



ASR 1000 Series Technical Overview

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ASR 1000 Series

- **Next-generation Midrange Router Series**

 - 2RU / 4RU / 6RU chassis

 - 5 / 10 / 20+ Gbps forwarding with services

 - Simple scale: 10-20-(40G) just by changing Forwarding Processor (ESP)

 - [5G-10G in 2RU]

 - Dual AC or DC power supplies

- **Key Differentiators**

 - Designed for High Availability

 - HW redundancy for 6RU (RP and ESP) with ISSU

 - SW redundancy for 2RU/4RU: In-service software upgrade, even with one RP

 - State of the art H-QoS (3 level, 128K+ queues)

 - Integrated services (no service blades), software-licensed based features (SBC, FW, NBAR, etc.)

 - Powerful control plane in RP

- **Simple Migration**

 - SPA support – same interfaces as Cisco 7600 / 10000 / 12000 / CRS-1

 - IOS features, CLI – simple migration from existing 7200 deployments



6 RU / 12 SPA slots



4 RU / 8 SPA slots



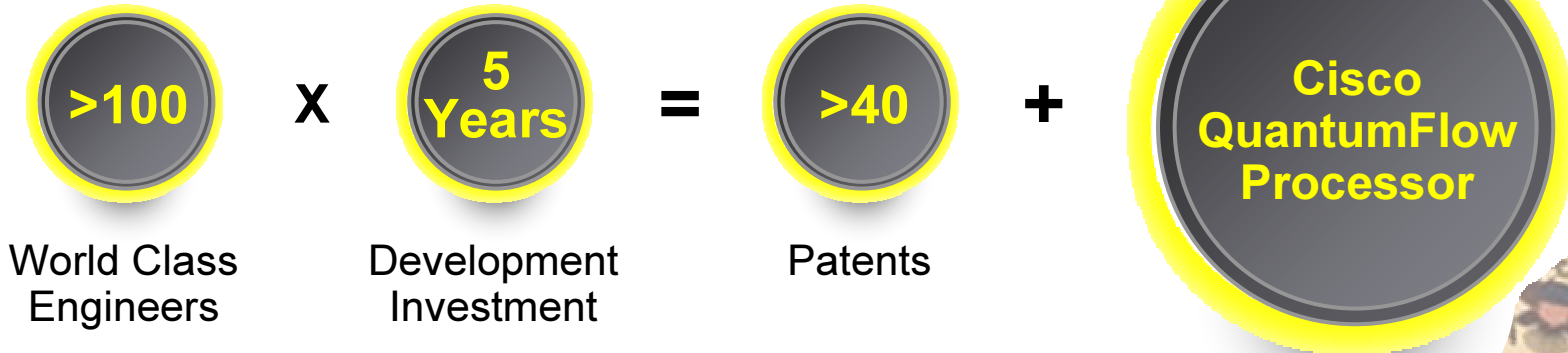
2 RU / 3 SPA slots

Cisco ASR-1000 Series Specifications



	3 Slot	8 Slot	12 Slot
# of FP Slots	1	1	2
# of RP Slots	Integrated	1	2
# of CC Slots	Integrated	2	3
IOS Redundancy	S/W	S/W	H/W
Built-In GigE	4	n/a	n/a
Height	3.5" (2RU)	7" (4RU)	10.5" (6RU)
Bandwidth	5-10 Gbps	10-40+ Gbps	10-40+ Gbps
Performance	Up to 15 MPPS	Up to 20 MPPS	Up to 20 MPPS
On-Chassis Services	SBC, FW, IPSec, IDS, DPI, ISG +		
Aggregated Services and Scale			

