



Cisco vWAAS with Akamai Connect

This chapter provides an overview of Cisco vWAAS with Akamai Connect, and describes the hardware requirements for vWAAS with Akamai Connect, including how to upgrade vWAAS memory and disk for the Akamai Cache Engine (CE).

This chapter contains the following sections:

- [About Cisco vWAAS with Akamai Connect](#)
- [Supported Platforms for Cisco vWAAS with Akamai Connect](#)
- [Cisco vWAAS with Akamai Connect License](#)
- [Cisco vWAAS with Akamai Connect Hardware Requirements](#)
- [Upgrading vWAAS Memory and Disk for Akamai Connect](#)
- [Cisco vWAAS-150 with Akamai Connect](#)
- [Akamai Connect Cache Engine on Cisco Mid- and High-End Platforms](#)

About Cisco vWAAS with Akamai Connect

Cisco IWAN (Intelligent WAN) --- The Akamai Connect feature integrates an HTTP object cache inside Cisco WAAS. This allows WAAS to cache any HTTP content whether it is delivered via your internal corporate network, direct from the Internet, or from Akamai’s Intelligent Platform. For more information, see the “Configuring Application Acceleration” chapter, section “Akamai Connect and WAAS,” of the *Cisco Wide Area Application Services Configuration Guide*.

Supported Platforms for Cisco vWAAS with Akamai Connect

[Table 9-1](#) shows supported vWAAS models for Akamai caching up to 6,000 connections. [Table 9-2](#) shows supported vWAAS models for Akamai caching beyond 6,000 connections, and disk and memory requirements for Akamai caching beyond 6,000 connections

Table 9-1 *Supported vWAAS Models for Akamai Caching up to 6,000 Connections*

Appliance	SM	vWAAS	ISR-WAAS
		vWAAS-150	ISR-G2 and ISR-G3
WAVE-294	SM-700	vWAAS-200	ISR-WAAS-750 (ISR-4451, ISR-4431, ISR-4351, ISR-4331, ISR-4321)
WAVE-594	SM-900	vWAAS-750	ISR-WAAS-1300 (ISR-4451, ISR-4431)
WAVE-694	SM-710	vWAAS-1300	ISR-WAAS-2500 (ISR-4451)
	SM-910	vWAAS-2500	
		vWAAS-6000	

Table 9-2 Supported vWAAS Models and Memory/Disk Requirements for Akamai Connect beyond 6,000 Connections

vWAAS Model	Total HTTP Object Cache Connections (K)	Cache Engine Cache Disk (GB)	Additional Resource to be Added
vWAAS-12000	12	750	6GB RAM, 750 GB disk
vWAAS-50000	50	850	850 GB disk



Note

For vWAAS with WAAS Version 6.2.x, vWAAS with Akamai Connect beyond 6,000 connections is not supported for Cisco vWAAS on RHEL KVM or KVM on CentOS.

Cisco vWAAS with Akamai Connect License

Cisco IWAN with Akamai Connect is an advanced license that you can add to Cisco WAAS. The license for Cisco IWAN with Akamai Connect is aligned with the number of optimized connections in each supported Cisco WAAS model.

[Table 9-3](#) lists the standalone licenses for Cisco IWAN with Akamai Connect and vWAAS. For information on all licenses for Cisco IWAN with Akamai Connect, see the [Cisco Intelligent WAN with Akamai Connect Data Sheet](#).



Note

The actual number of connections for each Cisco IWAN with Akamai Connect License shown in [Table 9-3](#) is dependent on the hardware module on which WAAS is running.

Table 9-3 Licenses for Cisco IWAN with Akamai Connect with vWAAS

Cisco IWAN with Akamai Connect License	License Description	Supported Platforms (vWAAS platforms in bolded text)
SL-1300-AKC	Akamai Connect license for up to 1300 WAAS connections	<ul style="list-style-type: none"> • ISR-2900/ISR-3900 and one of the following: <ul style="list-style-type: none"> – vWAAS-1300 or lower (UCS-E) • ISR-4451, ISR-4431, ISR-4351, ISR-4331: <ul style="list-style-type: none"> – vWAAS-2500 or lower • UCS server: <ul style="list-style-type: none"> – vWAAS-1300 or lower • WAVE-594
SL-2500-AKC	Akamai Connect license for up to 2500 WAAS connections	<ul style="list-style-type: none"> • ISR-2900/ISR-3900 and one of the following: <ul style="list-style-type: none"> – vWAAS-2500 or lower (UCS-E) • ISR-4451: <ul style="list-style-type: none"> – vWAAS-2500 or lower • UCS server: <ul style="list-style-type: none"> – vWAAS-2500 or lower • WAVE-694
SL-6000-AKC	Akamai Connect license for up to 6000 WAAS connections	<ul style="list-style-type: none"> • ISR-2900/ISR-3900 and one of the following: <ul style="list-style-type: none"> – vWAAS-6000 or lower (UCS-E) • UCS server: <ul style="list-style-type: none"> – vWAAS-6000 or lower • WAVE-694

