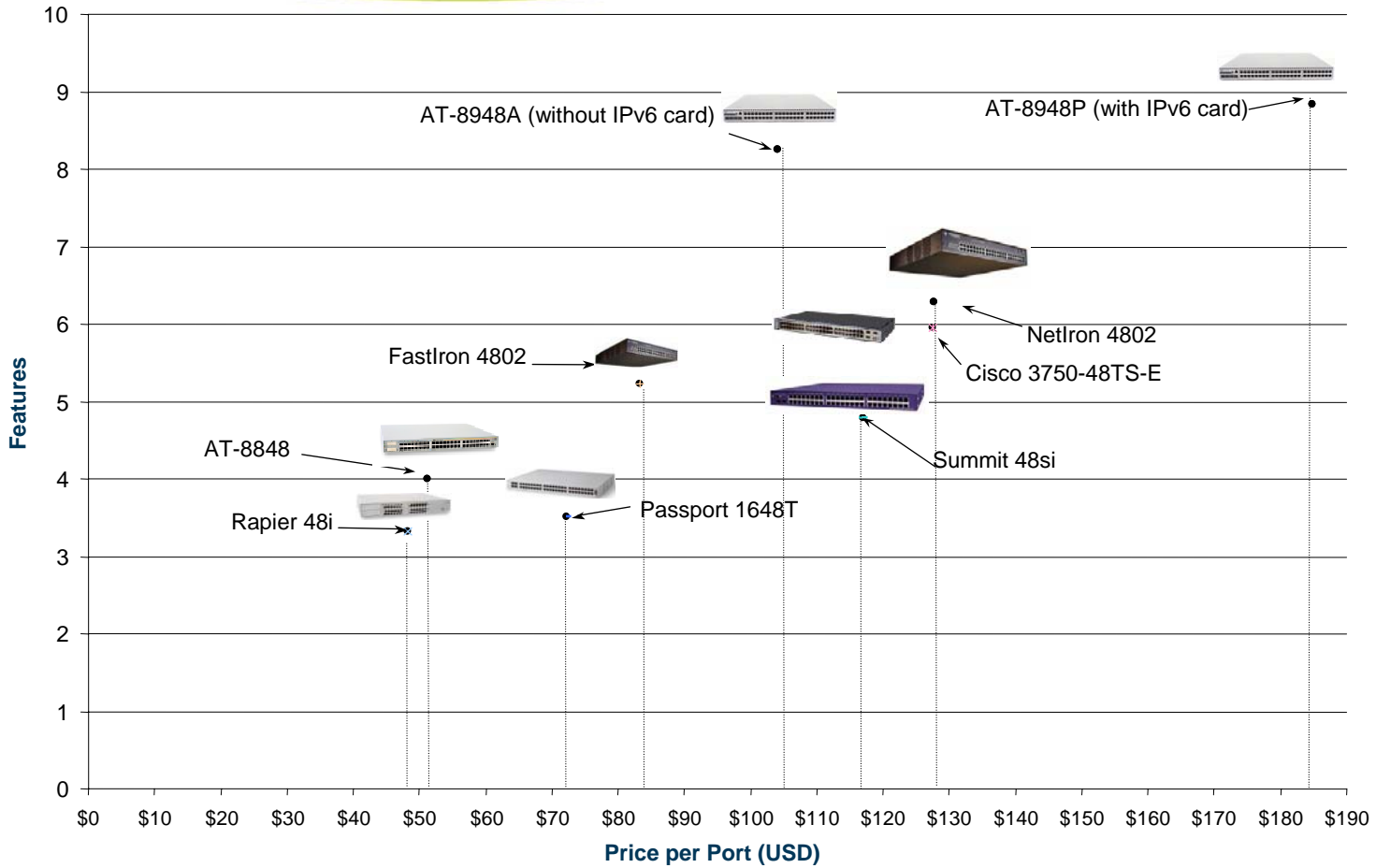
