



Propuesta de Migracion Red CUDI

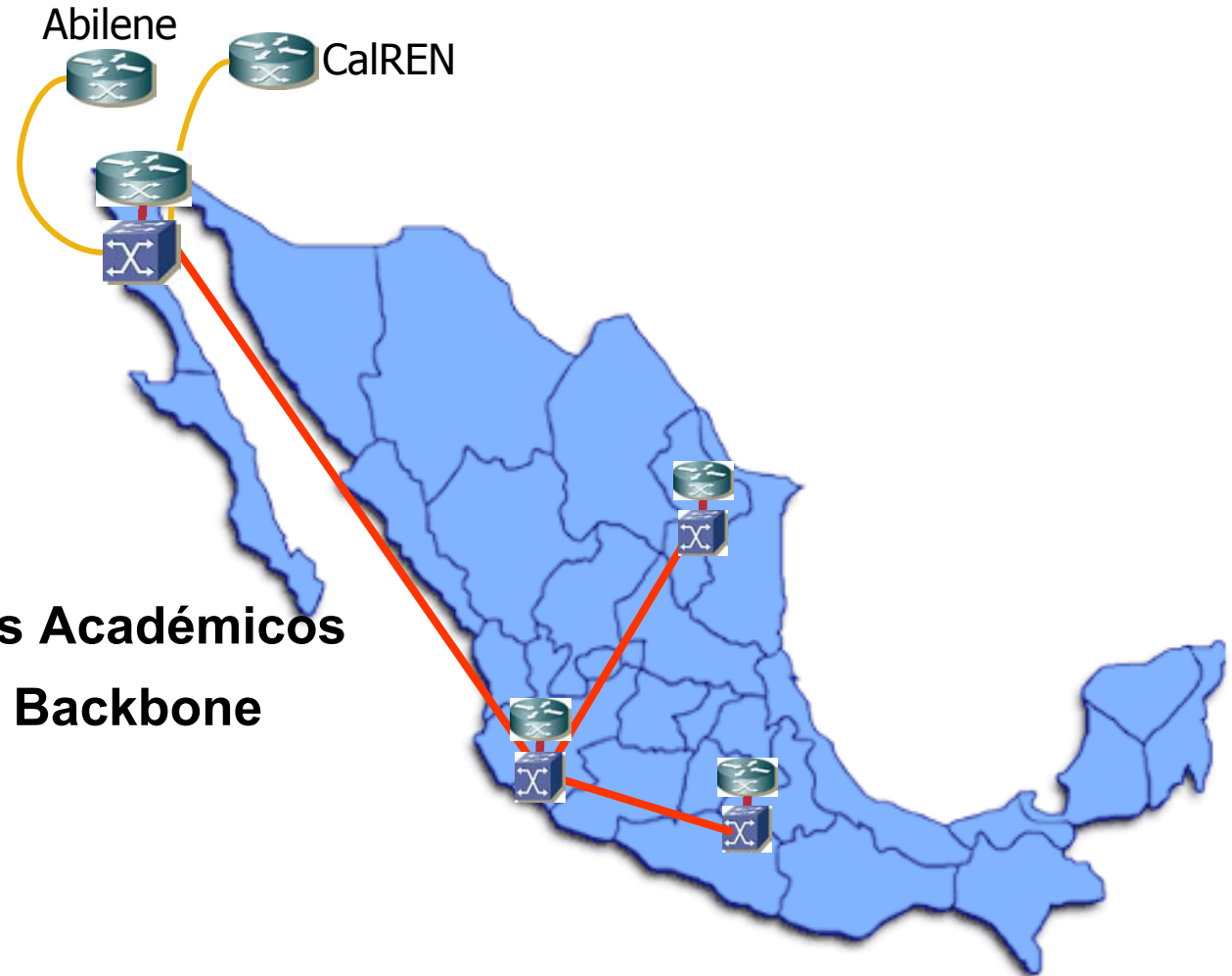
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SE Service Providers
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Abril, 2006