ASR 1000 Series Innovations Powered by Cisco QuantumFlow Processor



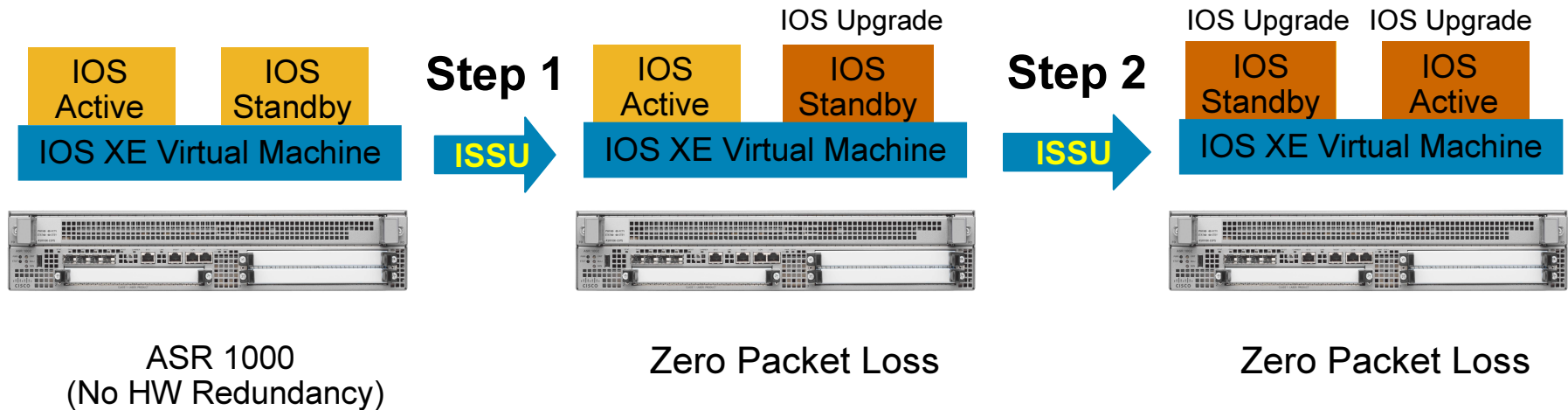
World's Most Advanced Piece of Networking Silicon

Performance	Up to 20MPPS Forwarding Rate w/service features	Nearly three times more powerful than next competing edge platform
Scale	Over 1.3 Billion Transistors	Developed by same team as CRS-1 ASIC
Availability	Customized QoS	20 Years of QoS technology reduced to silicon
Services	Integrated w/ Programmability	Industry first, permits "instant on" and "future extensibility"

ASR 1000 Series Innovations

Virtualized IOS Optimized for Compact Edge Routers

Software Virtualization...



... Industry first, delivering hitless upgrades without costly hardware redundancy

Feature

Combines rich edge feature set of IOS

Provides IOS command line, common look and feel for transparency to operator

Benefit

Capable of broad scope of services: SP and enterprise, hosted or managed

Decreases OpEx, increases return on training investment

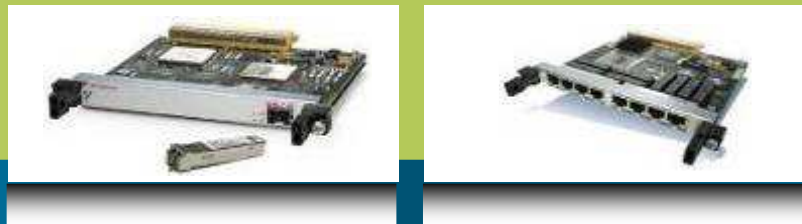
Investment Protection

Cross Platform Integration with SPA

Simpler Operations, Lower Spares Inventory Across the Edge/Aggregation and Core Network

Shared Port Adapters (SPA)