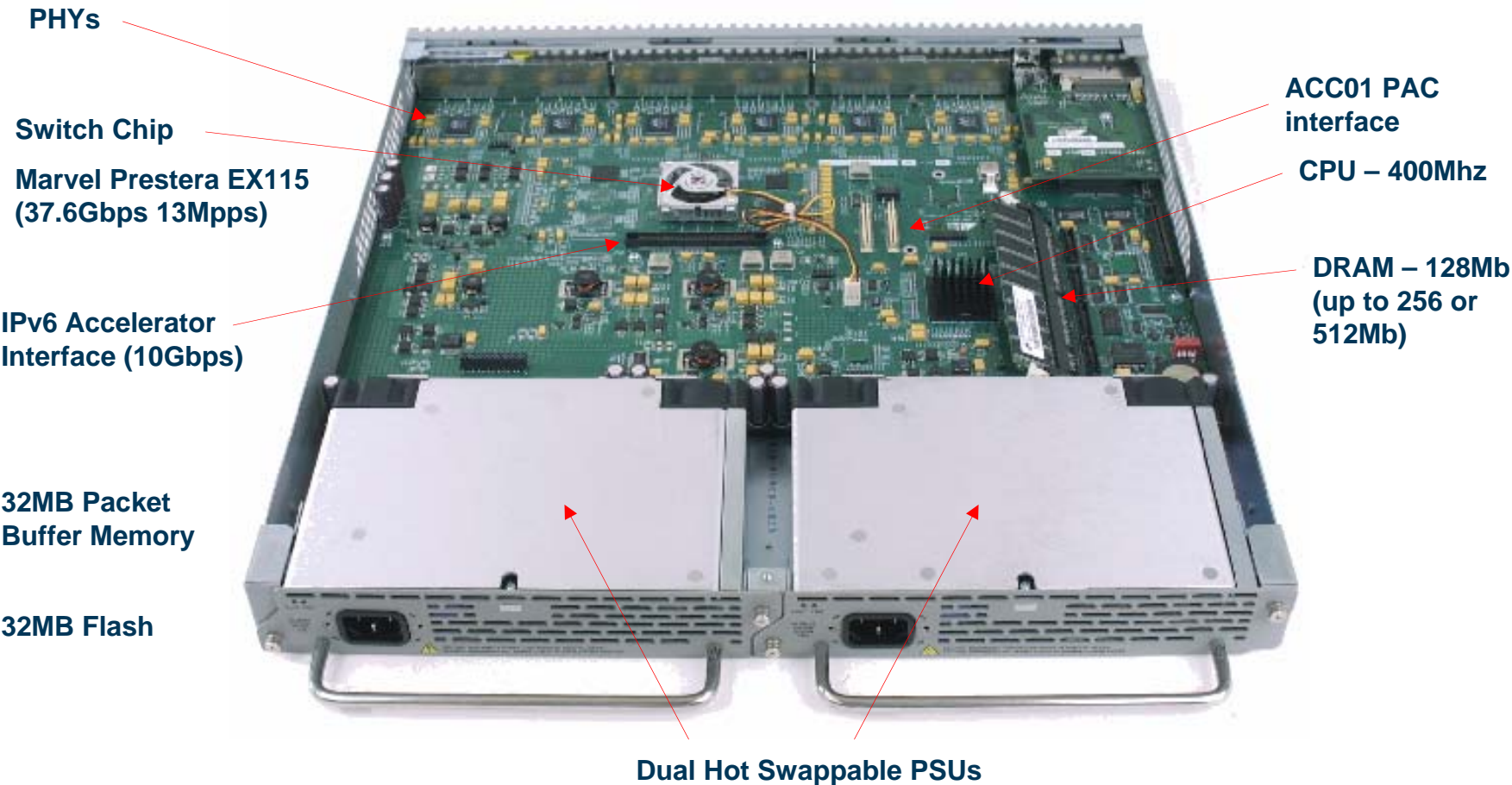