EVOLUCION RED CUDI



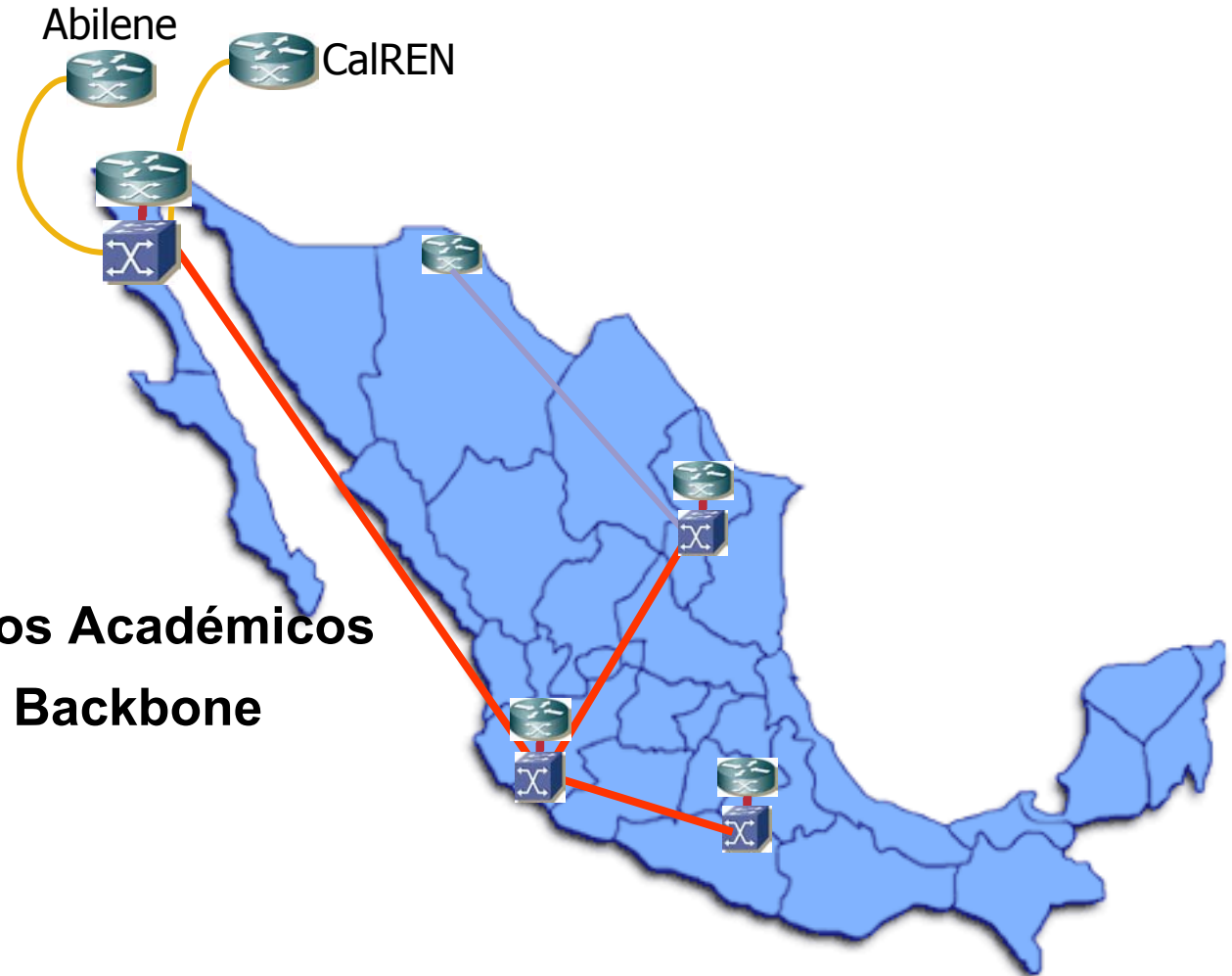
Evolución

- Año: 2000
- 9 Asociados Académicos
- 4 Nodos de Backbone



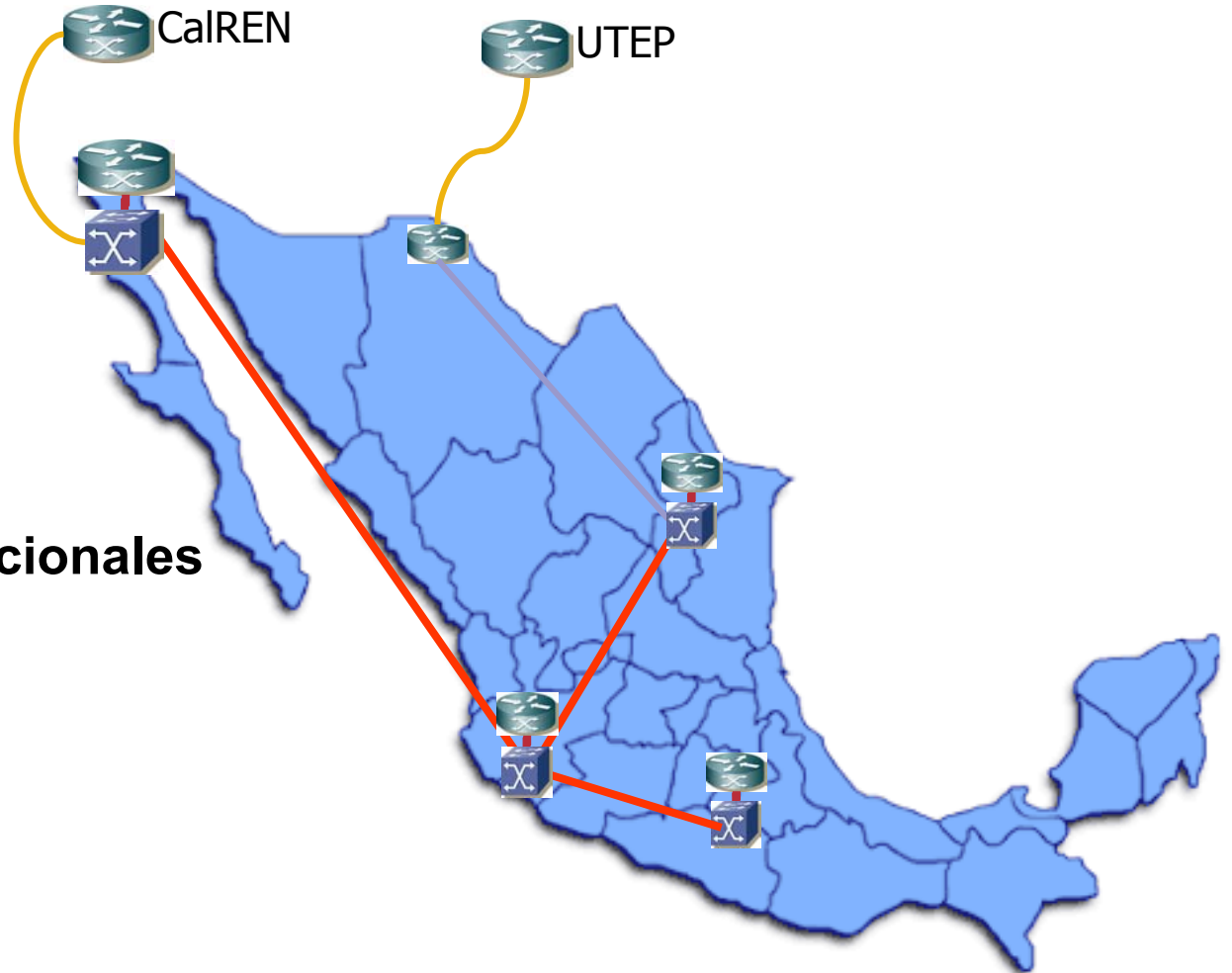
Evolución

- Año: 2002
- 16 Asociados Académicos
- 5 Nodos de Backbone