FE/GE/10GE, POS, TDM, Circuit Emulation, ATM



Same Interfaces Edge to Core

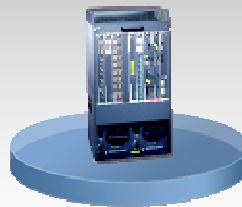
Cisco ASR 1000 Series



Cisco 10000 Series



Cisco 7600 Series



Cisco XR 12000 Series



Cisco CRS-1 4, 8, 16 Slot

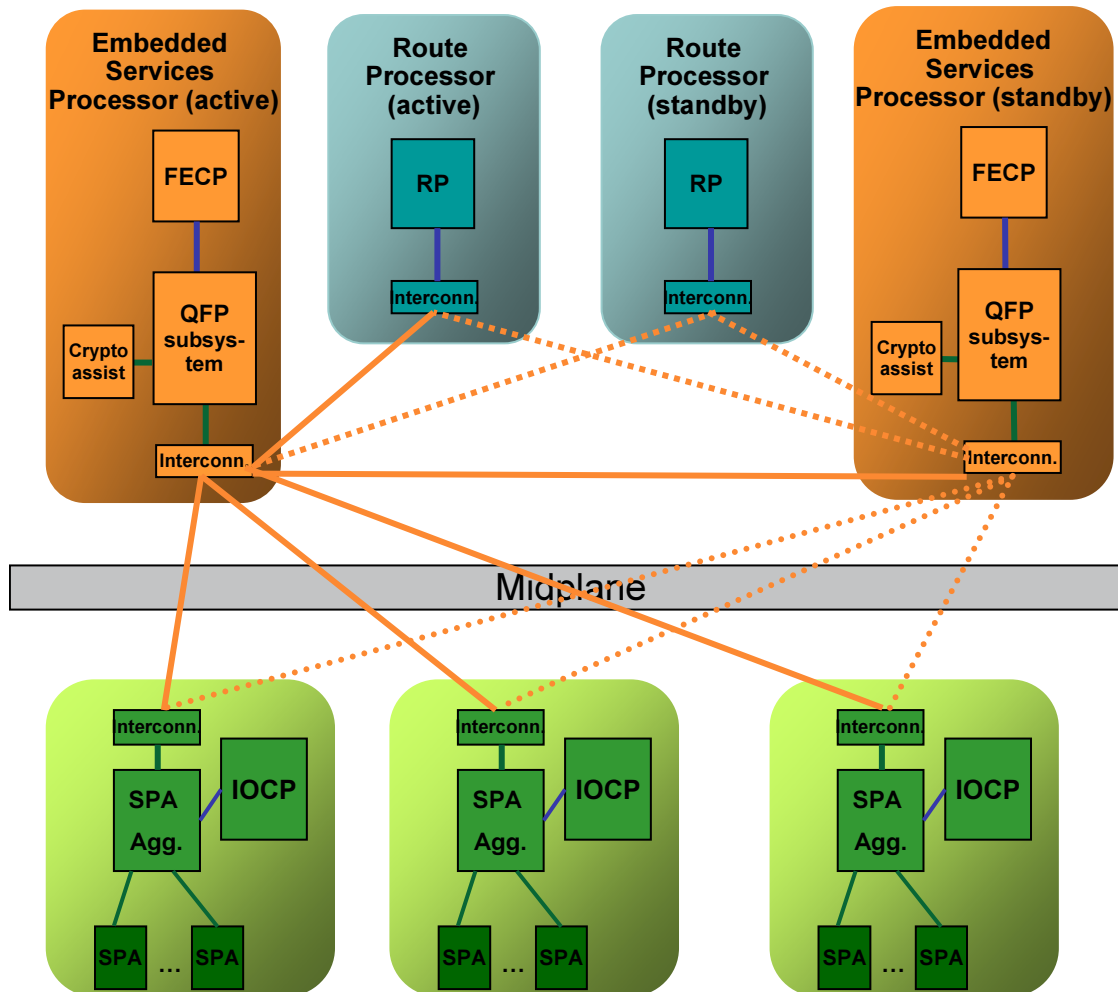


Cisco CRS-1 MC



Complete Investment Protection

ASR 1000 Series Components

