



Videoscape Distribution Suite Service Manager User Guide, Release 3.4

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Americas Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
<http://www.cisco.com>
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 527-0883

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VDS Service Manager Analytics and Provisioning Portal User Guide

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CONTENTS

P r e f a c e

Preface **xiii**

Audience **xiii**

Document Conventions **xiii**

Document Organization **xv**

Reporting Problems **xvi**

Obtaining Documentation and Submitting a Service Request **xvi**

C H A P T E R 1

Getting Started **1**

Getting Started **1**

Configuring Videoscape Distribution Suite Service Manager **2**

Configuring CSV Files **2**

Configuring VDS-IS for VDS-SM **3**

Enabling Transaction Log **4**

Enabling Session Tracking for ABR Services **7**

Securing log transfer between VDS-IS and VDS-SM **8**

Installing Certificates **9**

Configuring Splunk for SSL **9**

Validating Configurations **10**

Verifying Log Ingestion in VDS-SM **10**

Verifying Connectivity Between VDS-IS and VDS-SM **10**

Checking for Data in VDS-SM **11**

C H A P T E R 2

Introduction to Videoscape Distribution Suite Service Manager Portal's User Interface **13**

Videoscape Distribution Suite Service Manager Overview **13**

Logging Into the User Interface **14**

Changing Your Password **15**

Alert Counter **15**

Customizing Alert Counter	16
VDS-SM Portal's User Interface Overview	16
Main Menu	18
About	18
Configuration Icons	19
Role Based Access Control	21

CHAPTER 3

Home 27

Home Overview	27
Using the Scorecards	28
Network 31	
Throughput 31	
Throughput by Server Group	32
Throughput by Delivery Server	33
Throughput by Location	34
Throughput by Delivery Service	35
Concurrent Active Sessions	36
Cache Hit Ratio 37	
Cache Hit Ratio by Server Group	38
Cache Hit Ratio by Delivery Server	39
Cache Hit Ratio by Location	40
Cache Hit Ratio by Delivery Service	41
Response Status Codes 42	
Errors by Server Group	43
Errors by Delivery Server	44
Errors by Location	45
Errors by Delivery Service	45
Storage Usage 47	
Protocol 48	
Volume Delivered by Protocol 49	
Volume Delivered by Server Group	50
Volume Delivered by Delivery Server	51
Volume Delivered by Location	52
Volume Delivered by Delivery Service	53
Total Requests by Protocol 54	

Response Codes by Protocol	55
Cache Hit Ratio by Protocol	56
ABR Session Bitrate by Protocol	57
4xx Errors by Protocol	58
Content	59
Content by Client Request	59
Content by Bytes Transferred	60
Average ABR Session Bitrate by Content	61
Top Content by Delivery Server	62
Top Content by City	63
Top Content by Client Type	64
Viewers	64
Unique Viewers	65
Viewers by Client Type	66
Viewers by City	67
Viewers by ISP and Net Speed	68
Viewers by Download Size	69
Viewers by Session Duration	70
Content Origin	71
Enabling Ingest Transaction Log	71
Ingest Requests	72
Origin/Ingest Volume	73
Bytes Read by Protocol	74
Download Speed	75
Ingest Response Codes	76
Origin Server Failures	77
Customizing Home Scorecards	78

CHAPTER 4**Analytics** 79

Analytics Overview	79
Analyze Metrics with Pivoting	79
Trends	81
Network	81
Volume	82
Throughput	82

Volume of Data Delivered	82
Delivery Services by Bytes Delivered	82
Origin/Ingest Volume	83
Average Download Speed	83
Predict Throughput	84
Caching	86
Cache Hit and Miss Rate by Request Count	86
% Cache Hit and Miss	87
Storage Usage	87
Cache Hit Ratio by Protocol	87
Request	88
Request Rate	88
Total Requests and Errors	89
Top Delivery Services by Request Count	89
Response	90
Response Count by Status Codes	90
Response Codes by Delivery Servers	90
Response Codes by Service Routers	91
Sorted Delivery Services by Client Errors on Delivery Servers	92
4xx Error Rate on Delivery Servers	93
4xx Error Rate on Service Routers	93
Total Rejections due to Quota Limits	94
4xx Errors	95
Sorted Delivery Services by Client Errors on Service Routers	95
Response Codes by Protocol	96
4xx Errors by Protocol	96
Streaming	96
Sessions	97
Concurrent Active Sessions	97
Total Sessions by Protocol	97
Session Download Size	98
ABR	98
Bitrate	98
Bitrate Oscillations	99
Total Requests	100

