

Compression Service Adapter for Cisco 7000 Series Routers

THE CISCO SYSTEMS COMPRESSION SERVICE ADAPTER (CSA) PERFORMS HARDWARE-ASSISTED HIGH-PERFORMANCE COMPRESSION FOR CISCO IOS[®] COMPRESSION SERVICES. IT IS AVAILABLE FOR ALL CISCO 7200 SERIES, 7500 SERIES, AND ROUTE SWITCH PROCESSOR (RSP) 7000-EQUIPPED CISCO 7000 SERIES ROUTERS.

CSA enables enterprises and service providers to improve compression performance without impacting system resources. As a high-speed, specialized coprocessor, CSA provides high-performance compression at the central site. It is able to receive multiple compression streams coming from remote Cisco routers using Cisco IOS software-based compression. The CSA minimizes overall cost for data compression by integrating hardware- and software-based Cisco IOS data compression solutions. The CSA also maximizes router performance by off-loading compression algorithms from the central processing engines of the router performance by off-loading compression algorithms from the central processing engines of the RSP7000, 7200, and 7500, allowing them to remain dedicated to routing and other specialized tasks.

Figure 1 Compression Service Adapter



Wide-area connectivity is becoming a requirement for today's enterprises. As enterprises become more distributed, new mission-critical applications constantly tax available bandwidth. Network managers can solve these bandwidth constraints by adding new WAN links, but they are constantly being pressured to reduce networking costs. Data compression technology maximizes bandwidth and increases WAN link efficiency by enabling more data to be sent in every packet. This feature enables network managers to cost-effectively increase application performance and service availability for end users without costly infrastructure upgrades. Data compression also enables service providers to maximize available bandwidth and deliver service to more customers—improving service profitability.

CSA and Cisco 7000 and 7500 Series Routers

The CSA provides high-performance compression for serial interfaces (T1/E1), ISDN—Primary Rate Interface (PRI), Basic Rate Interface (BRI), and channelized interfaces, and High-Speed Serial Interface (HSSI). The Versatile Interface Processor 2-40 (VIP2-40) and VIP2-50 distribute router services, running the Cisco IOS software compression algorithm on the CSA and accelerating the compression process. On Cisco RSP7000 and 7500 series routers, the CSA requires a single adapter slot on a VIP2-40 or VIP2-50 and provides compression services for the second port adapter within the same VIP.

CSA and Cisco 7200 Series Routers

In a Cisco 7200 router, the CSA provides compression services for all other port adapters within the same chassis. The Cisco CSA requires a single slot in the Cisco 7200 chassis. Cisco IOS compression software is fully executed on the CSA coprocessor, freeing the network processing engine (NPE) of the Cisco 7200 for routing tasks. The Cisco 7200 also supports multiple CSAs in the same chassis.

Benefits

- Optimizes WAN bandwidth
 - Maximizes WAN link efficiency
 - Greater WAN throughput reduces application transmission delays
- Reduces WAN operating costs
 - Reduces frame size, which lowers transmission times
 - Transfers more data over the same WAN infrastructure, reducing the need for costly additional WAN links
- Maximizes system resources
 - Distributed services free router engine for main routing tasks, improving performance
 - Simultaneous support for multiple circuits
 - Hardware-assisted compression provides maximum compression performance where required
- Supports industry standards
 - Implements STAC (QIC122) compression algorithms
 - Supports all Cisco IOS network protocols

Specifications

- Physical
 - Single-wide service adapter
 - Independent compression and decompression engines
 - LED status indicators: Enabled, Active, Error
- Throughput
 - Compresses and decompresses at the same time (full-duplex operation)
 - Compresses up to 30 Mbps of raw data to 13 Mbps to compressed data (compression ratio 2.30)¹
 - Decompresses up to 13 Mbps of compressed data to 30 Mbps of raw data (compression ratio 2.30)¹
- Platform support
 - Cisco 7505, 7507, 7513 with VIP2-40 or VIP2-50
 - Cisco 7000 and 7010 with RSP7000 and VIP2-40 or VIP2-50
 - Cisco 7204, 7206
- WAN protocol support
 - Point-to-Point Protocol (PPP)
 - Frame Relay

Ordering Information

The CSA is available in two models, differing in the number of logical circuits supported.

- SA-Comp/1 supports 64 logical circuits
- SA-Comp/4 supports 256 logical circuits
- Requires Cisco IOS Release 11.1(6)CA, 11.2(7)P. 11.3, and later

1. Compression ratio is highly dependent on the raw, precompressed data and can vary significantly.



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