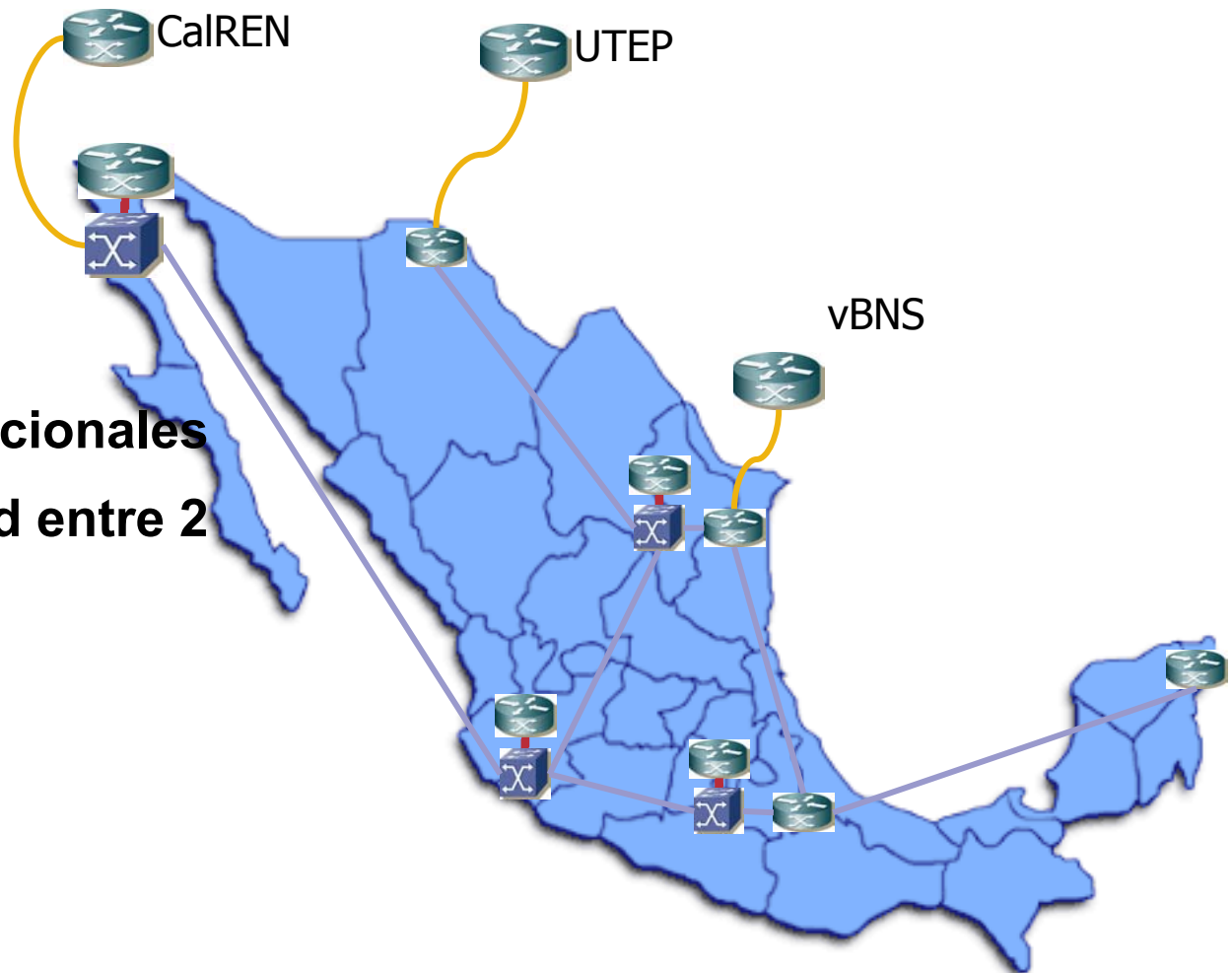
Evolución

- Año: 2003
- Redundancia
2 salidas internacionales



Evolución

- Año: 2004
- 3 salidas internacionales
- Interconectividad entre 2 proveedores



RED ACTUAL CUDI

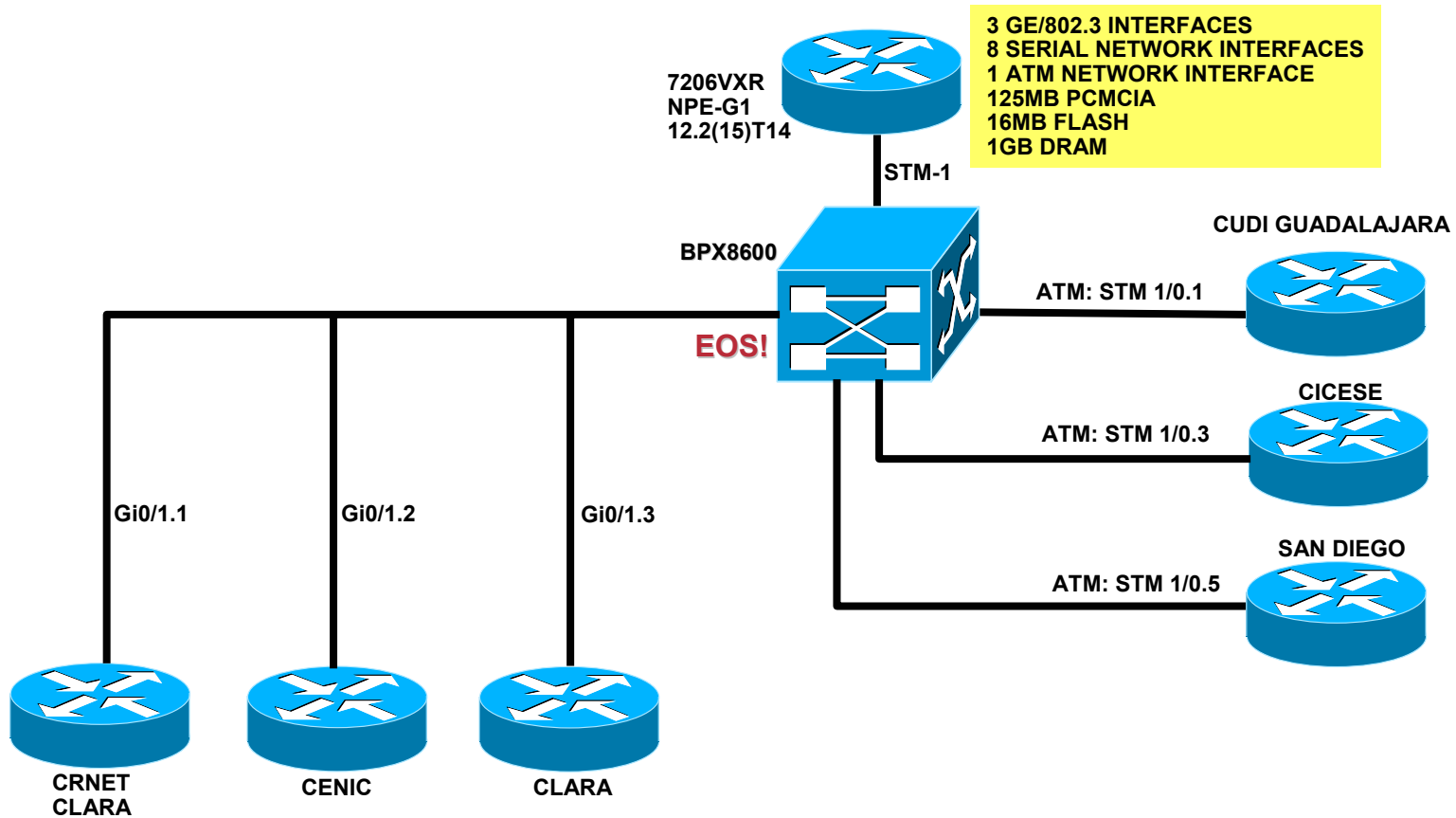


