

# Cisco Wide Area Application Services on Cisco Services Ready Engine Modules for Cisco Integrated Services Routers Generation 2

## Product Overview

Cisco® Wide Area Application Services (WAAS) Software on Cisco Integrated Services Routers Generation 2 (ISR G2) provides router-integrated, on-demand WAN optimization and application acceleration for branch offices. Cisco WAAS has been designed since inception to provide the highest degree of integration with Cisco routing solutions. Cisco WAAS offers the option to integrate physically with first- and second-generation Cisco ISRs. The Cisco Services Ready Engine (SRE) Modules on the ISR G2 platform, which decouple software services from the underlying hardware, can deliver WAN optimization as an on-demand service as required for business objectives and IT budget. This approach allows organizations to make better use of existing investments while offering business agility (Figure 1).

**Figure 1.** Cisco SRE Module



Cisco WAAS is a comprehensive WAN optimization and application acceleration solution that is a crucial component of Cisco Borderless Networks and data center and virtualization architectures. It accelerates applications and data over the WAN, optimizes bandwidth, empowers cloud computing, and provides local hosting of branch IT services, all with industry-leading network integration.

Cisco WAAS helps achieve IT objectives including:

- Enhance branch-office and mobile user productivity by optimizing application performance
- Reduce costs by enabling centralization of IT resources and reducing bandwidth expenses
- Increase IT agility with faster delivery of branch-office services with the services-ready module
- Lower branch-office operating expenses through integration of functions on a router platform

The Cisco WAAS advantages include:

- Application-specific acceleration validated by application vendors
- Network integration that preserves existing network services and results in ease of operations
- Cost-effective solution with router-integrated modules for branch offices

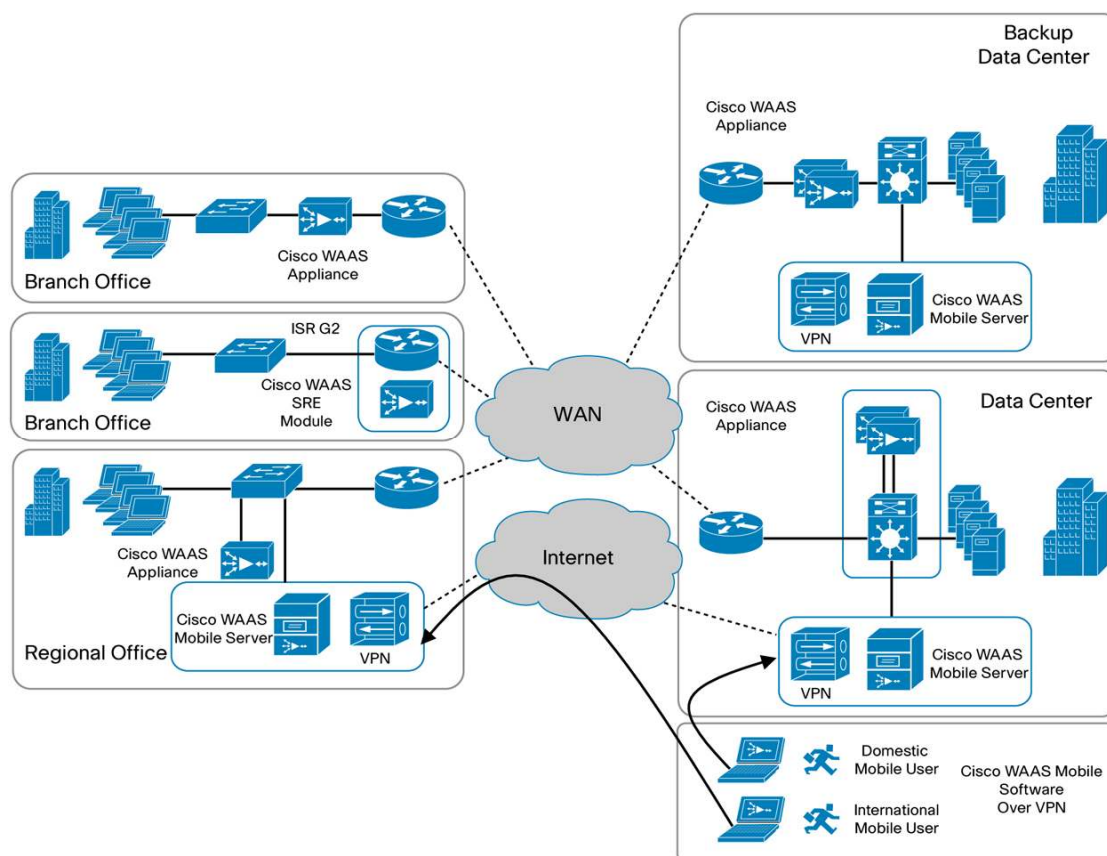
## Cisco WAAS Product Portfolio

Cisco WAAS platforms are available as appliances and as integrated modules for Cisco ISR and ISR G2 platforms.