Request Rate	101
MobiTV Client Log Analysis	102
Viewers	102
Number of Unique Viewers	102
Viewers by Client Type	103
Viewer Density by Location	103
Top Viewers	104
Viewers by Session Duration	104
Viewers by ISP, Net Speed	104
Viewers by Protocol	105
Viewers by Download Size	105
Content	105
Content by Client Requests	106
Content by Bytes Transferred	106
Top Content by Delivery Server	106
Average ABR Session Bitrate by Content	106
Top Content by City	106
Top Content by Client Type	106
Content Origin	107
Ingest Requests	107
Bytes Read	107
Download Speed	108
Ingest Response Codes	108
Origin Server Failures	109
Billing	109
95/5 Billing	109
Pay Go Billing	111
Burst Billing	113
Customizing Trends Dashboard	114
Reports	115
Daily	115
CDN Traffic [5 min Intervals]	115
Traffic Summary by Delivery Servers	116
Traffic Summary by Delivery Services	116
Delivery Server Traffic [5 min Intervals]	117

Delivery Service Traffic [5 min Intervals]	118
All Assets - Video	118
All Assets - Non-Video	119
Weekly	119
CDN Traffic [1 hour Intervals]	120
Traffic Summary by Delivery Servers	120
Traffic Summary by Delivery Services	121
Delivery Server Traffic [1 hour Intervals]	122
Delivery Service Traffic [1 hour Intervals]	122
All Assets - Video	123
All Assets - Non-Video	123
Monthly	124
CDN Traffic [1 day Intervals]	124
Traffic Summary by Delivery Servers	125
Traffic Summary by Delivery Services	125
Delivery Server Traffic [1 day Intervals]	126
Delivery Service Traffic [1 day Intervals]	127
All Assets - Video	127
All Assets - Non-Video	128
Custom Searches and Reports	128
Creating a Custom Report	129
Deleting a Custom Report	130
Custom Dashboards	130
Adding a Custom Dashboard	131
Deleting a Custom Dashboard	133
Content	134
Analyze by Content Title	134
Viewership Report	147
Sessions	148
Analyze by Client IP	148
Session Report	149
Geo Analysis	150
Cache Hit Ratio by Location	150
Viewers Density by Location	151
Bytes Delivered by City	151

Average ABR Bitrate by City	152
4xx and 5xx Errors by City	153
North Bound Application Programming Interface	153
Generating CSV Files from Search Results (Gencsvfromsearch)	155
Configuring Search File	155
Run Shell Script	158
Run Python Script	158
<hr/>	
CHAPTER 5	Monitor 161
Monitor Overview 161	
<hr/>	
CHAPTER 6	Alerts 167
Alerts Overview 167	
Adding a Threshold Alert 167	
Deleting a Threshold Alert 169	
Customizing Threshold Metrics 169	
Quota Violations 170	
Bandwidth Alerts 170	
Session Alerts 171	
Storage Alerts 171	
<hr/>	
CHAPTER 7	Configuration 173
VDS Manager Configuration 173	
Multi-Tiered and Multi-Tenancy 173	
Adding a CDN 174	
Managing a VDS-IS CDN 175	
Distribution Hierarchy Function Overview 177	
Adding a Distribution Hierarchy 177	
Modifying a Distribution Hierarchy 178	
Cloning a Distribution Hierarchy 178	
Deleting a Distribution Hierarchy 178	
Delivery Servers 179	
Modifying a Delivery Server 179	
URL Signing 179	
Creating URL Signature 182	

Editing URL Signature	182
Deleting URL Signature	183
Delivery Services	184
Adding a Delivery Service	184
Deleting a Delivery Service	187
Reseller Function Overview	187
Adding a Reseller	187
Modifying a Reseller	189
Deleting a Reseller	189
Content Provider Function Overview	190
Adding a Content Provider	190
Mapping a Content Provider and Delivery Service	191
Assigning Multiple Content Providers to a Single Delivery Service	192
Modifying a Content Provider	193
Deleting a Content Provider	193
Services	194
Geo Fencing	196
Assigning a Geo/IP file to a Delivery Service	196
Disassociating a Geo/IP file from a Delivery Service	197
Content Purging	198
Deleting Content	198

