



Release Notes for Cisco Internet Streamer CDS 2.2

These release notes cover Cisco Internet Streamer CDS Release 2.2.1-b3.

Revised: June 25, 2008, OL-16951-02

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New Features

Release 2.2 of the Cisco Internet Streamer CDS introduces the following new features:

- Flash Media Streaming—Live streaming support
- Service Router—Service aware routing, content-based (content-affinity) routing, disk failure threshold



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- 3-Screen Session Shifting—For Windows Media Streaming and Movie Streamer using Web Services Infrastructure

For more information, see the “Product Overview” chapter in the *Cisco Internet Streamer CDS Software Configuration Guide*.

Flash Media Streaming

In Cisco Internet Streamer CDS Release 2.2, Flash Media Streaming uses Real Time Media Protocol (RTMP) to stream live content by means of dynamic proxy. Configuration of live or rebroadcast programs is not required. When the first client requests live streaming content, the stream is created. There are no limits to the number of live streams other than the system load. Live streaming uses distributed content routing to distribute streams across multiple Service Engines.

Flash Media Streaming automatically retries a connection to the Content Origin server in cases when the upstream live splitting connection fails. This failover does not require any additional retry or clicks from the client side. Clients see a sub-second buffering and content continues to play after that. This feature does not address failover when the Service Engine’s connection to the client fails. The primary advantage of this enhancement is making intra-CDS infrastructure more resilient.

Service Router

There are three new features involving the Service Router:

- Service aware routing
- Content-based (content-affinity) routing
- Disk failure threshold

In service aware routing, the Service Router redirects the request to the Service Engine if the required protocol engine is enabled, is functioning properly, and has not exceeded its thresholds, and if the Service Engine has not exceeded its thresholds as configured. Service aware routing is always enabled and is not configurable.

In content-based (content-affinity) routing, the Service Router redirects the request based on the Uniform Resource Identifier (URI). Requests for the same URI are redirected to the same Service Engine, provided the Service Engine’s thresholds are not exceeded. Content-based routing is best suited for cache, prefetched, and live program requests in order to maximize the hit ratio. The number of redundant copies of content is configurable for content-based routing. Redundancy is used to maximize the cache hit ratio.

When the number of failed CDS network file system (CDNFS) disks on a Service Engine exceeds the disk failure count threshold, no further requests are sent to the Service Engine.

3-Screen Session Shifting

The 3-Screen Session Shifting feature unifies the user interactions with different content streaming engines and enables seamless movement of user sessions to and from different client devices (PC, Mac, Mobile, and TV). With this feature, users can pause a streaming session on one device and resume it on a different device. This feature provides the intelligence for client detection and format selection. The 3-Screen Session Shifting interacts with the TV CDS as well.

3-Screen Session Shifting integrates with the delivery service configuration by linking three XML files that interact with content management and transcoding systems to obtain device-type mappings and content format mapping. 3-Screen Session Shifting works with entitlement servers to get the user identification and uses the user identification as a key to store user sessions.

Enhancements

In Release 2.2, Movie Streamer and Flash Media Streaming supports H.264 streaming of prefetched content, dynamically ingested content, and live content.

System Requirements

The CDS Internet Streaming runs on the CDE100 and CDE200 hardware models. The CDE100 may run as the CDSM, while the CDE200 may run as the Service Router or the Service Engine. See the *Cisco Content Delivery Engine CDE100/200/300/400 Hardware Installation Guide* for set up and installation procedures.

Limitations and Restrictions

This release contains the following limitations and restrictions:

- There is no NAT separating the CDEs from one another.
- Do not run the CDE with the cover off. This disrupts the fan air flow and causes overheating.

Important Notes

To maximize the content delivery performance of a CDE200, we recommend you do the following:

1. Use port channel for all client-facing traffic.

Configure interfaces number 3, 4, 5, and 6 (those on the quad-port Gigabit Ethernet Card) into a single port-bonding interface. Use this bonding channel, which provides instantaneous failover between ports, for all client-facing traffic. Use interfaces number 1 and 2 (the two on-board Ethernet ports) for intra-CDS traffic, such as management traffic, and configure these two interfaces either as standby or port-channel mode. Refer to the *Cisco Internet Streamer CDS 2.0-2.1 Software Configuration Guide* for detailed instruction.

2. Use the client IP address as the load balancing algorithm.

Assuming ether-channel (also known as port-channel) is used between the upstream router/switch and the SE for streaming real-time data, the ether-channel load balance algorithms on the upstream switch/router and the SE should be configured as "Src-ip" and "Destination IP" respectively. Using this configuration ensures session stickiness and general balanced load distribution based on clients' IP addresses. Also, distribute your client IP address space across multiple subnets so that the load balancing algorithm is effective in spreading the traffic among multiple ports.