- Appliance-based product lines include Cisco Wide Area Application Engine (WAE) and Wide Area Virtualization Engine (WAVE) products.
- Integrated modules are available as Cisco SRE Modules for Cisco ISR G2 routers and Cisco WAAS Network Modules (NMEs) for Cisco ISR and ISR G2 routers. NME adaptors are required to use network modules on the Cisco ISR G2 platforms.

The Cisco WAAS product line is designed to scale from small to very large enterprise-wide deployments. Cisco WAAS Modules for Cisco ISRs typically are deployed as edge devices at branch-office locations. Cisco WAE and WAVE appliances are deployed symmetrically as edge devices at branch-office locations and as core devices at the data center, as shown in Figure 2.

**Figure 2.** Cisco WAAS Deployment Architecture



## Features and Benefits

Cisco WAAS on Cisco SRE Modules delivers the features and benefits listed in Table 1.

**Table 1.** Features and Benefits

Feature	Benefit
<b>On-demand provisioning</b>	<ul style="list-style-type: none"> <li>Customer can provision solutions, such as Cisco WAAS, either at the time of SRE installation or remotely any time thereafter.</li> <li>Remote installation and activation eliminates the need for separate truck-roll, service calls, and onsite IT personnel.</li> </ul>
<b>Flexible ordering options</b>	<ul style="list-style-type: none"> <li>Customers have flexibility to order Cisco WAAS Software either along with SRE modules for a preinstalled WAAS version or separately to remotely install and activate WAAS software on predeployed SRE modules.</li> </ul>
<b>Integrated module</b>	<ul style="list-style-type: none"> <li>Cisco SRE Modules have a small physical and carbon footprint, reducing administrative costs and saving energy costs.</li> </ul>
<b>Dedicated onboard processing, memory, and hard drive</b>	<ul style="list-style-type: none"> <li>Dedicated hardware resources on Cisco SRE Modules help ensure maximum concurrent routing and application performance.</li> </ul>
<b>RAID-1 hard-drive redundancy on Cisco SRE 900 Service Module (SM)</b>	<ul style="list-style-type: none"> <li>One-to-one hard-drive redundancy increases the availability and robustness of the network.</li> <li>Hard drives are field-replaceable and hot-swappable.</li> </ul>
<b>Integration with Cisco ISR G2 and Cisco IOS<sup>®</sup> Software</b>	<ul style="list-style-type: none"> <li>Cisco WAAS on Cisco SRE Modules can be configured through Cisco Configuration Professional or the Cisco IOS Software command-line interface (CLI).</li> <li>A single-screen configuration option and proactive setup diagnostics enhance ease of deployment.</li> </ul>

## Management Solutions

Network management applications are available to configure and manage Cisco WAAS and Cisco SRE Modules from the deployment phase to the operational phase. They help to lower operating expenses and improve network availability by simplifying and automating many of the management tasks.

Table 2 lists network management solutions for Cisco WAAS on Cisco SRE Modules.

**Table 2.** Network Management Solutions for Cisco WAAS on Cisco SRE Modules

Operational Phase	Application	Description
<b>Device-based configuration</b>	<a href="#">Cisco Configuration Professional</a>	Cisco Configuration Professional is a GUI device-management tool for Cisco IOS Software and Cisco SRE Modules. Easy-to-use wizards simplify Web Cache Communication Protocol (WCCP) configuration.
<b>Networkwide deployment, configuration, monitoring, and troubleshooting</b>	<a href="#">CiscoWorks LAN Management Solution (LMS)</a>	CiscoWorks supports the basic platform services of the integrated services routers and provides added-value support for Cisco SRE Modules, enabling the management and distribution of software images to the Cisco SRE Module and thereby reducing the time and complexity associated with image management.
<b>Cisco WAAS deployment, configuration, and monitoring</b>	<a href="#">Cisco WAAS Central Manager</a>	Cisco WAAS Central Manager is used to centrally configure, manage, and monitor a topology of Cisco WAAS platforms.

## Product Specifications

### Cisco WAAS for Cisco SRE SM Platform Support

Cisco WAAS for Cisco SRE SM is supported on Cisco SRE 700 SM and SRE 900 SM Modules. Cisco WAAS is not supported on the Cisco SRE 300 Integrated Services Module (ISM). Table 3 shows the Cisco WAAS for Cisco SRE SM support on Cisco ISR G2 platforms.

**Table 3.** Cisco WAAS Support on Cisco SRE Modules and Cisco ISR G2 Platforms

Platform	Cisco SRE 700 SM	Cisco SRE 900 SM
<b>Cisco 1941 and 2901</b>	No	No
<b>Cisco 2911, 2921, and 2951</b>	WAAS 4.2 or later	WAAS 4.2 or later
<b>Cisco 3925 and 3945</b>	WAAS 4.2 or later	WAAS 4.2 or later
<b>Cisco 3925E and 3945E</b>	WAAS 4.3 or later	WAAS 4.3 or later

## Cisco WAAS on Cisco SRE SM Software License Options

Cisco WAAS Software is licensed with two types of feature capability for deployment on the Cisco SRE Modules. In addition, multiple license options are available to customers according to the size of their branch-office networks. The software licenses are common across Cisco SRE 700 SM and SRE 900 SM. Tables 4 through 6 summarize the software license options.