A step further: AT-8948

# Positioning - Competitors



# Architecture



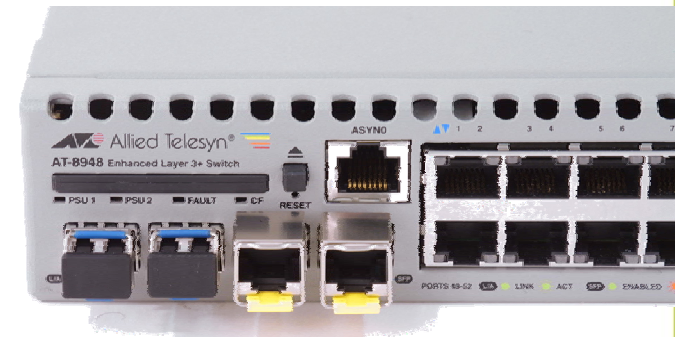
# Performance

## Feature

- SFP uplinks

## Benefit

- Ultimate uplink port flexibility: can support any combination of copper or fiber for short haul and long haul WDM (ZX)
- Space saving. More compact than ULMs or even GBICs
- Hot-swappable for flexibility and reliability
- Lower cost than competitor SFPs
  
- AT-MG8T 100m Base-T SFP
- AT-MG8SX 300m SX SFP
- AT-MG8LX10 10km LX SFP
- AT-MG8ZX 70km ZX SFP



# Performance



## Feature

- VLAN double tagging

## Benefit

- Double tagging opens applications up in service provider markets
- Subscribers can utilize their existing VLAN tags instead of service provider-coordinated VLAN tags
- Allows SP to provide connectivity for multiple customers without L3 routing