CHAPTER 8

Administration 201

System Load Dashboard	201
License Usage	203
Configuring License Usage	204
Managing Users and Roles Overview	205
About User Accounts	205
Roles	205
Adding a User	205
Deleting a User	206
Global Configurations	207
Adding Global Configurations	207
Deleting Global Configurations	208
CDN Health	208

Enabling Service Monitor Transaction Log	208
Enabling Service Monitor (SE) Transaction Log	208
Enabling Service Monitor (SR) Transaction Log	209
Monitor	209
CPU Usage	210
Memory Usage	211
Disk Usage	212
CPU Usage by Protocol Engines	213
Memory Usage by Protocol Engines	214
Stopped Protocol Engines	215
Threshold Exceeded Protocol Engines	216
Trend	216
Service Engine	216
CPU Usage	217
Memory Usage	218
Disk Usage	219
CPU Usage by Protocol Engines	220
Memory Usage by Protocol Engines	221
TCP Server Connections	222
TCP Client Connections	223
Service Router	224
CPU Usage	224
Memory Usage	225
Disk Usage	226
CPU Usage for Service Routing	227
Memory Usage for Service Routing	228
TCP Server Connections	229
TCP Client Connections	230
Log Event Discrepancies	231

CHAPTER 9**Troubleshooting** 233

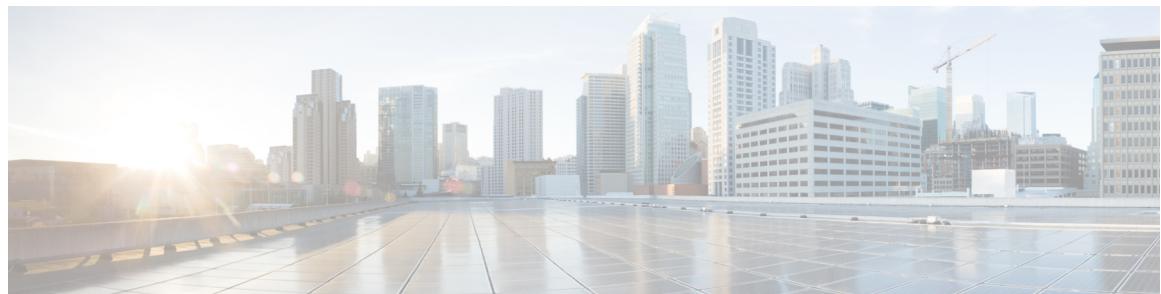
Troubleshooting Analytics Dashboards	233
Troubleshooting Splunk Licensing Issues	234
Troubleshooting Splunk Forwarder Issues	235
Troubleshooting the Splunk Indexer	236

Troubleshooting the Analytics Search Head [237](#)

Troubleshooting VDS-IS Provisioning [239](#)

Deleting Summarized Data [239](#)

Splunk License Violation [240](#)



Preface

- [Audience, page xiii](#)
- [Document Conventions, page xiii](#)
- [Document Organization, page xv](#)
- [Reporting Problems, page xvi](#)
- [Obtaining Documentation and Submitting a Service Request, page xvi](#)

Audience

The Videoscape Distribution Suite Service Manager (VDS-SM) User Guide provides instructions to the Operators and Administrators, who are responsible for the management, real-time analysis and monitoring, business policy enforcement, and other critical network intelligence for Videoscape Distribution Suite Internet Streaming (VDS-IS) and other 3rd party Content Delivery Networks (CDNs).

Document Conventions

This document uses the following conventions:

Table 1: Document Conventions

Convention	Description
[^] or Ctrl	Both symbols represent the Control (Ctrl) key on the keyboard. For example, the key combinations [^] D or Ctrl-D means that you hold down the Control key while you press D . (Keys are indicated in capital letters but are not case sensitive.)
bold font	Commands, keywords, and user-entered text appear in bold font.
<i>Italic</i> font	Document titles, new or emphasized terms, and arguments for which you need to enter values appear in <i>italic</i> font.

Convention	Description
Courier font	Terminal sessions and information, which the system displays appear in <i>courier</i> font.
Bold Courier font	Bold Courier font indicates the text that you must enter.
[x]	Elements in square brackets are optional.
...	An ellipsis (three consecutive non-bolded periods without spaces) after a syntax element indicates that the element can be repeated.
	A vertical line, called a pipe, indicates a choice within a set of keywords or arguments.
[x y]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
{x y}	Required alternative keywords are grouped in braces and separated by vertical bars.
[x {y z}]	Nested set of square brackets or braces indicate optional or required choices within optional or required elements. Braces and a vertical bar within square brackets indicate a required choice within an optional element.
string	A non-quoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.
<>	Nonprinting characters such as passwords appear in angle brackets.
[]	Default responses to system prompts appear in square brackets.
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.