Backbone de la red CUDI

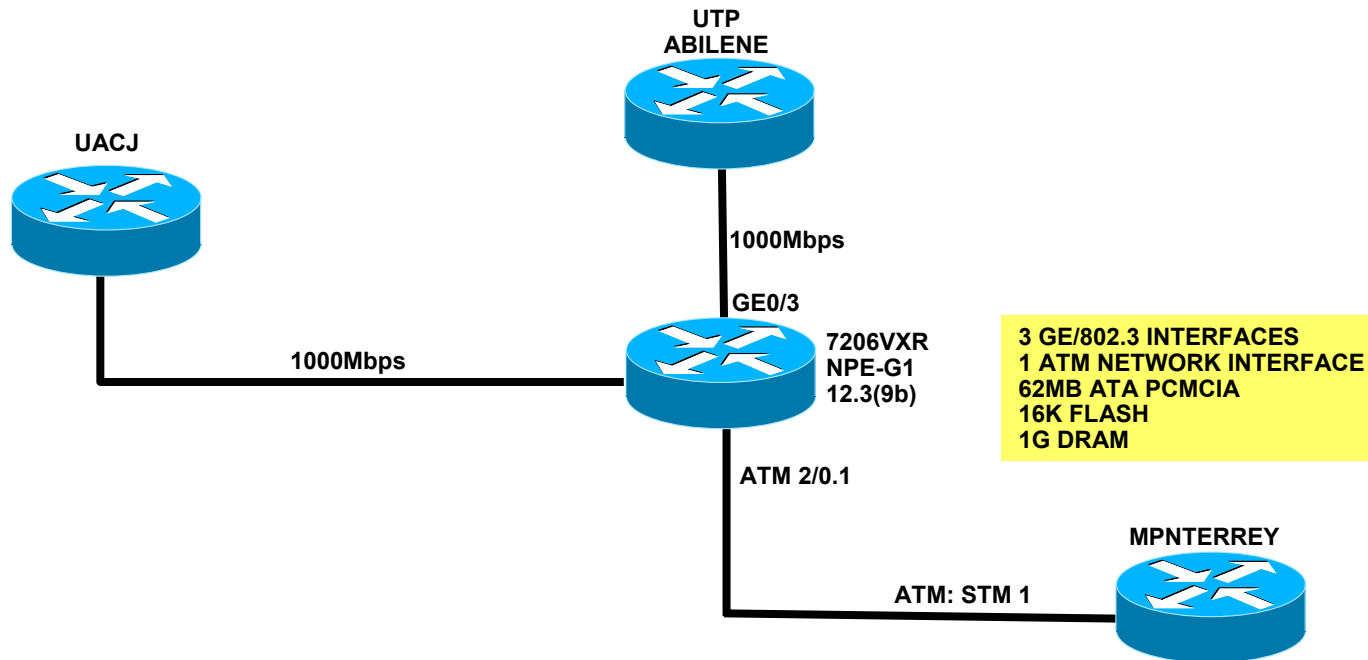
Conectividad



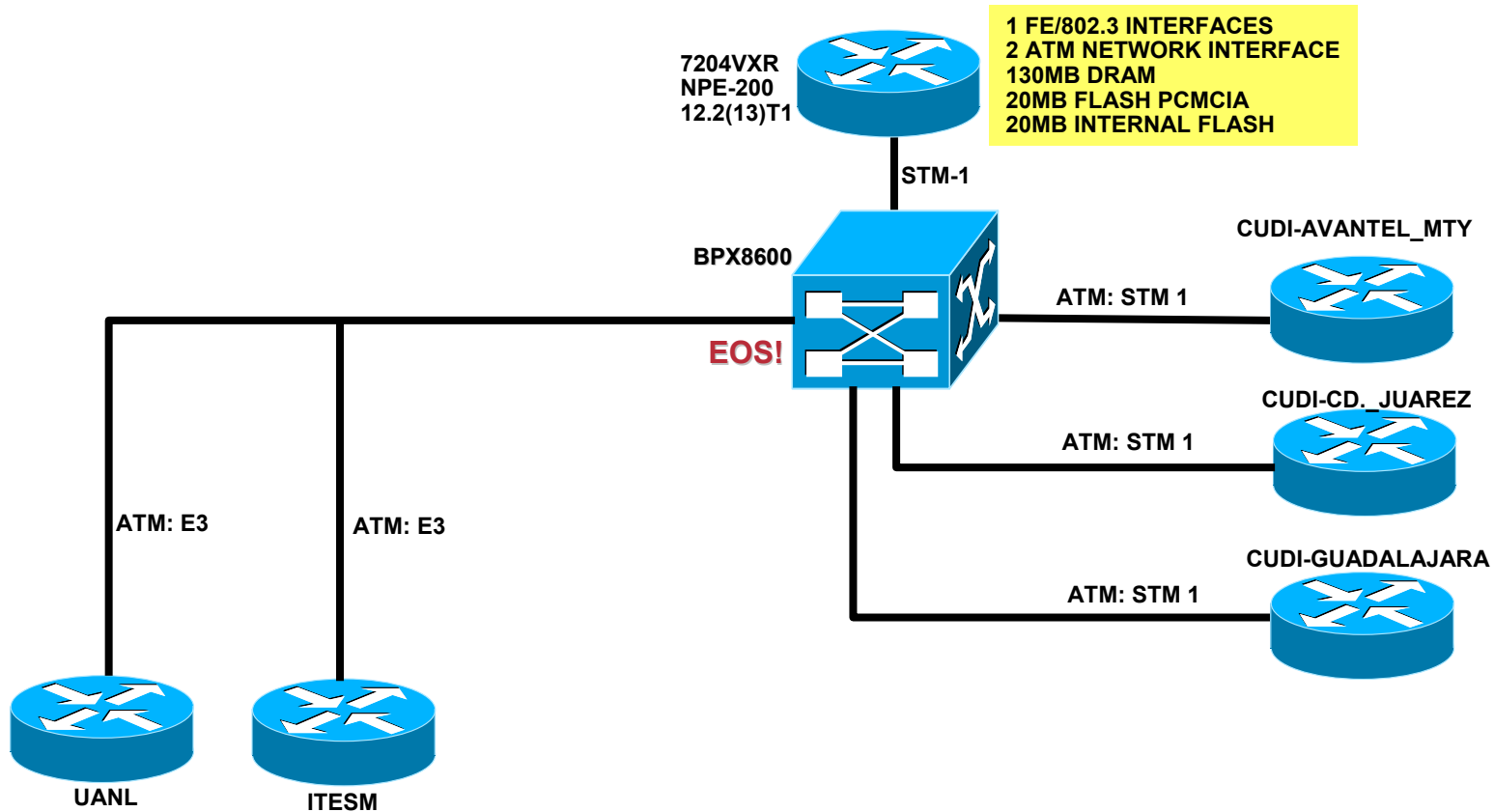
Detalle Actual Nodo Tijuana (Telmex)



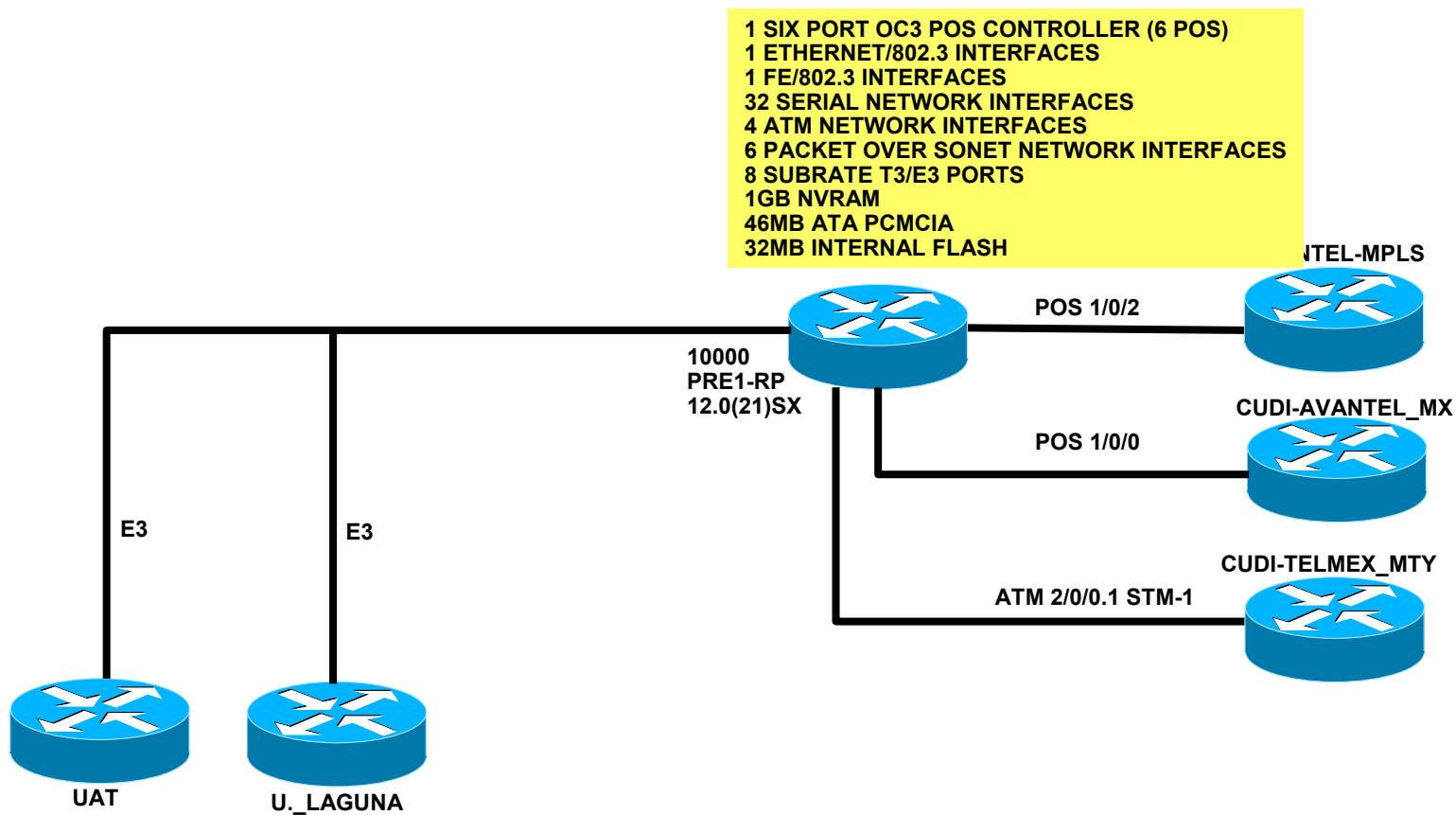
Detalle Actual Nodo Cd. Juarez (CUDI)