Cisco vWAAS with Akamai Connect Hardware Requirements

Table 9-4 shows the hardware requirements for Cisco UCS (Unified Computing System) E-Series and ISR-WAAS (Integrated Services Router-WAAS) for vWAAS with Akamai Connect.



Note

For information on hardware requirements for vWAAS with Akamai Connect on Hyper-V, see [Configuring GPT Disk Format for vWAAS-50000 on Hyper-V with Akamai Connect](#) in Chapter 5, “Cisco vWAAS on Microsoft Hyper-V”.

Table 9-4 Hardware Requirements for vWAAS with Akamai Connect

Cisco vWAAS or WAAS Model	Memory Required for vWAAS with Akamai Connect	Disk Required for vWAAS with Akamai Connect
vWAAS-150	4 GB	160 GB
vWAAS-200	4 GB	260 GB
vWAAS-750	4 GB	500 GB
vWAAS-1300	6 GB	600 GB
vWAAS-2500	8 GB	750 GB
vWAAS-6000	11 GB	900 GB

Cisco vWAAS or WAAS Model	Memory Required for vWAAS with Akamai Connect	Disk Required for vWAAS with Akamai Connect
vWAAS-12000	18 GB	1500 GB
vWAAS-50000	48 GB	2350 GB
ISR-WAAS-200	2 GB	170 GB
ISR-WAAS-750	4 GB	170 GB
ISR-WAAS-1300	6 GB	170 GB
ISR-WAAS-2500	8 GB	360 GB



Note

[Table 9-7](#) shows the WAAS Mid to High End Platform Cache Engine Memory Requirements. [Table 9-8](#) shows the WAAS Mid to High End Platform Cache Engine Cache Disk Requirements.

Upgrading vWAAS Memory and Disk for Akamai Connect

This section has the following information on upgrading upgrade memory and disk to use the Akamai Cache Engine:

- [Upgrading vWAAS Memory and Disk with WAAS v5.4.1x through v6.1.1x](#)
- [Upgrading vWAAS Memory and Disk with WAAS Version Earlier than v5.4.1](#)
- [Upgrading vWAAS Memory and Disk for vWAAS-12000 with ESXi](#)
- [Upgrading vWAAS Memory and Disk for vWAAS-12000 with Hyper-V](#)

Upgrading vWAAS Memory and Disk with WAAS v5.4.1x through v6.1.1x

If you are running vWAAS with WAAS Version 6.1.1x, the Akamai disk is added by default; you do not need to use the following upgrade memory and disk procedure to use the Akamai Connect feature with vWAAS.

Upgrading vWAAS Memory and Disk with WAAS Version Earlier than v5.4.1

If you running vWAAS with a WAAS version earlier than Version 5.4.1, and are using an ESXi version lower than Version 5.0, and want to upgrade to WAAS v5.4.1, v5.5.1, or v6.1.1, use the following update memory and disk procedure to use the Akamai Connect feature with vWAAS.

Before using this procedure, note the upgrade paths for WAAS Version 6.2.3 shown in [Table 9-5](#). For complete upgrade instructions, see the [Release Note for Cisco Wide Area Application Services](#).

Table 9-5 Upgrade Paths for WAAS Version 6.2.3

Current WAAS Version	WAAS CM Upgrade Path	WAAS Upgrade Path
5.5.3 and later	<ul style="list-style-type: none"> Upgrade directly to 6.2.3 	<ul style="list-style-type: none"> Upgrade directly to 6.2.3
4.3.x through 5.5.1	<ol style="list-style-type: none"> Upgrade to 5.5.3, 5.5.5x (5.5.5, 5.5.5a), or 5.5.7 Upgrade to 6.2.3 	<ol style="list-style-type: none"> Upgrade to 5.5.3 or 5.5.5x Upgrade to 6.2.3

