

# Cisco Content Services Gateway – Second Generation Release 4

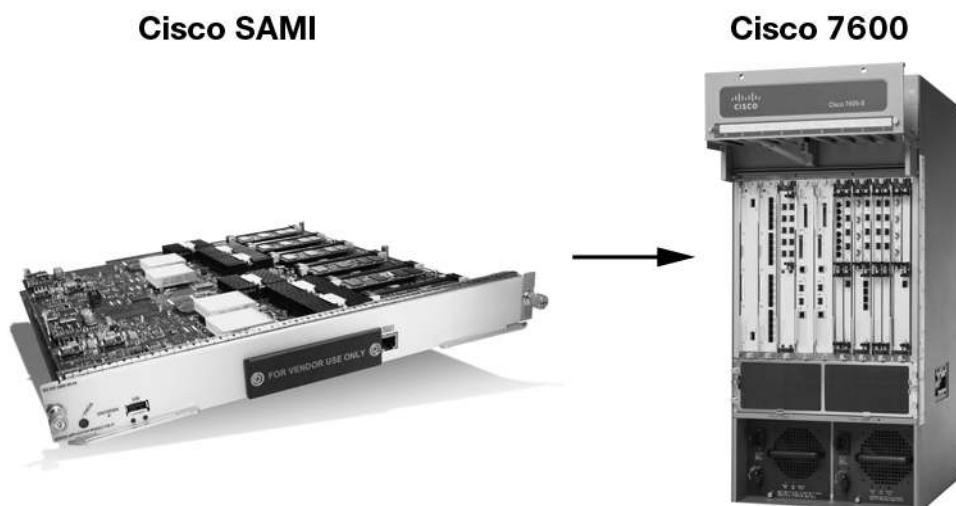
## Product Overview

The Cisco® Content Services Gateway – Second Generation (CSG2) provides intelligent network capabilities such as flexible policy management and charging based on deep packet inspection, as well as subscriber- and application-awareness capabilities that enable mobile operators to quickly and easily offer value-added, differentiated services over their mobile data networks. The CSG2 is the highly scalable, fault-tolerant solution that has been deployed by mobile operators worldwide to help them meet the demands of their rapidly growing mobile broadband services.

The Cisco CSG2 Release 4 builds upon Cisco's market-leading Content Services Gateway technology. With its deep packet inspection capability, operators can analyze, optimize, secure, and meter all traffic flows, including content-based services. The CSG2 delivers the flexibility and performance essential for operators to offer value-added, revenue-generating services to increase average revenue per user (ARPU) and ensure customer loyalty.

The Cisco CSG2 is an application deployed on the Cisco Service Application Module for IP (SAMI), which provides high-capacity parallel processing to the Cisco 7600 Series Routers (Figure 1). Together these technologies deliver the scalability and performance requisite for current and next-generation Mobile Internet solutions.

**Figure 1.** Cisco CSG2 on the SAMI, for the Cisco 7600 Series



## Cisco Mobile Internet

The Cisco CSG2 is part of Cisco's Mobile Internet portfolio of solutions and can readily interface to all the control elements in a mobile network, including multiple Radio Access Networks (RANs), back-end billing systems, policy control systems, content-filtering, and compression solutions. Mobile operators can install and deploy Cisco Mobile Internet solutions without disrupting any services.

Cisco has demonstrated the interoperability of the platform with many popular RAN solutions as well as authentication, authorization, and accounting (AAA); content billing; policy control, content filtering; and compression solutions, relieving mobile operators of the need to dedicate resources to ensure a smooth deployment. More than 100 mobile operators worldwide have deployed Cisco Mobile Internet solutions. In addition, Cisco's strong partnerships with top billing, policy, mediation, and filtering vendors provide an end-to-end content billing and filtering solution.

## Features and Benefits

The Cisco CSG2 provides the following benefits to mobile operators:

- Superior price and performance for high-data-demand mobile networks
- Controlled and differentiated subscriber access to services via policy control
- Pricing capabilities that differ per service and per event
- Greater revenue generation from content-aware billing
- Compliance with governmental and self regulation for content control

Table 1 lists the Cisco CSG2 capabilities and Table 2 lists the new features available with Release 4.