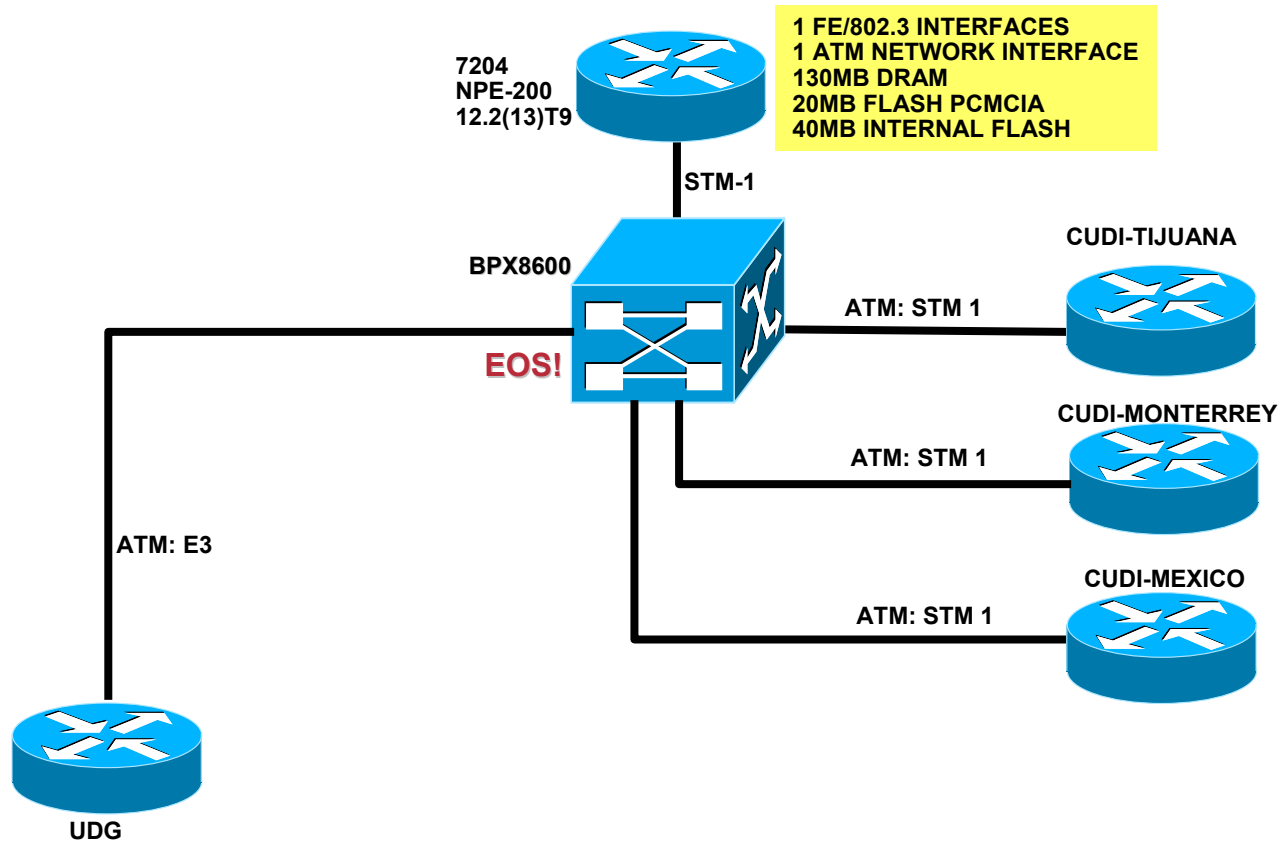
Detalle Actual Nodo Monterrey (Telmex)



