

Configuring Cisco ACNS Software 5.0 File Systems on Cisco Content Engines

This product bulletin summarizes the uses and built-in limits of the multiple configurable file systems in Cisco Application and Content Networking System (ACNS) Software 5.0 on supported Cisco Content Engine configurations.

1. How Big Is 1K?

All ACNS versions have used $K=1000$ for network bandwidth and $K=1024$ for memory, in keeping with usual industry practices. The tables in this document use $K=1024$ for disks, whereas usual industry practice is to use $K=1000$.

The prefix M is defined as $K \times K$, and G is defined as $K \times M$.

Since ACNS is converting over to the usual industry practice ($K=1000$ for disks) a future version of this document will include different data in these tables, simply because of the changed definition of K.

2. Multiple File Systems

Like Cisco[®] ACNS Software 4.2, Cisco ACNS Software 5.0 has four different file systems that are optimized for different aspects of Cisco ACNS Software. The four separately configured file systems are CDNFS, CFS, MEDIAFS, and SYSFS. The amount of user-configurable disk capacity depends on which features are turned on concurrently, as explained in the following paragraphs.

Note: The CDNFS file system serves the same functions as the file system called ECDNFS in Cisco ACNS Software 4.2.

The role of each of these file systems is described as follows:

- **CFS**—CFS is used by the HTTP caching and cache-preload subsystems to store cached HTTP objects. The ideal size depends on the HTTP traffic working set. Little-used objects cached in CFS may be discarded automatically to make room for more recently demanded objects (contrast with how objects are handled by CDNFS).
- **CDNFS**—CDNFS is used by the Cisco Content Delivery Network (CDN) subsystem to store pre-positioned content. CDNFS can be zero if CDN capabilities are not used. If CDN capabilities are used, CDNFS must be at least 2 GB. Objects stored in CDNFS are retained until replaced or deleted by the CDN management system (contrast with how objects are handled by CFS).
- **MEDIAFS**—MEDIAFS is used by streaming-media servers that support proxy-mode delivery (Real Proxy and Windows Media Technology [WMT] Proxy in Cisco ACNS Software 5.0) to cache streaming-media content. MEDIAFS can be zero if neither Real Proxy nor WMT Proxy is enabled. If either server is enabled, MEDIAFS must be at least 1 GB.



- *SYSFS*—SYSFS is used by the content engine to store temporary files, logs, and debugging information. There must be exactly one SYSFS file system, and it must be at least 1 GB. A content engine with heavy HTTP traffic and logging on every transaction needs a bigger SYSFS. Typically, SYSFS needs at least 10 percent of “user-configurable capacity.”

Note: No content is stored on the Cisco Content Distribution Manager (CDM) in Cisco ACNS Software 5.0. In contrast to Cisco ACNS Software 4.2, available disk space on the CDM should not be a significant factor in sizing a system.

3. Configurations and Sizes

Table 1 lists combinations of Cisco ACNS Software features that may be enabled. Each combination has a unique code number. Table 2 lists content engine configurations supported by Cisco ACNS Software 5.0. Each has a unique code letter.

A code letter alone is sufficient to determine the recommended SYSFS size and the remaining amount of space that can be allocated among CDNFS, CFS, and MEDIAFS. Subsequent tables require both a code letter and a code number to indicate the maximum possible space in each file system. Usually, maximizing the storage for any particular file system requires minimizing the storage available to others.

The following descriptions apply to the features listed in Table 1:

- “Real server” and “Real proxy” are enabled separately.
- “Windows media” enables both server and proxy capabilities for WMT.
- “Cisco streaming” enables server delivery of QuickTime and Motion Picture Experts Group (MPEG) formats.
- The Cisco Cluster Management Suite (CMS) enables management capabilities and is required for CDN deployments.
- HTTP caching is always enabled.



Table 1 Cisco ACNS Features

Code	Enabled Features
[1]	HTTP cache only
[2]	HTTP cache + Real server
[3]	HTTP cache + Real proxy
[4]	HTTP cache + Cisco streaming
[5]	HTTP cache + Windows media
[6]	HTTP cache + Cisco CMS
[7]	HTTP cache + Real proxy + Real server
[8]	HTTP cache + Real server + Windows media
[9]	HTTP cache + Real server + Cisco streaming
[10]	HTTP cache + Real proxy + Cisco streaming
[11]	HTTP cache + Real proxy + Windows media
[12]	HTTP cache + Cisco streaming + Windows media
[13]	HTTP cache + Real proxy + Cisco CMS
[14]	HTTP cache + Real server + Cisco CMS
[15]	HTTP cache + Windows media + Cisco CMS
[16]	HTTP cache + Cisco streaming + Cisco CMS
[17]	HTTP cache + Windows media + Real proxy + Real server
[18]	HTTP cache + Cisco streaming + Real proxy + Real server
[19]	HTTP cache + Cisco streaming + Real proxy + Windows media
[20]	HTTP cache + Cisco streaming + Real server + Windows media
[21]	HTTP cache + Windows media + Real proxy + Cisco CMS
[22]	HTTP cache + Windows media + Real server + Cisco CMS
[23]	HTTP cache + Windows media + Cisco streaming + Cisco CMS
[24]	HTTP cache + Real proxy + Real server + Cisco CMS
[25]	HTTP cache + Real proxy + Cisco streaming + Cisco CMS
[26]	HTTP cache + Real server + Cisco streaming + Cisco CMS
[27]	HTTP cache + Real server + Real proxy + Windows media + Cisco streaming
[28]	HTTP cache + Real server + Real proxy + Windows media + Cisco CMS
[29]	HTTP cache + Real server + Real proxy + Cisco streaming + Cisco CMS
[30]	HTTP cache + Real server + Cisco streaming + Windows media + Cisco CMS
[31]	HTTP cache + Real proxy + Cisco streaming + Windows media + Cisco CMS
[32]	HTTP cache + Real proxy + Real server + Cisco streaming + Windows media + Cisco CMS