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- Step 1** Power off the vWAAS.
- Step 2** Right-click the vWAAS and choose **Editing Settings...**
- Step 3** Choose **Add...**
- Step 4** At the **Add Hardware** dialog box, choose **Hard Disk**. Click **Next**.
- Step 5** At the **Select a Disk** dialog box, choose **Create a new virtual disk**. Click **Next**.
- Step 6** At the **Create a Disk** dialog box:
- At the **Capacity** dropdown lists, enter the size of the new disk.
 - At **Disk Provisioning**, choose **Thick Provision Lazy Zeroed**.
 - At **Location**, choose **Store with the virtual machine**.
 - Click **Next**.
- Step 7** At the **Advanced Options** dialog box:
- At the **Virtual Device Node** dropdown list, choose SCSI (0:2).
 - At Mode, choose **Persistent**.
 - Click **Next**.
- Step 8** At the **Ready to Complete** dialog box, confirm the following options:
- Hardware type
 - Create disk
 - Disk capacity
 - Disk provisioning
 - Datastore
 - Virtual Device Node
 - Disk mode
- Step 9** Click **Finish**.
- Step 10** The screen displays the status message **New hard Disk (adding)**. Click **OK**.
- Step 11** Wait until the **Recent Tasks** screen shows **Reconfigure Virtual machine** task as **Completed**. Power on.
- Step 12** To verify the new disk, display the current hardware listing with **Virtual Machine Properties > Hardware**.
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Upgrading vWAAS Memory and Disk for vWAAS-12000 with ESXi



Caution

When the vWAAS-12000 model is deployed, the RAM size is 12 GB and the /local/local1 directory size is 15 GB. When you enable Akamai Connect for vWAAS, you need to increase the RAM to 18 GB. This procedure alters the calculation of the local1 directory size for the vWAAS-12000, because the expected size would be 27 GB. The mismatch between the existing size (15 GB) for the local1 directory and the expected size (27 GB) triggers an alarm.

The mismatch between RAM size and disk size can cause a serious problem during a kernel crash in the vWAAS-12000, because the vmcore file would then be larger than what could be stored in the local1 directory.

To avoid the scenario described in the above Caution note, and to safely upgrade vWAAS memory and disk for Akamai Connect for the vWAAS-12000, follow these steps:

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- Step 1** Power off the vWAAS VM (Virtual Manager).
 - Step 2** Add an additional disk of the required size for your system.
 - Step 3** Increase the size of the RAM.



Note To run Akamai Connect on vWAAS-12000, you must increase the size of the RAM by at least 6 GB.

- Step 4** Power on the vWAAS VM.
- Step 5** Check the alarms.

The filesystem_size_mism alarm will be raised:

Critical Alarms

Alarm ID	Module/Submodule	Instance
-----	-----	-----
1 filesystem_size_mism	disk	Filesystem size

- Step 6** Use the **disk delete-data-partitions** command.



Note The **disk delete-data-partitions** command deletes cache files, including DRE cache files.

- Step 7** Reload.



Note You must reload the device after using the **disk delete-data-partitions** command. The reload process automatically re-creates data partitions, and initializes the caches. This process may take several minutes.

DRE optimization will not start until the DRE cache has finished initializing.

Upgrading vWAAS Memory and Disk for vWAAS-12000 with Hyper-V



Caution When the vWAAS-12000 model is deployed, the RAM size is 12 GB and the /local/local1 directory size is 15 GB. When you enable Akamai Connect for vWAAS, you need to increase the RAM to 18 GB. This procedure alters the calculation of the local1 directory size for the vWAAS-12000, because the expected size would be 27 GB. The mismatch between the existing size (15 GB) for the local1 directory and the expected size (27 GB) triggers an alarm.

The mismatch between RAM size and disk size can cause a serious problem during a kernel crash in the vWAAS-12000, because the vmcore file would then be larger than what could be stored in the local1 directory.

To avoid the scenario described in the above Caution note, and to safely upgrade vWAAS memory and disk for Akamai Connect for the vWAAS-12000, follow these steps:

- Step 1** Power off the vWAAS VM (Virtual Manager).
- Step 2** Add an additional disk of the required size for your system.
- Step 3** Increase the size of the RAM.



Note To run Akamai Connect on vWAAS-12000, you must increase the size of the RAM by at least 6 GB.

- Step 4** Increase the size of the kdump file from 12.2 GB to 19 GB.
To enable the kernel crash dump mechanism, use the **kernel kdump enable** global configuration command. To display kernel crash dump information for the device, use the **show kdump EXEC** command.
- Step 5** Power on the vWAAS VM.
- Step 6** Check the alarms.
The filesystem_size_mism alarm will be raised:

```
Critical Alarms
-----
```

Alarm ID	Module/Submodule	Instance
1 filesystem_size_mism	disk	Filesystem size

Step 7 Use the **disk delete-data-partitions** command.