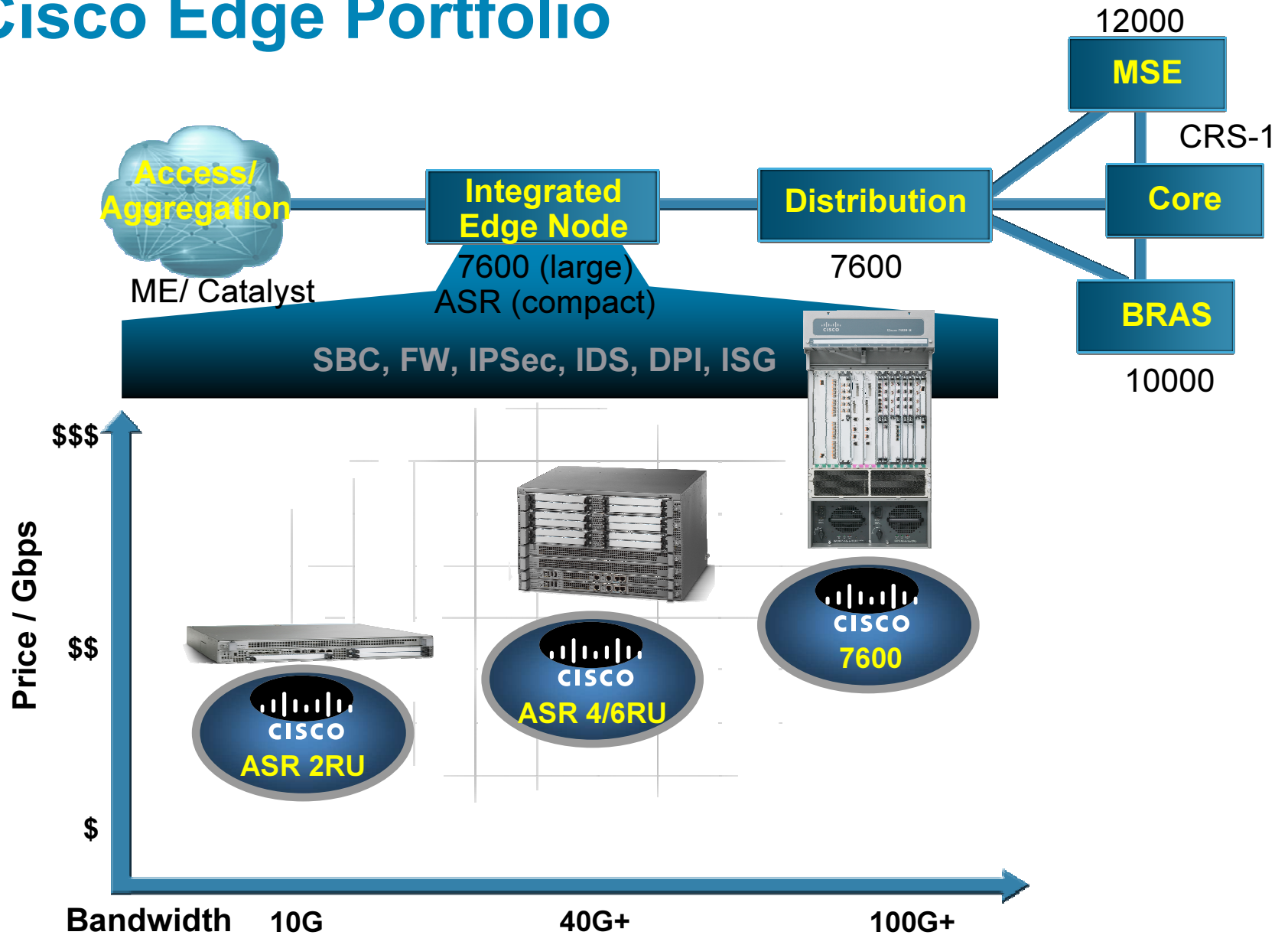


- **RP (Route Processor)**
Control plane
Manages system
- **Embedded Services Processor (ESP)**
Handles forwarding plane traffic and services
- **SPA Carrier Card (SIP)**
Houses the SPAs
- **Shared Port Adapters (SPAs)**
Provide interface connectivity
- **Centralized Forwarding Architecture**
All traffic flows through the ESP