Table 2 Content Engine Configuration Table

Code	Content Engine Model and Configuration
A	Cisco Content Engine 510 (part number CE-510), one 40-GB disk
B	CE-565, two 36-GB disks
C	CE-565, two 36-GB disks + attached Cisco Storage Array 7 (part number SA-7)
D	CE-7305, two 72-GB disks
E	CE-7305, two 72-GB disks + attached SA-14
F	CE-7325, six 72-GB disks
G	CE-7325, six 72-GB disks + attached SA-14
H	CE-507, one 18-GB disk
I	CE-507, two 18-GB disks
J	CE-560, two 36-GB disks
K	CE-560, two 36-GB disks + attached SA-6
L	CE-590, two 36-GB disks
M	CE-590, two 36-GB disks + attached SA-6
N	CE-7320, ten 18-GB disks
O	CE-7320, ten 18-GB disks + attached SA-12

Use Table 2 together with Table 3 to determine the appropriate letter. The numbers in each column of Table 3 indicate the recommended size for SYSFS in gigabytes, and the remaining configurable space that can be allocated among CDNFS, CFS, and MEDIAFS.

Table 3 Recommended SYSFS

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
SYSFS, GB	3	6	30	12	34	34	34	1	3	6	17	6	17	17	34
Remaining, GB	28	53	267	113	567	363	839	13	28	59	150	59	150	150	337



Use Table 2 together with Table 4 to determine the appropriate letter, and use Table 1 together with Table 4 to determine the appropriate bracketed number.

The intersection of the letter (column) and bracketed number (row) in Table 4 indicates the maximum configurable CDNFS in gigabytes.

Table 4 CDNFS Maximum Size

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
[6]	28	53	267	113	567	363	839	13	28	59	150	59	150	150	337
[13] – [16], [21] – [26], [28] – [32]	27	52	266	112	566	362	838	12	27	58	149	58	149	149	336
All others: CDNFS not used															

Use Table 2 together with Table 5 to determine the appropriate letter, and use Table 1 together with Table 5 to determine the appropriate bracketed number.

The intersection of the letter (column) and bracketed number (row) in Table 5 indicates the maximum configurable CFS in gigabytes.

Note: Where two numbers appear, the first number applies only to Cisco ACNS Software 5.0.1, and the second number applies to Cisco ACNS Software 5.0.3.

Note: Maximum CFS size may not yield the maximum caching performance. Caching performance also depends on the availability of sufficient memory.

Table 5 CFS Maximum Size

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
[1]	28	53	267	113	567	363	839	13	28	59	150	59	150	150	337
[2] – [6]	27	52	266	112	566	362	838	12	27	58	149	58	149	149	336
[7] – [12]	27	52	156	112	566	362	838	12	27	58	84	58	149	149	336
[13] – [16]	26	51	265	111	565	361	837	11	26	57	148	57	148	148	335
[17] – [20]	27	36 52	36 96	112	234	362	762	12	18	58	60	37 58	37 96	149	234
[21] – [26]	26	51	156	111	565	361	837	11	18	57	84	57	148	148	335
[27]	24	0 36	0 36	112	162	362	643	12	18	24	24	0 37	0 37	149	162
[28] – [31]	26	36 51	36 96	111	234	361	762	11	18	57	60	37 57	37 96	148	234
[32]	24	0 6	0 36	111	162	361	643	11	18	24	24	0 37	0 37	148	162

Use Table 2 with Table 6 to determine the appropriate letter, and use Table 1 with Table 6 to determine the appropriate bracketed number.

The intersection of the letter (column) and bracketed number (row) in Table 6 indicates the maximum configurable MEDIAFS in gigabytes.

Table 6 MEDIAFS Maximum Size

Configuration Number	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
[1], [6]: <i>MEDIAFS not used</i>															
[2] – [5], [7] – [12], [17]– [20], [27]	28	53	267	113	567	363	839	13	28	59	150	59	150	150	337
[13] – [16], [21] – [26], [28] – [32]	27	52	266	112	566	362	838	12	27	58	149	58	149	149	336



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