

# Cisco 7200/7400 in Broadband Aggregation FAQ

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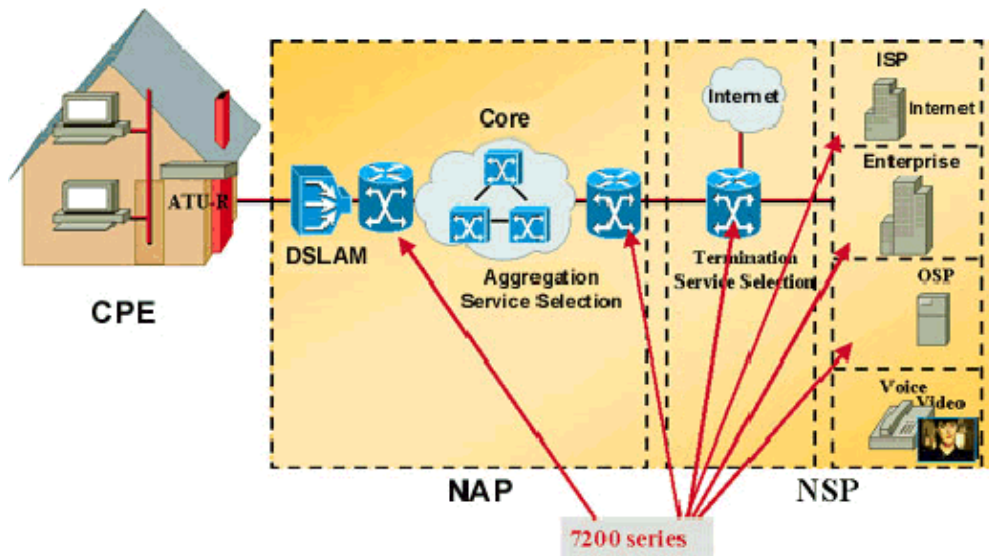
## Introduction

This document lists frequently asked questions about the Cisco 7200/7400 in broadband aggregation.

### **Q. What position does the Cisco 7200/7400 serve in broadband aggregation?**

**A.** The Cisco 7200/7400 serves three roles:

- ◆ **Customer Premises Equipment (CPE)** The Cisco 7200/7400 can be a CPE device and meet many different requirements.
- ◆ **Network Access Provider (NAP)** Broadband aggregation features available on the Cisco 7200/7400 allow tunneling of PPP connections from the customer to the network service provider.
- ◆ **Network Service Provider (NSP)** In addition to tunneling PPP sessions, the Cisco 7200/7400 can terminate those sessions at their final destinations.



**Q. What features for broadband aggregation are provided on the Cisco 7200/7400?**

A. The following features are provided:

- ◆ Multicast
- ◆ RA-MPLS
- ◆ Per session rate limiting
- ◆ CBAC-based firewalling
- ◆ Software-based IPSec
- ◆ PPPoE session limit
- ◆ Subscriber Edge Service Manager (SESM) and Service Selection Gateway (SSG).
- ◆ L2TP access concentrator (LAC) and L2TP network server (LNS) functionally.
- ◆ Auto Detect (SNAP) automatic encapsulation for PPPoA and PPPoE.
- ◆ PPPoA allows tunneling and termination of PPP sessions over ATM permanent virtual circuit (PVC) and switched virtual circuit (SVC) links.
- ◆ PPPoE allows tunneling and termination of PPP sessions over Ethernet links.
- ◆ PPPoEo802.1Q allows tunneling and termination of Ethernet PPP sessions across VLAN links.
- ◆ PPPoEoA Ethernet PPP connections over ATM links.
- ◆ PPPoEoE – PPPoE over non-ATM links.
- ◆ L2TP provides for tunneling of layer 2 networks over a layer 3 infrastructure.
- ◆ RBE allows bridged RFC 1483 frames to be routed. Bridge headers are ignored by the router. This is an alternative to IRB.
- ◆ Dynamic Subscriber Bandwidth Selection Dynamically controls bandwidth at the ATM VC level.
- ◆ Per VRF AAA for Managed LNS Permits the Virtual Home Gateway (VHG) to communicate directly with the customer RADIUS server without having to use a RADIUS proxy.

**Q. What broadband aggregation features will be supported in the future?**

A. The following broadband aggregation features will be supported:

- ◆ Support for the VPN Accelerated Module (VAM) for hardware accelerated IPSec
- ◆ VRF-Lite in Parallel Express Forwarding (PXF)
- ◆ ATM PVC auto-provisioning via local functionality

- ◆ Multilink Redirect

**Q. How many users/connections will the Cisco 7200/7400 support for broadband aggregation?**

A. A Cisco NPE-400 with 512 MB of memory will support 8,000 sessions and 8,000 L2TP tunnels. An NPE-300 with 256 MB of memory will support 4,000 sessions.

**Q. What is Service Selection Gateway and in what train is it supported?**

A. Service Selection Gateway (SSG) is a layer 2 and layer 3 solution that provides RADIUS authentication and accounting for user interactive policy routing to different IP destinations (services). SSG allows users to select where their broadband PPP connections terminate. Normally configured via a dashboard application, SSG allows the user to select from options such as a corporate intranet, partner extranet, or public Internet.

SSG is currently supported in Cisco IOS Software Release 12.2(4)B and later.

**Q. What are the plans for supporting more than 8,000 sessions?**

A. The NPE-G1 next generation NPE processor is expected to double the number of sessions supported.

**Q. What broadband features are accelerated in PXF and what Cisco IOS® Software supports them?**

A. The following features were introduced into the PXF with Cisco IOS Software Release 12.2(4)B.

- ◆ 802.1Q
- ◆ L2TP
- ◆ PPPoA
- ◆ PPPoEo802.1Q
- ◆ PPPoEoE
- ◆ PPPoE/PPPoEoA
- ◆ RBE

**Q. How does PXF compare to NPE-403 performance?**

A. The following increases in performance can be expected with broadband on PXF.

- ◆ PPPoA 65%
- ◆ PPPoEoA 120% +
- ◆ PPPoEoVLAN 400%
- ◆ RBE 100%

**Q. What is the Service Path and how is it used for broadband aggregation?**

A. The Service Path is an architecture for making a stack of Cisco 7400s logically appear as one entity. The product that makes this possible is the Cisco Network Services (CNS) with support for cluster management. CNS runs on a dedicated platform (an Internet Engine 2100)

and is incorporated into the architecture of the Service Path.

## **Q. What are the IDB limits for the Cisco 7200/7400?**

**A.** The interface description block (IDB) limit is over 20,000 in Cisco IOS Software Release 12.3 and later. Refer to [Maximum Number of Interfaces and Subinterfaces for Cisco IOS Software Platforms: IDB Limits](#) for additional information.

## **Q. How many 802.1Q VLANs does the Cisco 7200/7400 support per interface?**

**A.** The Cisco 7200 and 7400 can support up to 4096 VLANs per interface.

## **Q. What is a broadband user service license?**

**A.** A broadband user service license (BUS) is a feature license. It should be purchased when a Cisco 7200 is used to aggregate more than 1000 broadband subscribers.

## **Q. How many PVCs can be terminated on the ATM OC3 ports of the Cisco 7200?**

**A.** Each PA–A3 will terminate 4096 PVCs. PA–A6 will support up to 8000 PVCs. For more information, refer to [Understanding the Maximum Number of Active Virtual Circuits on Cisco ATM Router Interfaces](#).

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## **Related Information**

- [DSL Technical Support](#)
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