3. Tune the TCP parameter.

On the CDE200, execute the following commands once (This tunes the internal TCP configuration for better content delivery performance over HTTP.):

```
Config# tcp server-satellite
Config# tcp client-satellite
Config# write memory
```

4. For high-volume traffic, separate HTTP and WMT.

The CDE200 performance has been optimized for HTTP and WMT bulk traffic, individually. While it is entirely workable to have mixed HTTP and WMT traffic flowing through a single CDE200 simultaneously, the aggregate performance may not be as optimal as the case where the two traffic types are separate, especially when the traffic volume is high. So, if you have enough client WMT traffic to saturate a full CDE200 capacity, we recommend that you provision a dedicated CDE200 to handle WMT; and likewise for HTTP. In such cases, we do *not* recommend that you mix the two traffic types on all CDE servers which could result in suboptimal aggregate performance and require more CDE200 servers than usual.

5. For mixed traffic, turn on the HTTP bitrate pacing feature.

If your deployment must have Streamers handle HTTP and WMT traffic simultaneously, it is best that you configure the Streamer to limit each of its HTTP sessions below a certain bitrate (for example, 1Mbps, 5Mbps, or the typical speed of your client population). This prevents HTTP sessions from running at higher throughput than necessary, and disrupting the concurrent WMT streaming sessions on that Streamer. To turn on this pacing feature, use the HTTP bitrate field in the CDSM Delivery Service GUI page.

Please be aware of the side effects of using the following commands for Movie Streamer:

```
Config# movie-streamer advanced client idle-timeout <30-1800>
Config# movie-streamer advanced client rtp-timeout <30-1800>
```

These commands are only intended for performance testing when using certain testing tools that do not have full support of the RTCP receiver report. Setting these timeouts to high values causes inefficient tear down of client connections when the streaming sessions have ended.

For typical deployments, it is preferable to leave these parameters set to their defaults.

Open Caveats

This release contains the following open caveats:

Flash Media Streaming

- CSCsq35801

Symptom:

The statistics displaying current live and VOD connections may fluctuate during stress testing. It does not have any adverse effect on the stream quality or transaction logs. These are just informational statistics and their inaccuracies are benign.

Workaround:

Retry the show command after a short interval of time.

- CSCso51064

Symptom:

Flash Media Streaming performance degrades during continuous requests for playback of very large files that are not cached or prefetched in the Service Engine. In addition, the playback is done only for a fraction of the total content playtime (less than 60 seconds) . The problem arises because the content caching is not stopped after the client has stopped the playback. This problem does not occur if the Service Routers are used together with the Service Aware Routing method, which is always enabled, and which removes the Service Engine from receiving any new request once either RAM, CPU, or DISK thresholds are reached.

Workaround:

Not required.

- CSCso64029

Symptom:

In rare cases the internal port 1935 required by the Flash Media Streaming can be reserved by another application. In such cases, Flash Media Streaming does not work unless this port is released by the other application. This was reported only once in development testing when Flash Media Streaming was not enabled in the startup configuration.

Workaround:

Enable Flash Media Streaming and save the configuration. Reload the Service Engine to release the dynamically reserved port 1935 by the other application.

- CSCso78725

Symptom:

A low-rate memory leak exists for Flash Media Streaming live streaming when clients connect and disconnect. It is currently under investigation by both Adobe and Cisco. The memory leak eventually results in a process restart after it has reached 2 GB per-process system limit.

Workaround:

Flash Media Streaming live streaming can be recovered using next-click failover or simply retry from the client player.

Movie Streamer

- CSCsq11663

Movie Streamer VOD performance is currently not optimized for all unique file cases. Depending on the client request pattern for the VOD files, fragmentation in the storage may form that affects the throughput. Additionally, disk I/O prefetch support is not present for the Movie Streamer VOD case, which would limit the throughput when all streams are unique and are served from disk.

Workaround:

None.

CDSM

- CSCsk22757

Symptom:

When Service Routers are not used for load balancing, the Service Engine continues to serve the proxy or cached content even after the Service Engine has been removed from the delivery service.

The Service Engine's association with a delivery service is not fully removed when the configuration change has been applied from the CDSM. All prefetched content and live program information are removed; cached content remains. Service Engines will continue to serve new proxy or cache-hit requests.

Workaround:

Use the Service Router for load balancing because it has the correct information about the configuration change and stops forwarding requests to the Service Engine that has been removed from the delivery service.

- CSCso46900

Symptom:

Non-administrator users cannot create Content Origins through the Content Origin page.

Conditions:

Log in to the CDSM using a username that does not have administrator privileges, but has permission to create, delete, or modify a delivery service.

Workaround:

- Create the Content Origin by using the New Content Origin button on the Delivery Service Definition page.
- Create the Content Origin by logging in as a user with administrator or power user privileges for all delivery service domain.

- CSCso44355

Symptom:

After a prefetched content file is removed from the delivery service, the content file can still be selected as a rebroadcast source.

Conditions:

For a delivery service, remove a prefetched content file, the database does not synchronize accordingly. The content file can still be retrieved by a rebroadcast program.

Workaround:

None

- CSCsq84208

Symptom:

When a user clicks the View Detail of Bytes Served chart at the home page and then clicks Update in the detailed system-wide Bytes Served chart, the system throws a java exception.