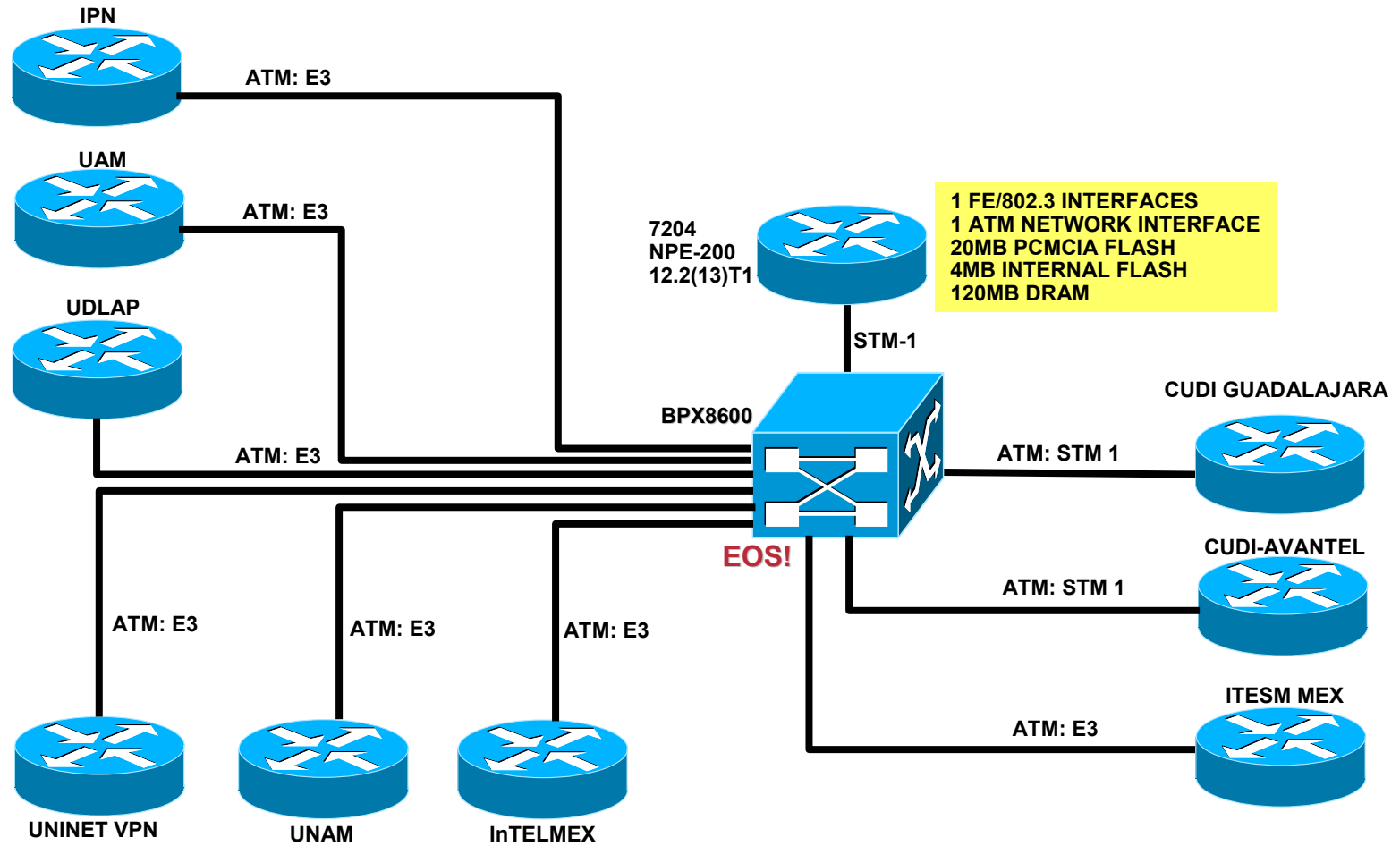
Detalle Actual Nodo Monterrey (Avantel)



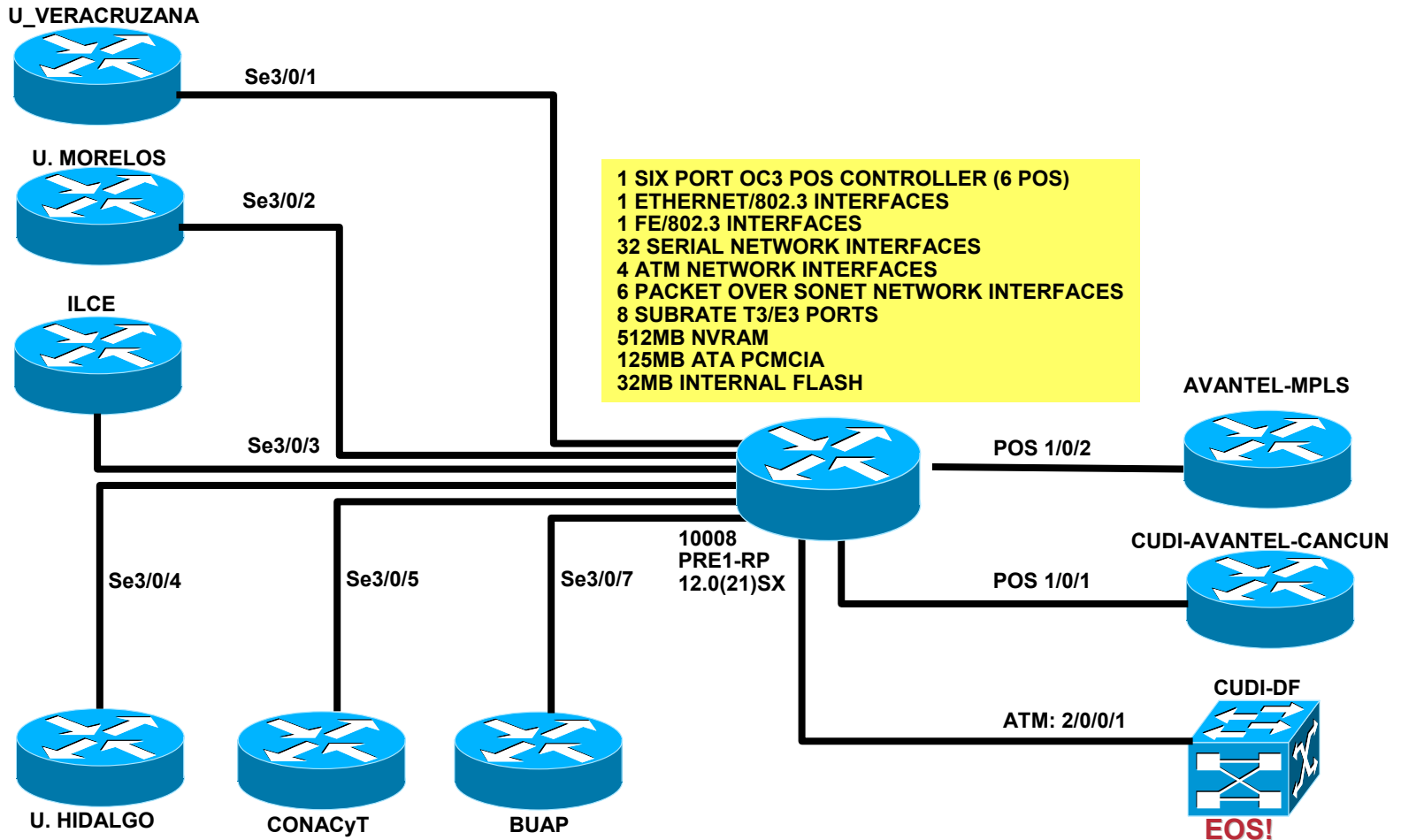
Detalle Actual Nodo Guadalajara (Telmex)



Detalle Actual Nodo DF (Telmex)



Detalle Actual Nodo DF (Avantel)



REQUERIMIENTOS Y ANALISIS DE IOS



FEATURES REQUERIDOS EN LA RED CUDI

Cisco.com

- **Calidad de servicio (QoS)**
- **Multicast IPv4, IPv6**
- **IPv6**
- **H.323**
- **Enrutamiento (ISIS, OSPF)**
- **Topología**
- **Seguridad**
- **MPLS**
- **Management (SNMP)**
- **Modularidad**
- **Escalabilidad**

ANALISIS DE VERSIONES DE IOS

Cisco.com

En base al análisis de los features requeridos en la red CUDI (Versión 12.2(13)T1, y la plataforma que aplicaría para la solución (12000), la siguiente versión de IOS es la perfilada en base al criterio mínimo de que soporte los siguientes features:

- MPLS
- QoS
- IPv6
- Multicast IPv6
- Seguridad
- ISIS, OSPF
- H.323

ANALISIS DE VERSIONES DE IOS

Analisis para plataforma 12000/PRP-2 con las siguientes funcionalidades:

