

# Cisco Content Services Gateway - Second Generation Release 6

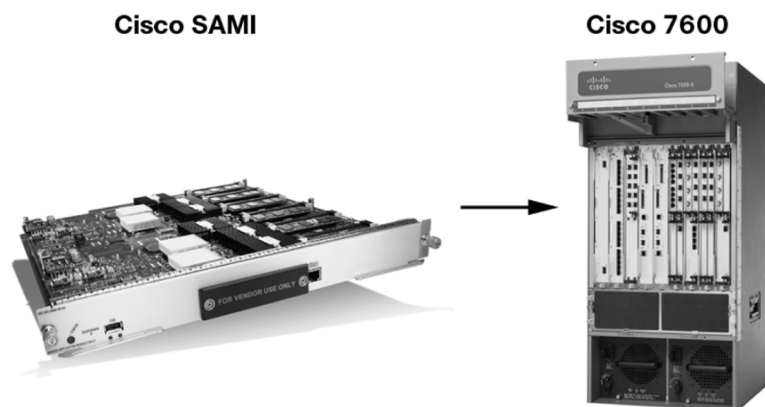
## Product Overview

The Cisco® Content Services Gateway - Second Generation (CSG2) provides intelligent network capabilities such as flexible policy management and charging based on deep packet inspection (DPI), as well as subscriber- and application-awareness capabilities that help mobile operators to quickly and easily offer value-added, differentiated services over their mobile data networks. Cisco CSG2 is a 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.

Cisco CSG2 Release 6 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 Cisco CSG2 delivers the flexibility and performance essential for operators to offer value-added, revenue-generating services to increase average revenue per user (ARPU) and achieve customer loyalty.

The Cisco CSG2 is an application deployed on the Cisco Service and 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 Cisco SAMI, for the Cisco 7600 Series Routers



## 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 major 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 through policy control
- Pricing capabilities that differ per service and per event
- Greater revenue generation from content-aware billing
- Compliance with governmental regulation and self-regulation for content control

Table 1 lists the Cisco CSG2 capabilities and Table 2 lists the new features available with Release 6.

**Table 1.** Major Features and Benefits

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>• Supports 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>• Supports balance allocation based on a specified number of transactions, a specified number of bytes, or a 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>• Uses standard, open-base protocols 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 comprehensive reporting</li> </ul>
<b>Use of content for data mining</b>	<ul style="list-style-type: none"> <li>• Allows service providers to gather subscriber network, service, and content-usage data across their networks</li> <li>• Helps providers to apply business intelligence to the collected information to better understand user transaction behaviors and apply that knowledge to marketing and partnership strategies</li> <li>• Supports analysis of traffic patterns for use in QoS plans</li> <li>• Lets providers identify popular sites and approach the sites 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>• Allows service providers to provide personal filtering based on blacklists and whitelists, granting access to content deemed appropriate or on a paid-for basis</li> </ul>
<b>IPv6 and dual stack bearer support</b>	<ul style="list-style-type: none"> <li>• IPv4, IPv6, and IPv4v6 (dual stack) user element support for data interfaces</li> <li>• Gx IPv6-related triggers</li> </ul>

Function	Benefit
<b>Gx enhancements</b>	<ul style="list-style-type: none"> <li>• New IPv6 AVP support (framed-IPv6-prefix, 3GPP-SGSN-IPv6-address)</li> <li>• IPv6 flow filters (3GPP and Cisco rules)</li> <li>• Additional Gx events reporting</li> <li>• Policy control at service group level</li> </ul>
<b>Cisco Network-Based Application Recognition (NBAR) Voice-over-IP (VoIP) enhancements</b>	<ul style="list-style-type: none"> <li>• Recognition of MSN VoIP</li> <li>• Recognition of Yahoo VoIP</li> <li>• Recognition of GoogleTalk VoIP</li> </ul>
<b>Configurable call detail record (CDR) blockage</b>	<ul style="list-style-type: none"> <li>• Blocks reporting of all transaction-level CDRs</li> <li>• Blocks reporting of only prepolicy transaction-level CDRs</li> <li>• Blocks reporting of transaction-level CDRs of unknown users only</li> <li>• Blocks reporting of all transaction-level and all service-level CDRs of prepaid users</li> </ul>
<b>Performance enhancements</b>	<ul style="list-style-type: none"> <li>• Acceleration support for HTTP, NBAR and Layer 4 inspection, providing increased packets per second (PPS) throughput</li> </ul>