**Table 1.** Key Functionality

Function	Benefit
<b>Service-aware content measurement</b>	<ul style="list-style-type: none"> <li>• Meters data traffic and generates accounting records at the content and service level</li> <li>• Enables differentiated billing based on the actual object requested</li> <li>• Supports different rates for different services, according to the operator's pricing strategy</li> </ul>
<b>Real-time, prepaid billing support</b>	<ul style="list-style-type: none"> <li>• Meters subscriber usage so that the subscriber cannot exceed the balance allocated by the billing system</li> <li>• Supports per-service balance and allocation</li> <li>• Provisions for free services as well as services that provide a credit</li> <li>• Balance allocation can be a specified number of transactions, a specified number of bytes, or service duration</li> </ul>
<b>Dynamic policy and service management</b>	<ul style="list-style-type: none"> <li>• Policy and Charging Enforcement Function (PCEF) functionality for usage and quality-of-service (QoS) control</li> <li>• User-level and service-level control</li> <li>• Standards-based Diameter Gx interface</li> <li>• Advanced Gx+ Cisco extensions for Layer 7 DPI functionality</li> </ul>
<b>Specific user-awareness capability</b>	<ul style="list-style-type: none"> <li>• Identifies and correlates users based on IP addresses obtained from AAA RADIUS flows or from an XML database</li> <li>• Records subscriber access information and charging identification that can be provided to the billing system in conjunction with regular charge reporting, thus allowing charge differentiation based on access and offloading significant correlation load from the billing system</li> </ul>
<b>Open interface with multiple billing agents</b>	<ul style="list-style-type: none"> <li>• Standard, open base protocols are used to communicate with the billing mediation or billing devices</li> <li>• Provides failover in the event that one of the billing systems becomes unavailable</li> <li>• Provides robust reporting</li> </ul>
<b>Use of content for data mining</b>	<ul style="list-style-type: none"> <li>• Service providers can gather subscriber network, service, and content-usage data across their networks</li> <li>• Providers can apply business intelligence to the collected information to better understand user transaction behaviors and apply that knowledge to marketing and partnership strategies</li> <li>• Traffic patterns can also be analyzed for use in QoS plans</li> <li>• Popular sites can be identified and approached with real data to justify opportunities for content-delivery hosting</li> </ul>
<b>Content filtering</b>	<ul style="list-style-type: none"> <li>• Provides support for dynamic content filtering in conjunction with Cisco partners</li> <li>• Service providers can provide personal filtering based on blacklists and whitelists, allowing access to content deemed appropriate or on a paid-for basis</li> </ul>

**Table 2.** Cisco CSG2 Release 4 Features and Benefits

Feature	Benefit
Enhanced Gateway General Packet Radio Service Support Node (eGGSN)	<ul style="list-style-type: none"><li>• eG-CDR via Cisco GGSN Gy</li><li>• Final unit indication</li></ul>
Charging Enhancements	<ul style="list-style-type: none"><li>• Layer 7 DNS billing and virtual contents</li><li>• Activity-based time billing</li><li>• User log-off notification</li><li>• Billing plan subscriber counts</li><li>• Increased number of detection points</li></ul>
Dynamic Policy and Service Enhancements	<ul style="list-style-type: none"><li>• Gx: Dynamic redirection</li><li>• Gx: Per-subscriber volume and time usage reporting</li></ul>
General Enhancements	<ul style="list-style-type: none"><li>• HTTP header insertion</li><li>• Content access control</li><li>• iSCSI MIB</li><li>• Increased RADIUS proxy/endpoint scaling</li><li>• Additional NBAR1 Protocol recognition (P2P VoIP)</li></ul>

## Product Specifications

### Service manager support:

- Cisco CSG2 Release 4 is supported by Cisco Mobile Wireless Transport Manager (MWTM) 6.1.

### Configuration limits:

- 32,768 content policy pairs
- 2048 total contents with 2033 available for user configuration
- 1024 services
- 100 MB of map storage; total number of maps and matches vary by configuration
- 8192 policies
- 32 maximum active QS/BMA
- Up to nine Cisco CSG2s can be installed in a Cisco 7600 Series chassis

### Performance:

- Up to 1,400,000 concurrent sessions per 1-GB SAMI 2.0 module
- Up to 4,750,000 concurrent sessions per 2-GB SAMI 2.0 module
- Up to 500,000 connected subscribers per 1-GB SAMI 2.0 module
- Up to 1.25 million connected subscribers per 2-GB SAMI 2.0 module
- Up to 4500 Advices of Charge (AOCs) per second
- Up to 7500 data plane Layer 7 transactions per second
- Up to 12,000 data plane Layer 4 transactions per second

### Throughput:

- Throughput performance per Cisco CSG2 is up to 8 Gbps.

## System Requirements

**Table 3.** System Requirements

Product Type	Product Description
<b>Chassis</b>	Cisco 7604, 7606, and 7613 chassis
<b>Supervisor</b>	Supervisor Engine 32, 720-3BXL, and Route Switch Processor (RSP) 720
<b>Software</b>	Minimum Cisco IOS® Software Release 12.2SRC (SAMI with 2GB memory)
<b>SAMI</b>	Minimum Cisco IOS Software Release 12.4(22)MD

## Ordering Information

To place an order, visit the Cisco Ordering Home Page. To download software, visit the Cisco Software Center.

**Table 4.** Ordering Information

Product Name	Part Number
<b>Service Application Module for IP 6 x PPCs with 2GB (Crypto)</b>	WS-SVC-SAMI-BB-K9 (=)
<b>CSG3 R4 RTU License (License per SAMI)</b>	SSAC40K9-12424MD (=)
<b>CSG2 10,000 Connected Subscribers</b>	FL-SC-10K-SUB
<b>CSG2 100,000 Connected Subscribers</b>	FL-SC-100K-SUB
<b>CSG2 R3 to R4 Upgrade License</b>	FL-SC-R3R4-K9-UP

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## For More Information

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