Reader Alert Conventions

This document uses the following conventions for reader alerts:


Note

Means *reader take note*. Notes contain helpful suggestions or references to material, which is not covered in the manual.


Tip

Means *the following information will help you solve a problem*.

**Caution**

Means *reader needs to be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

**Timesaver**

Means *the described action saves time*. You can save time by performing the action described in the paragraph.

**Warning**

Means *reader beware*. In this situation, you might perform an action that could result in bodily injury.

Document Organization

This document is organized into the following chapters:

Table 2: Document Organization

Chapter	Description
Getting Started	Provides information on getting started with VDS-SM 3.4.
Introduction to VDS-SM Portal's User Interface	Describes the VDS-SM user interface and general framework.
Home	Displays various scorecards such as Network, Protocol, Content, Viewers, and Content Origin.
Analytics	Displays various dashboards such as Analyze Metrics with Pivoting, Trends, Reports, and Geo Analysis.
Monitor	Displays various dashboards such as Throughput, Cache Hit Ratio, and Responses, which helps the CDN Operators to check the performance of the network.
Alerts	Displays quota violations alerts which lists count of events that are generated by the system, and provides details on how to manage threshold alerts.
Configuration	Describes how to configure the CDN, Reseller and Content Providers.
Administration	Provides information on how to manage users and roles, an overview of the global configuration parameters, and dashboards to monitor the CDN health parameters.

Reporting Problems

If you have any query or experience problems when installing the VDS Service Manager software, contact your Cisco Technical representative.

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see *What's New in Cisco Product Documentation*, at: <http://www.cisco.com/c/en/us/td/docs/general/whatsnew/whatsnew.html>.

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CHAPTER 1

Getting Started

- [Getting Started, page 1](#)
- [Configuring Videoscape Distribution Suite Service Manager , page 2](#)
- [Configuring CSV Files, page 2](#)
- [Configuring VDS-IS for VDS-SM, page 3](#)
- [Verifying Log Ingestion in VDS-SM, page 10](#)
- [Verifying Connectivity Between VDS-IS and VDS-SM, page 10](#)
- [Checking for Data in VDS-SM, page 11](#)

Getting Started

The VDS-SM provides configuration, management, real-time analytics and monitoring, business policy enforcement, and other critical network intelligence for VDS-IS. The solution installs on a VM infrastructure and operates on a customer's traditional computing system or a Cisco UCS system. This allows more efficient and focused use of computing resources, memory, and disk space; thus resulting in a more efficient ratio of computing resources to application performance.

Before you begin, ensure that the following tasks are completed as part of installation:

- Run configure indexers script.

For details, see the section **Adding an Analytics Indexer to VDS-SM**, in the Software Installation Guide.

If VDS-SM cluster setup is installed, see the section **Adding an Analytics Indexer to VDS-SM Cluster**, in the Software Installation Guide.

- Schedule *getCDStopology* script in cron (for details, see the section **Adding Splunk License** in the Software Installation Guide).
- Add the Splunk license (for details, see the section **Adding Splunk License** in the Software Installation Guide).

Configuring Videoscape Distribution Suite Service Manager

VDS-SM discovers topology of Content Delivery Network (Service Engine, Service Router, and Distribution Hierarchy) and Delivery Services through CDSM. To initiate the discovery, you need to register the CDSM IP address along with the user credentials that is required to connect to CDSM.

To configure VDS-SM, perform the following steps:

Step 1 Login to VDS-SM using the link `http://UInode IP/bnimgmt`

Username: bniadmin and **Password:** admin

Step 2 From the main page, choose **Configuration > CDN**.

To add CDN, see [Adding a CDN, on page 174](#)

Synchronization between VDS-SM and CDSM occurs at an interval of five minutes. After synchronization, the status will be displayed as 'Synchronization Successful'.

After synchronization, you can select the CDN and verify whether the devices and services information have been discovered.

Note Only Distribution Hierarchy and Delivery Services can be added or modified in VDS-SM.