Conditions:

This exception only happens in the system-wide Bytes Served chart.

Workaround:

Try to avoid submitting the system-wide Bytes Served chart. Using an SE-specific chart does not cause an exception.

- CSCsq84279

Symptom:

When a non-administrator user tries to create a delivery service, the system throws a java null pointer exception.

Conditions:

If a delivery service is created and granted access to a non-administrator user and then deleted, the exception occurs.

Workaround:

Remove the entity from the domain before deleting the delivery service.

Resolved Caveats

The following caveats have been resolved since Cisco Internet Streamer CDS Release 2.0.0. Not all the resolved issues are mentioned here. The following list highlights associated with customer deployment scenarios.

Flash Media Streaming

- CSCsq18257

Symptom:

Display by way of type-tail command for fms_access and fms_auth logs are not displayed properly.

WMT

- CSCso55317

Symptom:

The **show program** command shows current live hierarchy even though the incoming stream path is different.

CDSM

- CSCso04454

Symptom:

The Web > HTTP Connections page goes to override mode and becomes editable.

- CSCso46900

Symptom:

Non-administrator user cannot create a Content Origin through Content Origin page.

- CSCso46926

Symptom:

Non-administrator user cannot create a new delivery service.

- CSCso47079

Symptom:

Non-administrator user cannot create new Device Groups.

- CSCso57280

Symptom:

Bandwidth Efficiency Gain graph sometimes shows negative values.

Upgrading from the Release 2.1 Software

In order to upgrade to Release 2.2 from Release 2.1, the following changes between Release 2.1 and Release 2.2 need to be considered.

- In Release 2.2, the keepalive messages between the Service Router and Service Engine are transmitted and received on port 2323. However, the Release 2.2 software interoperates with older software releases that do not use port 2323 for keepalive messages. If a firewall is configured between the Service Engine and the Service Router, port 2323/UDP has to be opened for the keepalive message to go through.
- In Release 2.2, several of the fields on the Live Streaming page for Movie Streamer live programs have changed. In order for live programs that were created in Release 2.1 to work in Release 2.2, all program names and reference URLs that have alphabetic characters must be lowercase.

Documentation Updates

The following documents have been updated for this release:

- *Cisco Internet Streamer CDS 2.0-2.2 Software Configuration Guide*
- *Cisco Internet Streamer 2.0-2.2 API Guide*
- *Cisco Internet Streamer 2.0-2.2 Quick Start Guide*
- *Cisco Content Delivery Engine 100/200/300/400 Hardware Installation Guide*
- *Regulatory Compliance and Safety Information for Cisco Content Delivery Engine 100/200/300/400*

The following documents have been added for this release:

- *Release Notes for Cisco Internet Streamer CDS 2.2*

Related Documentation

Refer to the following documents for additional information about the Cisco Internet Streamer CDS 2.0-2.2:

- *Cisco Content Delivery Engine 100/200/300/400 Hardware Installation Guide* (OL-13478-02)
http://www.cisco.com/en/US/docs/video/cds/cde/installation/guide/CDE_Install_Book.html
- *Cisco Internet Streamer CDS 2.0-2.2 Software Configuration Guide* (OL-13493-03)
http://www.cisco.com/en/US/docs/video/cds/cda/is/2_0/configuration/guide/is_cds20_22-cfguide.html
- *Cisco Internet Streamer CDS 2.0-2.2 Quick Start Guide* (OL-15479-02)
http://www.cisco.com/en/US/docs/video/cds/cda/is/2_0/quick/guide/ISCDSQuickStart.html

- *Cisco Internet Streamer CDS 2.0-2.2 API Guide* (OL-14319-03)
http://www.cisco.com/en/US/docs/video/cds/cda/is/2_0/developer/guide/cds20_22apiguide.html
- *Release Notes for Cisco Internet Streamer CDS 2.0* (OL-13494-02)
http://www.cisco.com/en/US/docs/video/cds/cda/is/2_0/release_notes/CDS_RelNotes2_0.html
- *Release Notes for the Cisco Internet Streamer CDS 2.1* (OL-15751-01)
http://www.cisco.com/en/US/docs/video/cds/cda/is/2_0/release_notes/CDS_RelNotes2_1.html
- *Cisco Content Delivery System 2.x Documentation Roadmap* (OL-13495-05)
http://www.cisco.com/en/US/products/ps7127/products_documentation_roadmaps_list.html
- *Regulatory Compliance and Safety Information for Cisco Content Delivery Engine 100/200/300/400* (78-18229-02)
http://www.cisco.com/en/US/docs/video/cds/cde/regulatory/compliance/CDE_RCSI.html

The entire CDS software documentation suite is available on Cisco.com at:

http://www.cisco.com/en/US/products/ps7127/tsd_products_support_series_home.html

The entire CDS hardware documentation suite is available on Cisco.com at:

http://www.cisco.com/en/US/products/ps7126/tsd_products_support_series_home.html

Obtaining Documentation and Submitting a Service Request

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<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

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