**Table 2.** Cisco CSG2 Release 6 New Features and Benefits

<b>Unknown user blocking</b>	<ul style="list-style-type: none"> <li>• Blocks unknown user traffic</li> <li>• Blocked unknown user counter</li> </ul>
<b>Content policy priority changes</b>	<ul style="list-style-type: none"> <li>• Dynamic configuration changes for content policy priority</li> </ul>
<b>Header insertion</b>	<ul style="list-style-type: none"> <li>• Allow HTTP flows with header insertion to be accelerated</li> </ul>
<b>Gx enhancement</b>	<ul style="list-style-type: none"> <li>• Nonresetting usage query from Policy and Charging Rules Function (PCRF) Re-auth Request RAR</li> <li>• Performance enhancement for Gx user activation</li> </ul>
<b>Attribute map enhancements</b>	<ul style="list-style-type: none"> <li>• Increase to 4 maps per policy, 1 primary and 3 supplemental</li> <li>• Single attribute map that may contain multiple match keywords</li> </ul>
<b>Data acceleration</b>	<ul style="list-style-type: none"> <li>• Configurable acceleration volume parameters</li> <li>• Acceleration of aggregated sessions for Gx rules, users, services, and service groups</li> <li>• Acceleration support for Real Time Streaming Protocol (RTSP), Session Initiation Protocol (SIP), and FTP</li> <li>• Detailed acceleration stats</li> </ul>
<b>Miscellaneous</b>	<ul style="list-style-type: none"> <li>• Change of Authorization (CoA) correlator ID and fragmentation</li> <li>• Ability to release user connections</li> <li>• Content description</li> <li>• RADIUS TLV persistence</li> <li>• Content multiple IP filter support</li> <li>• GTP round-trip time (RTT) reporting</li> <li>• KUT billing plan name filter</li> <li>• Forced service stop</li> <li>• User agent reporting</li> <li>• Additional information in service stop</li> <li>• Service Group information in charging data records CDRs</li> </ul>

## Product Specifications

Service manager support:

- Supported by Cisco Mobile Wireless Transport Manager (MWTM) 6.1.6

Configuration limits:

- 32,768 content policy pairs
- 2048 total contents with 2033 available for user configuration
- 1024 services
- 100 MB to 400 MB of map storage; total number of maps and matches vary by configuration

- 8192 policies
- 32 maximum active Quota Server QS/Billing media agent BMA
- Up to nine Cisco CSG2s can be installed in a Cisco 7600 Series chassis

Performance:

- Up to 4,750,000 concurrent sessions per 2-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

## System Requirements

Table 3 lists system requirements for the Cisco CSG2.

**Table 3.** System Requirements

Product Type	Product Description
<b>Chassis</b>	Cisco 7604, 7606, 7609, and 7613 chassis
<b>Supervisor</b>	Supervisor Engine 32, 720-3BXL, and Route Switch Processor (RSP) 720
<b>Software</b>	Cisco IOS <sup>®</sup> Software Release 12.2SRC (SAMI with 2GB memory) or later
<b>SAMI</b>	Cisco IOS Software Release 12.4(24)MDA1 or later

## Ordering Information

To place an order, visit the [Cisco Ordering Home Page](#). To download software, visit the Cisco Software Center. For part numbers, refer to Table 4.

**Table 4.** Ordering Information

Product Name	Part Number
<b>Service Application Module for IP 6 x PPCs with 1GB (Crypto)</b>	WS-SVC-SAMI-BB-K9 (=)
<b>Service Application Module 2GB UPG</b>	MEM-SAMI-6P-2GB (=)
<b>CSG2 R6 RTU License (License per SAMI)</b>	SSBC60K9-12424MDB (=)
<b>CSG2 10,000 Connected Subscribers</b>	FL-SC-10K-SUB
<b>CSG2 100,000 Connected Subscribers</b>	FL-SC-100K-SUB
<b>CSG2 R5 to R6 Upgrade License</b>	FL-SC-R5R6-K9-UP (=)

## Cisco Services

Cisco Services make networks, applications, and the people who use them work better together. Today, the network is a strategic platform in a world that demands better integration between people, information, and ideas. The network works better when services, together with products, create solutions aligned with business needs and opportunities. The unique Cisco Lifecycle approach to services defines the requisite activities at each phase of the network lifecycle to help ensure service excellence. With a collaborative delivery methodology that joins the forces of Cisco, our skilled network of partners, and our customers, we achieve the best results.

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## For More Information

For more information about Cisco mobile wireless products and solutions, visit <http://www.cisco.com/go/mobile>.



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