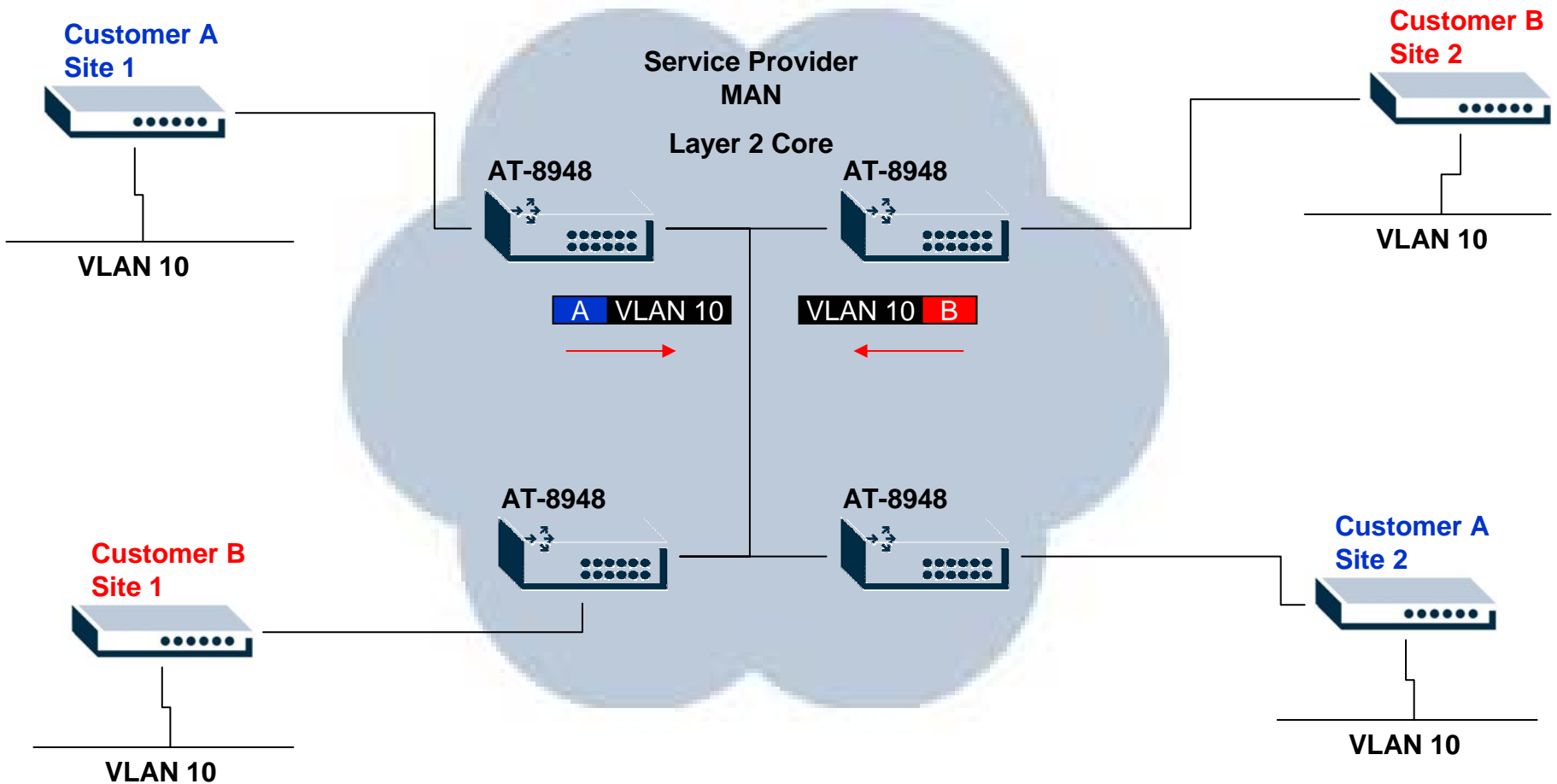
## Feature

- 4096 VLANs

## Benefit

- Full VLAN support without compromise
- VLANs can be based on port, subnet or protocol

# Double Tagging Application



# Performance

## Feature

- 4k IP Interfaces

## Benefit

- High performance, high capacity L3 switching
- Ideal for aggregating complex IP networks
- 4K is the practical limit – IEEE Std 802.1Q specifies 4K VLANs

Q. Where can you use 4K IP interfaces?

A. Aggregating L2 devices to provide IP interfaces on user ports

## Feature

- Wire-speed multicasting with 4K multicast table size

## Benefit

- Good support of broadcast video applications with many users and multicast channels

# Performance



## Feature

- VLAN tag translation

## Benefit

- VLAN tags translated between two sites
- Unlike double-tagging customer's VLAN priority can be used through the provider network

## Feature

- 802.1s

## Benefit

- Competitive standard required on tenders
- Improves network performance through balancing traffic across spanning tree links

# Performance

A decorative wavy line in a light blue color that spans the width of the slide, starting from the left edge and ending at the right edge, positioned below the title.