**Table 4.** Cisco WAAS Features Supported in Transport and Enterprise Licenses

Cisco WAAS License Type	Features Supported
<b>Transport license</b>	Supports WAN optimization features including Data Redundancy Elimination (DRE), Lempel-Ziv (LZ) compression, and Transport Flow Optimization (TFO)
<b>Enterprise license</b>	Includes Cisco WAAS Transport license functions plus application-specific accelerations for protocols including Common Internet File System (CIFS), Messaging Application Programming Interface (MAPI), HTTP, Secure Sockets Layer (SSL), Network File System (NFS), and Microsoft Windows print services

**Table 5.** Cisco WAAS for Cisco SRE SM License Sizes

Cisco WAAS for SRE SM License Size	Size of Branch Offices
<b>Small deployment</b>	Small branch office (1-20 users)
<b>Medium deployment</b>	Medium branch office (20-50 users)
<b>Large deployment</b>	Large branch office or regional office (50-100 users)

**Table 6.** Cisco WAAS Software Licenses Supported on Cisco SRE Modules

Cisco SRE Service Modules	Cisco WAAS Licenses Supported
<b>Cisco SRE 700 SM</b>	Transport: Small or medium Enterprise: Small or medium
<b>Cisco SRE 900 SM</b>	Transport: Small or medium Enterprise: Small, medium, or large

## Software Requirements

Tables 7 and 8 list software requirements.

**Table 7.** Cisco WAAS Software Requirements for Cisco SRE Modules

<b>Cisco WAAS Software version</b>	Cisco WAAS Version 4.2 or later
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**Table 8.** Cisco IOS Software Requirements

<b>Cisco IOS Software release</b>	Cisco IOS Software Release 15.0(1)M2 or later; Release 15.0(1)M3 or later recommended
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## Physical Specifications

For physical specifications of Cisco SRE Modules, please refer to

[http://www.cisco.com/en/US/prod/collateral/modules/ps10598/data\\_sheet\\_c78-553913.html](http://www.cisco.com/en/US/prod/collateral/modules/ps10598/data_sheet_c78-553913.html).

## Ordering Information

Table 9 lists part numbers for Cisco WAAS for SRE Modules on Cisco ISR G2.

To place an order, visit the [Cisco Ordering homepage](#). To download software, visit the [Cisco Software Center](#).

**Table 9.** Ordering Information

Part Number	Product Description
<b>SM-SRE-700-K9</b>	2GB DRAM, 512MB flash storage, 500GB hard disk, field replaceable hard disk.
<b>SM-SRE-900-K9</b>	4GB DRAM, 2GB flash storage, 2 x 500GB hard disk (1 TB storage), embedded cryptography chip, RAID 0/1 support, hot swappable hard disk.
<b>WAAS-TRN-SM-S</b>	WAAS Transport license for SRE SM. Small deployment.
<b>WAAS-TRN-SM-M</b>	WAAS Transport license for SRE SM. Medium deployment.
<b>WAAS-ENT-SM-S</b>	WAAS Enterprise license for SRE SM. Small deployment.
<b>WAAS-ENT-SM-M</b>	WAAS Enterprise license for SRE SM. Medium deployment.
<b>WAAS-ENT-SM-L</b>	WAAS Enterprise license for SRE SM. Large deployment.
<b>WAAS-VIDEO-WM-SM</b>	WAAS Video license for Windows for SRE SM.
<b>C2911-WAAS-SEC/K9</b>	Cisco 2911, SRE 700, Sec PAK, WAAS Enterprise License for Small branch bundle
<b>C2921-WAAS-SEC/K9</b>	Cisco 2921, SRE 700, Sec PAK, WAAS Enterprise License for Medium branch bundle
<b>C2951-WAAS-SEC/K9</b>	Cisco 2951, SRE 900, Sec PAK, WAAS Enterprise License for Large branch bundle
<b>C3925-WAAS-SEC/K9</b>	Cisco 3925, SRE 900, Sec PAK, WAAS Enterprise License for Large branch bundle
<b>C3945-WAAS-SEC/K9</b>	Cisco 3945, SRE 900, Sec PAK, WAAS Enterprise License for Large branch bundle

## Cisco Services

Cisco SRE hardware service and support is covered by the Cisco SMARTnet<sup>®</sup> contract for the router in which the module will reside. Applications supported by Cisco SRE have associated Cisco Software Application Support plus Upgrades (SASU) options, which you purchase separately; they are not included in the router or Cisco SRE Module Cisco SMARTnet contract.

## Warranty Information

Find warranty information at Cisco.com on the [Product Warranties](#) page.

## For More Information

For more information about Cisco WAAS and Cisco WAE solutions, visit <http://www.cisco.com/go/waas> or contact your local Cisco account representative.

For more information about Cisco ISR G2 and Cisco SRE Modules, visit <http://www.cisco.com/go/isrg2> and <http://www.cisco.com/go/sre> or contact your local Cisco account representative.



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