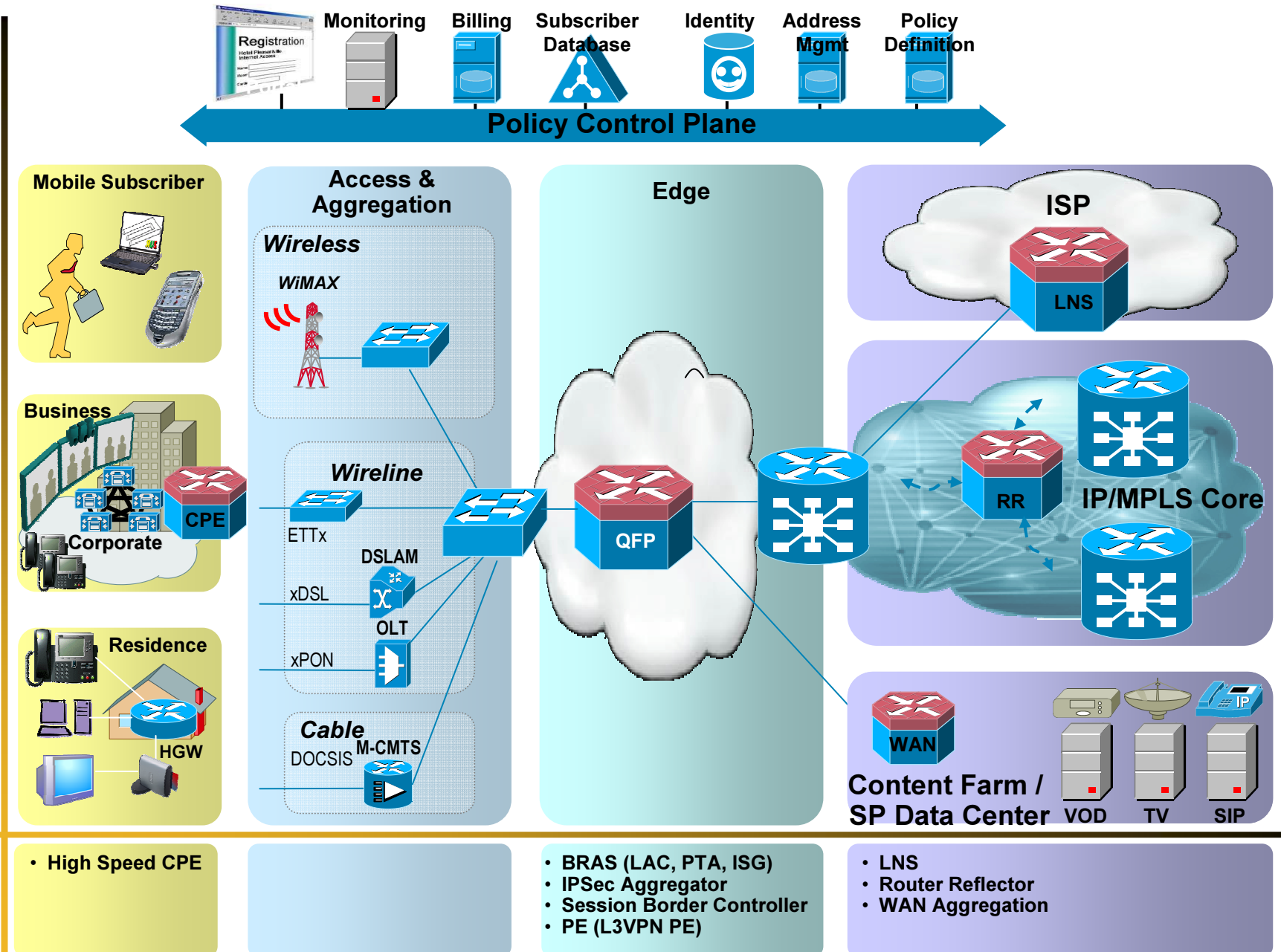
ASR 1000 SP Applications



ASR-1000: Extending the Market Leading Cisco Edge Portfolio



ASR1000 Service Provider Places in the Network



- High Speed CPE

- BRAS (LAC, PTA, ISG)
- IPSec Aggregator
- Session Border Controller
- PE (L3VPN PE)

- LNS
- Router Reflector
- WAN Aggregation