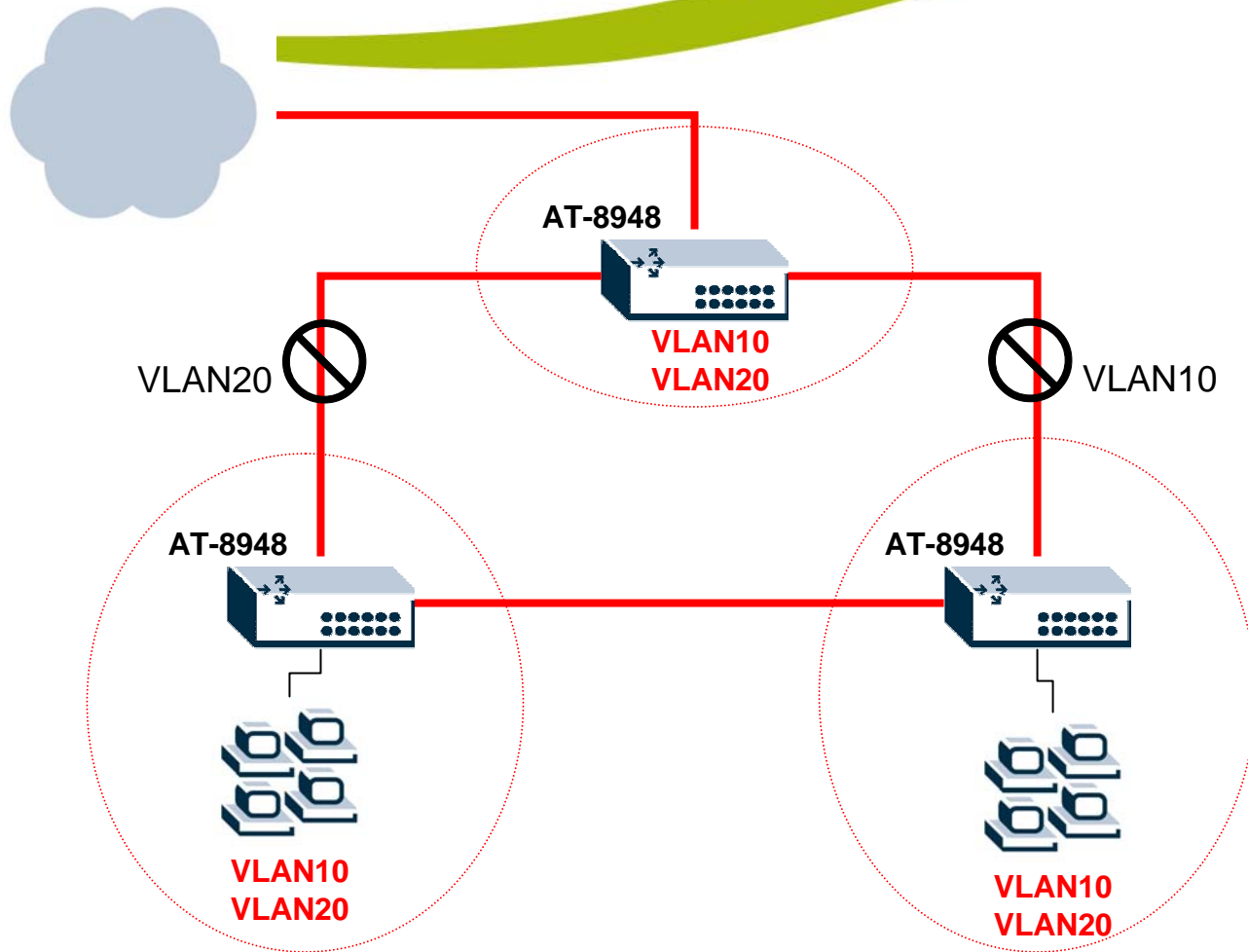
## Feature

- 802.1s

## Benefit

- Competitive standard required on tenders
- Improves network performance through balancing traffic across spanning tree links

# 802.1s Application



# QoS

## Feature

- Superior Policy-based QoS

## Benefit

- Intelligently manage network traffic to allow stable and predictable end-to-end network performance.
- Ideal solution for mixed application networks running voice, data, and video traffic.
- All performed at wire-speed

## Feature

- Eight priority/egress queues per port

## Benefit

- Allows traffic to be processed with up to eight levels of priority
- Gives greater control to the network administrator
- Increases differentiation of critical and non-critical network applications
- Ensures availability of business-critical applications and services