Note The **disk delete-data-partitions** command deletes cache files, including DRE cache files.

Step 8 Reload.



Note You must reload the device after using the **disk delete-data-partitions** command. The reload process automatically re-creates data partitions, and initializes the caches. This process may take several minutes.

DRE optimization will not start until the DRE cache has finished initializing.

Cisco vWAAS-150 with Akamai Connect

For vWAAS for WAAS Version 6.1.1 and later, vWAAS-150 on ISR-WAAS is supported for Akamai Connect (AKC). For WAAS Version 6.2.1 and later, vWAAS-150 is also supported for RHEL KVM and Microsoft Hyper-V (Chapter 5, “[Cisco vWAAS on Microsoft Hyper-V](#)”).



Note Downgrading vWAAS-150 for RHEL KVM or for Microsoft Hyper-v to a version earlier than WAAS Version 6.2.1 is not supported.

Table 9-6 shows specifications for vWAAS-150.

Table 9-6 vWAAS-150 Profile

Feature	Description
Memory with Akamai Connect	4 GB
Disk with Akamai Connect	160 GB
vCPU	1 vCPU
module	Cisco UCS E-Series NCE blade (PID: UCS-EN120E-208-M2/K9), supported on Cisco ISR-G2 platform
NIM module	Cisco UCS E-Series NCE NIM blade (PID: UCS-EN140N-M2/K9), supported on Cisco ISR-G3 platform

WAAS Central Manager and Cisco vWAAS-150

For the Cisco vWAAS-150 model, the WAAS Central Manager (CM) must be WAAS Version 6.2.1 or later, but supports mixed versions of device models (Version 6.2.1 and earlier). The WAAS CM must be a higher or equal version than associated devices.



Note

The vWAAS-150 model is deployed for WAAS Version 6.1.1 only, so you cannot upgrade or downgrade the vWAAS-150 from Version 6.1.1.

Akamai Connect Cache Engine on Cisco Mid- and High-End Platforms

For WAAS Version 6.2.1 and later, the Akamai Connect Cache Engine (CE) is supported for scaling beyond 6,000 connections on the following platforms:

- WAVE-7541, WAVE-7571, and WAVE-8541
- vWAAS-12000 and vWAAS 50000

Scaling for these platforms is based on memory availability, scale performance, and the particular dynamic cache-size management feature. [Table 9-7](#) shows the connections, total memory, and cache engine memory requirements for each of these platforms. [Table 9-8](#) shows the connections, number of disks, and cache engine disks for each of these platforms.

The Akamai Connect CE connection-handling capacity is determined by the upper limit of memory that is given to the Akamai Connect CE at startup. The Akamai Connect CE will allocate memory as needed up to the upper limit; on approaching that limit, it will push back new connections. In case of overload, the connection will be optimized by HTTP-AO, without a caching benefit.



Note

For vWAAS-12000 and vWAAS-50000, HTTP object cache will scale up to the platform TFO limit. To achieve this, you must augment the platform resources (CPU, RAM, and disk) during provisioning.

For vWAAS-12000, you must allocate at least 6 GB of additional RAM.

For vWAAS-12000 and vWAAS-50000, you must allocate Cache Engine cache disk resources. Cache disk requirements are shown in [Table 9-8](#).

Table 9-7 WAAS Mid to High End Platform Cache Engine Memory Requirements

Cisco WAAS Platform	HTTP Object Cache Connections	CPU	Total Memory	Memory Required for Cache Engine
vWAAS-12000	12 K	4	18 GB	4308 M
vWAAS-50000	50 K	8	48 GB	14136 M
WAVE-7541	18 K	2	24 GB	5802 M
WAVE-7571	60 K/ 50 K/ 40 K	2	48 GB	15360 M/ 14125 M/ 11565 M
WAVE-8541	150 K/ 125 K/ 100 K	2	96 GB	38400 M/ 32000 M/ 25600 M

Table 9-8 *WAAS Mid to High End Platform Cache Engine Cache Disk Requirements*

Cisco WAAS Platform	HTTP Object Cache Connections	CPU	Disk/ CE Cache Disk	Cache Engine Cache Disk
vWAAS-12000	12 K	4	750 GB	750 GB
vWAAS-50000	50 K	8	1500 GB	850 GB
WAVE-7541	18 K	2	2200 GB	708 GB
WAVE-7571	60 K/ 50 K/ 40 K	2	3100 GB	839 GB
WAVE-8541	150 K/ 125 K/100 K	2	4.1 TB	675 GB