (Basic, Priority, Premium)
- **Core powered by Juniper (MX960)**
- **Customer equipment by Ciena and Juniper**
- **Handoff types**
 - Single Mode fiber
 - Multi-Mode fiber
 - Copper RJ45 handoff



Future Developments with Business Class

- **Interstate “Long Haul”**
- **Ethernet over DOCSIS**
 - Layer 2 services over Coax
- **Managed Business Class Voice**
 - Broadsoft Broadworks Softswitch
 - Extremely feature rich and flexible
 - Best of class IP phones (Polycom)
- **More Business Class Trunks**
 - Ethernet interface for SIP trunks on Coax
 - Analog lines, PRI and SIP trunks over Fiber

Comparison of Cable and Metro E network

■ Cable

- Fiber to the node, then coax to the prem
- Bandwidth limitations based on Coax medium and DOCSIS version
- Shared bandwidth per node
- Widely available infrastructure

■ Metro E

- Fiber all the way into IDF/Telco Room
- Bandwidth nearly unlimited thanks to Fiber medium and Ethernet specification
- Dedicated bandwidth, CWDM or DWDM transport
- Purpose-built infrastructure
- Instrumental for Cell Backhaul and 4G implementations

Questions