# QoS

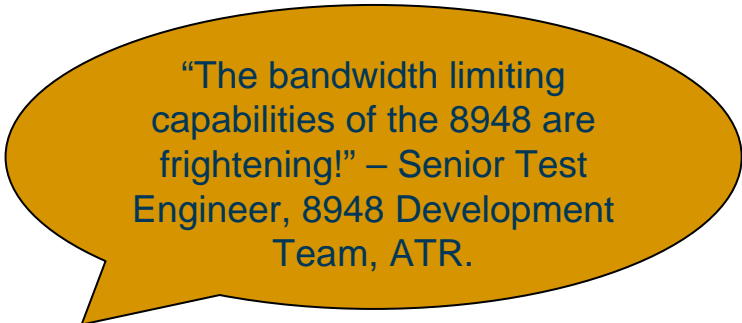


## Feature

- Bandwidth limiting down to 3kbps, with burst limits
- Bandwidth limit resolution down to 1kbps

## Benefit

- Very precise control of bandwidth guarantees
- Burst limits improve bandwidth limiting of TCP sessions (avoids bandwidth flapping)



“The bandwidth limiting capabilities of the 8948 are frightening!” – Senior Test Engineer, 8948 Development Team, ATR.

# QoS



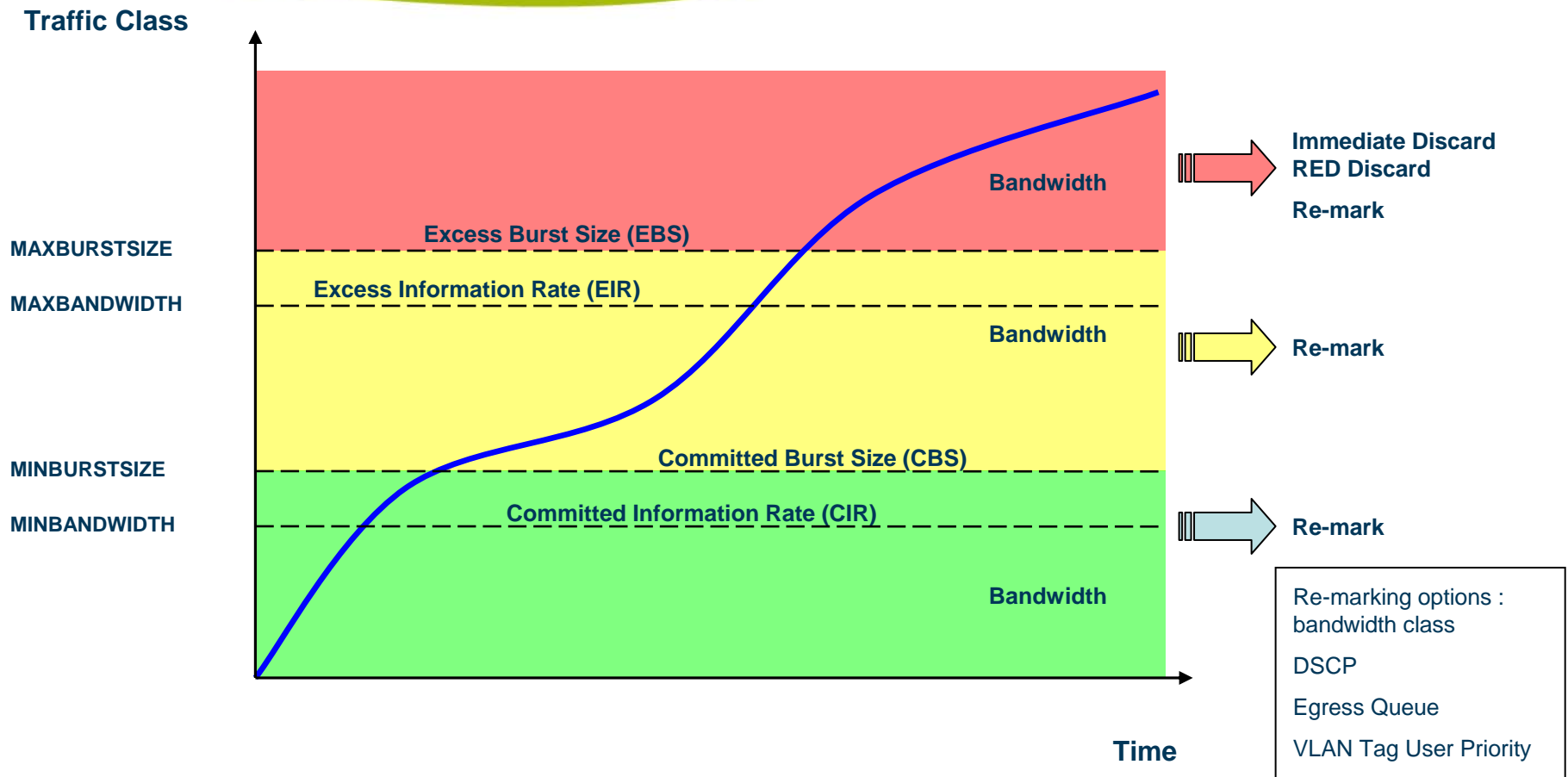
## Feature

- 2 rates & 3 colours of bandwidth conformance

## Benefit

- Allows SPs to offer differentiated services based on SLA.
- Customers exceeding their guaranteed SLA bandwidth can be given lower priority using re-marking.
- Non-conforming traffic can be identified through the entire network

# QoS – Rate Metering



# QoS – Common CoS-based SLA

Service Class	Service Characteristics	802.1p ID	Bandwidth Profile	Service Performance
<b>Premium</b>	Real-time IP telephony or IP video applications	6, 7	CIR No EIR	Delay < 5ms Jitter < 1ms Loss < 0.01%
<b>Silver</b>	Bursty mission critical data applications requiring low loss and delay (e.g., Storage)	4, 5	CIR EIR	Delay < 5ms Jitter = N/S Loss < 0.01%
<b>Bronze</b>	Bursty data applications requiring bandwidth assurances	3, 4	CIR EIR	Delay < 15ms Jitter = N/S Loss < 0.1%
<b>Standard</b>	Best effort service	0, 1, 2	No CIR	Delay < 30ms Jitter = N/S Loss < 0.5%

# IPv6 – Why?

- Increased address space
  - IPv4: 32 bit address gives 4 billion addresses
  - IPv6: 128 bit address gives 340 billion billion billion billion addresses!!!!
- True end-to-end networking – Removes need for NAT
  - Some countries in Asia, with only a small IPv4 address allocation, have NAT up to 6 layers deep!
  - Some countries are running out of addresses now!
- Increased security
- Better QoS – Flow labels
- Automatic configuration