- IPv6 (Internet Protocol Version 6)
- IPv6 Multicast
- IPv6 Routing: IS-IS Support for IPv6
- IPv6 Routing: OSPF for IPv6 (OSPFv3)
- IS-IS
- MPLS (Multiprotocol Label Switching)
- Modular QoS CLI (MQC)
- Multi-protocol BGP (MP-BGP) - MPLS VPN
- OSPF

PLATAFORMA

RELEASE

FEATURE SET

12000/PRP-2

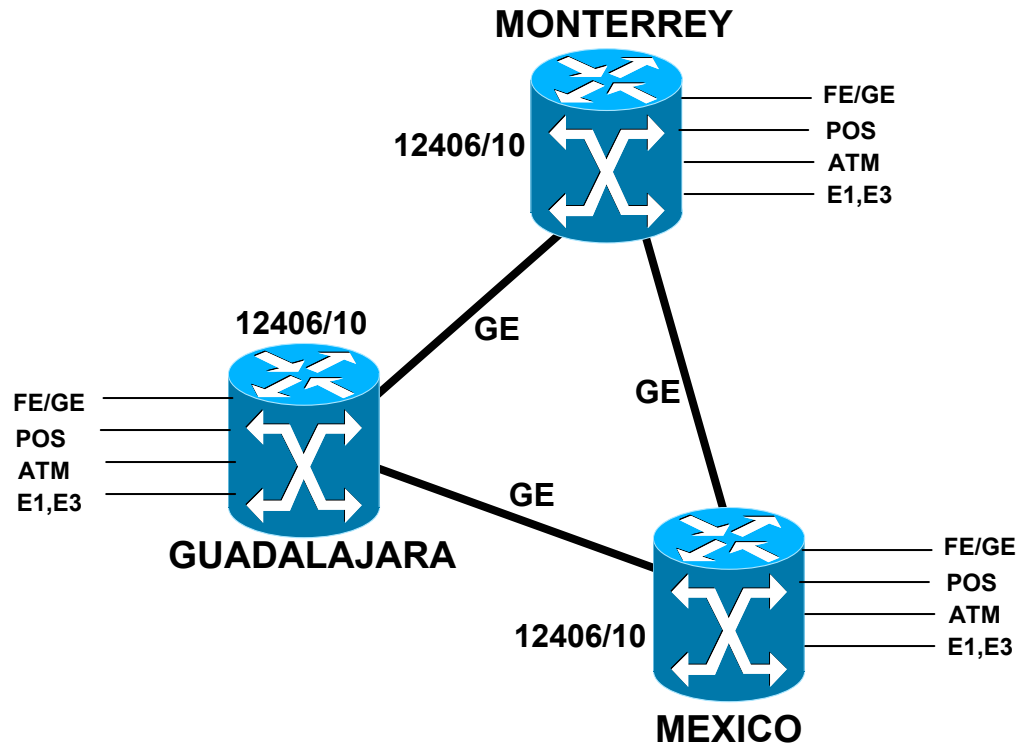
12.0(31)S2

PLATAFORMA Y TOPOLOGIAS PROPUESTAS



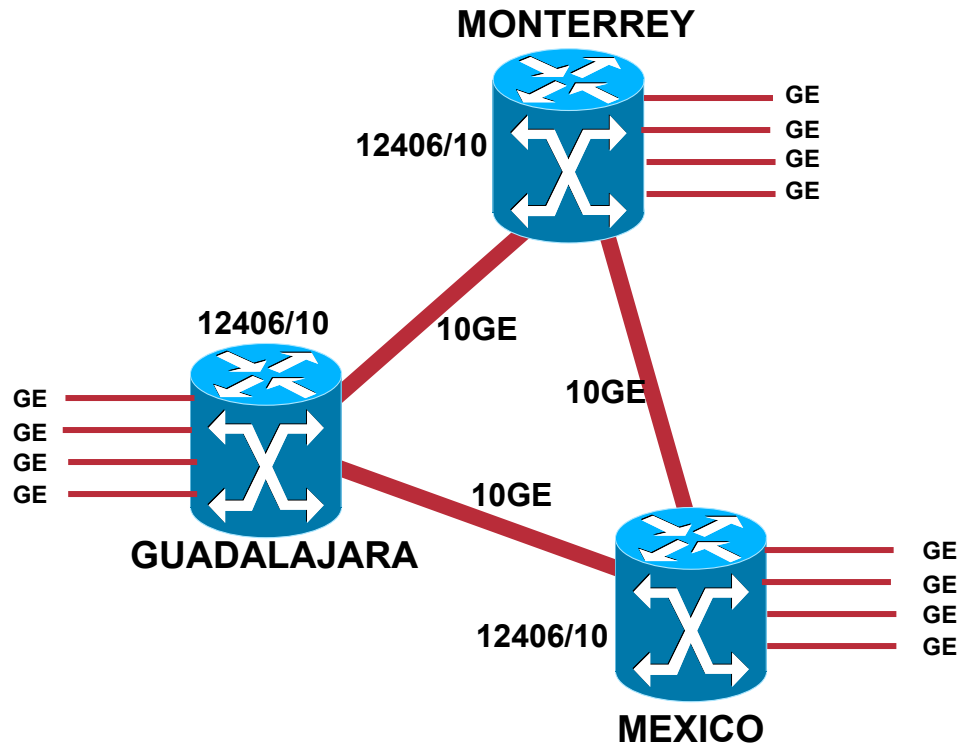
SOLUCIONES PROPUESTAS

1.- EDGE/CORE COLAPSADO CON ENLACES GE EN CORE, MULTIPLES OPCIONES DE ACCESO



SOLUCIONES PROPUESTAS

2.- EDGE/CORE COLAPSADO CON ENLACES 10GE, Y GE COMO ACCESO



ANALISIS DE PLATAFORMAS Vs VERSIONES DE IOS

PLATAFORMA	VERSION	FEATURES	OBSERV.
12000	12.0(31)S2	ISIS, OSPF, MPLS QoS, IPv6, Mcast IPv6 Seguridad, HA, IOX	