FE80:0000:0000:0000:0202:B3FF:FE1E:8329

# IPv6

## Feature

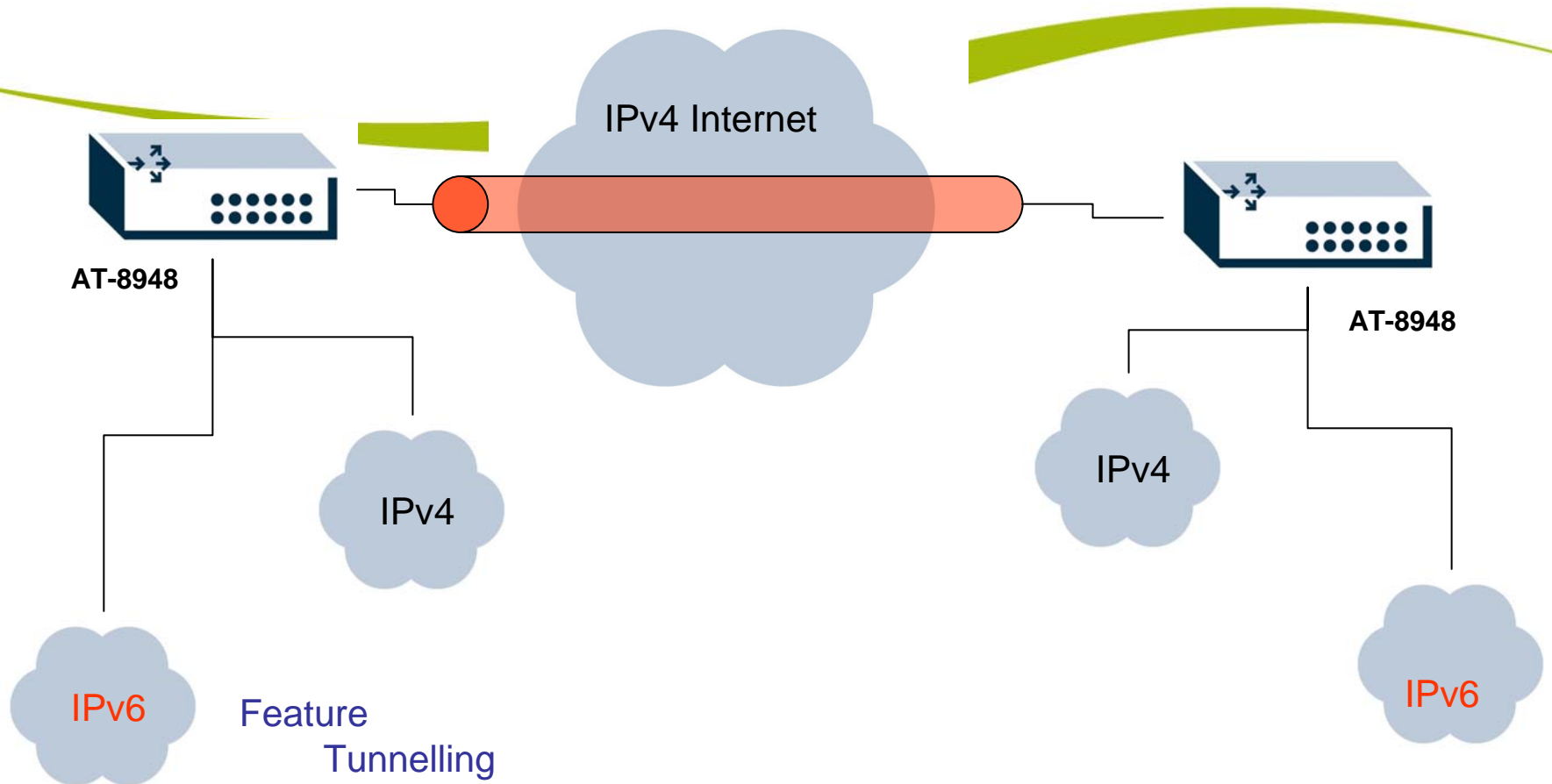
- IPv6 accelerator card ACC-01

## Benefit

- Ideal for customers who demand IPv6 compatibility and high performance IPv6 routing
- Provides wire speed hardware routing for IPv6 packets
- Provides wire speed QoS – prioritisation and rate limiting
- Accelerates tunnelling
- Can sell as upgrade option for AT-8948A customers wanting future IPv6 capability
- Future proofed
  - Start with IPv4 box
  - Sell IPv6 upgrade later



# IPv6 Tunnelling Application



Feature  
Tunnelling

## Benefit

Future-proofs your network

Allows early adopters to implement IPv6 at the edge, retaining IPv4 core

IPv4 and IPv6 will co-exist for some time. Tunnelling eases transition to IPv6.

# When to Sell

When a customer needs these features	Sell this product		
	AT-8948	AT-9800	AT-8800
1 RU	SELL		SELL
Dual HS PSUs	SELL		
Hardware IPv6	SELL		
Hardware IPX		SELL	
Double Tagging	SELL		
4k VLANs	SELL	SELL	
SFPs	SELL		
GBICs		SELL	SELL
Compact Flash	SELL	SELL	
High density Gigabit ports		SELL	
48 10/100 ports	SELL		SELL
MAC-based VLANs		SELL	