Backbone de la red CUDI Opción 1 GEthernet

Conectividad

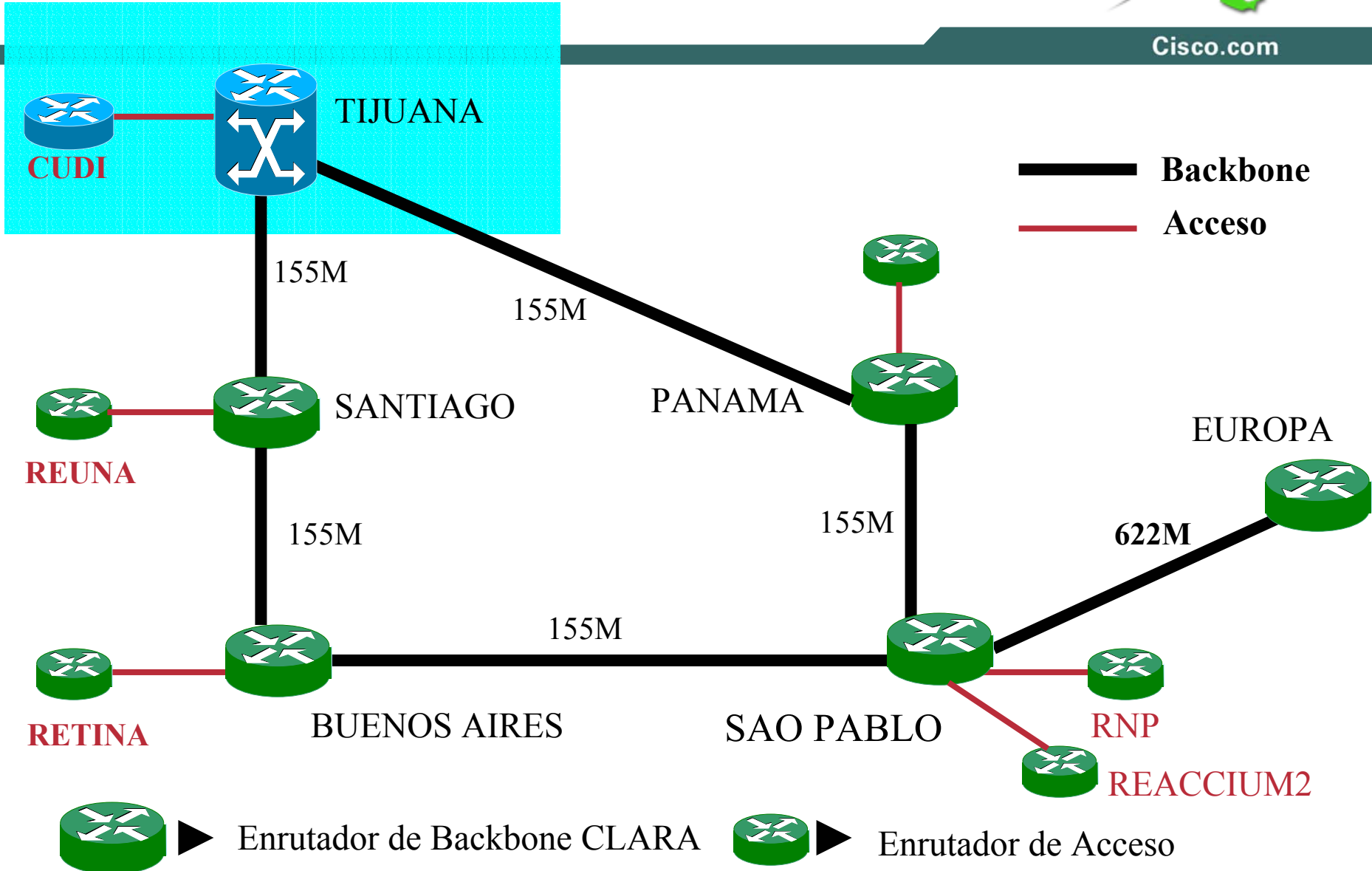


Backbone de la red CUDI Opción 2 10GEthernet

Conectividad



Red CLARA



ADMINISTRACION



Management

PLATAFORMA	VERSION	FEATURES	OBSERV.
Cisco Info Center CIC	7.0	Capacidades de gestion Multiservicio, inventario Monitoreo, correlacion Generacion de tickets,etc	Gestor de Gestores
QoS Policy Manager	3.2	Administracion de Politiclas de calidad (service manager)	Provisionamiento Y monitoreo de QoS
CW LAN Management	2.5	Administracion De elementos de Red (Cisco)	Element Manager

Requerimientos para los servidores

Cisco Works LAN Management 2.5 Server

Disk Space	80 GB
Hardware	Single CPU 1 GHz or equivalent, SPARC IIIi or x86
Memory	2 GB (CiscoWorks LMS 2.5 Enterprise) or 4 GB (LMS 2.5 Large Enterprise)
Software	Windows 2000 Server and Advanced Server with SP4 Windows Server 2003 Standard and Enterprise Editions Solaris 2.8, 2.9 (English and Japanese)
Network Management Solution (NMS) Integration	CiscoWorks CiscoView with Network Management Integration Module (NMIM) and Device Fault Manager supports integration with Hewlett Packard OpenView Network Node Manager 6.4 IBM Tivoli NetView 7.1 and 7.1.4 are supported by Dynamic Contact Replication (DCR) and NMIM

Requerimientos para los servidores

Cisco Works LAN Management 2.5 Server

System Requirements-Client

Disk Space	80 GB
Hardware	Single CPU 1 GHz or equivalent, SPARC IIIi or Windows
Memory	512 MB
Software	<p>Windows 2000 Professional, Server and Enterprise Server Windows Server 2003 Standard and Enterprise Editions Windows XP Solaris 2.8, 2.9 (English and Japanese) Windows-Internet Explorer 6.0 SP1, Netscape 7.1, Mozilla 1.7 Solaris-Netscape 7.0, Mozilla 1.7 Java Plug-in 1.4.2_04 (CiscoWorks Campus Manager and Internetwork Performance Monitor only)</p>

Configuración Elementos de Gestión

QPM 3.2

Cisco recommends using CiscoWorks QPM 3.2 on its own server for optimal performance.

CiscoWorks QPM 3.2 can be used with other CiscoWorks solutions, as follows:

CiscoWorks VPN Security Management Solution (VMS) 2.2

CiscoWorks LAN Management Solution (LMS) 2.2

CiscoWorks Routed WAN Management Solution (RWAN) 1.3

Server and Client Specifications (minimum requirements)

Server Hardware

PC-compatible computer with 1-GHz or faster Pentium processor

CD-ROM drive

10BASE-T or faster connection

1-GB RAM

9-GB available disk drive space

2-GB virtual memory

Server Operating System

CiscoWorks QPM requires the following operating systems:

Windows 2000 Professional, Server, and Advanced Server (Service Pack 3 or 4)

Ports Used by QPM

CiscoWorks QPM on Windows uses the following ports, in addition to the ports used by CiscoWorks Common Services:

51099 Java Naming and Directory Interface (JNDI) lookup port

51199 JRMP lookup port

51299 Admin page port

10033 (Windows) Database port

51899 Protocol Data Packet (PDP) port

Configuración Elementos de Gestión

QoS Policy Manager

Client Requirements

Hardware

PC-compatible computer with 300-MHz or faster Pentium processor

Client Operating System

Windows 2000 (Server or Professional Edition) with Service Pack 3 or 4, or Windows XP SP1 (Server or Professional)

Client Browser

Windows with SP 3 and Windows XP clients:

Microsoft Internet Explorer 6.0 or Internet Explorer 6.0 with Service Pack 1

Netscape Navigator 7.1

Windows clients with SP 4:

Microsoft Internet Explorer 6.0 with Service Pack 1

Netscape Navigator 7.1

Configuración Elementos de Gestión

Cisco.com

Cisco Info Center

- servidor con 2 o 3 procesadores y 2 o 3 GB en RAM para el Object Server probe y Webtop Server.
- Maquina con 2 procesadores y 2 GB en RAM para Reporter y el Gateway.
- Base de datos Oracle.

CISCO SYSTEMS