Configuring CSV Files

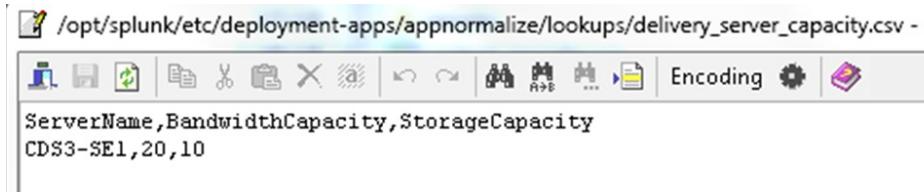
VDS-SM uses CSV files to map certain attributes with the log events. These CSV files need to be configured optionally for filters and for certain dashlets to be reflected in the user interface. The CSV files are located in the Job Scheduler node at the following location (**Username:** bnispunk and **Password:** password):

`/opt/splunk/etc/deployment-apps/appnormalize/lookups`

`delivery_server_capacity.csv`

This CSV file is used to enter the Bandwidth Capacity and Storage Capacity values for the Delivery Server that is being used.

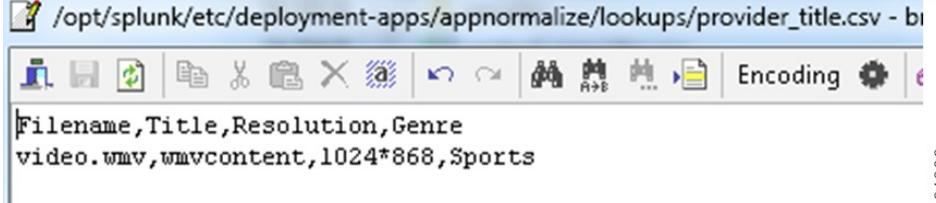
These values will be reflected in Throughput and Storage Capacity dashlets (these charts are available in Network scorecard and Trends).



`provider_title.csv`

This CSV file is used to map the Filename of the content played with its Title, Resolution, and Genre.

These values will be mapped under the respective filters in the Content scorecard.

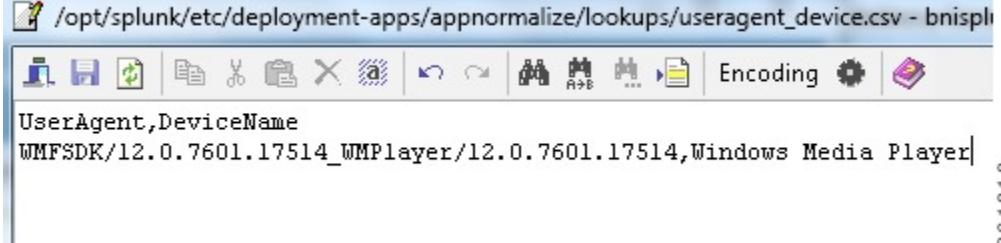


The screenshot shows a CSV file titled "provider_title.csv" in a text editor. The file contains one row of data: "Filename,Title,Resolution,Genre" followed by "video.wmv,wmvcontent,1024*868,Sports". The file path is "/opt/splunk/etc/deployment-apps/appnormalize/lookups/provider_title.csv". A timestamp "361006" is visible in the bottom right corner of the editor window.

useragent_device.csv

This CSV file is used to map the user agent by which the content is played to its meaningful name (user defined).

These values will be reflected in the Top Content by Client Type dashlet (this chart is available in Viewers scorecard and Trends), Viewers by Client Type (this chart is available in Viewers scorecard and Trends), Bytes Delivered by Client Type (this chart is available in Analyze by Content Title dashboard), Average ABR Session Bitrate by Client Type (this chart is available in Analyze by Content Title dashboard), and 4xx and 5xx Errors by Client Type (this chart is available in Analyze by Content Title dashboard). However, if this CSV is not updated manually, the dashlet will be displayed by fetching the actual user agent of the client.



The screenshot shows a CSV file titled "useragent_device.csv" in a text editor. The file contains one row of data: "UserAgent,DeviceName" followed by "WMFSDK/12.0.7601.17514_WMPPlayer/12.0.7601.17514,Windows Media Player". The file path is "/opt/splunk/etc/deployment-apps/appnormalize/lookups/useragent_device.csv". A timestamp "361010" is visible in the bottom right corner of the editor window.

361010

Configuring VDS-IS for VDS-SM

VDS-SM uses transaction logs that are generated by Service Router (SR) and Service Engine (SE) for analysis. Therefore, you need to configure SR and SE to enable logging and export them to VDS-SM.



Important We recommend you to use the following versions of VDS-IS:

- VDS-IS 3.3.1
- VDS-IS 4.0.0
- VDS-IS 4.1.1/VDS-IS 4.1.2
- VDS-IS 4.2.1

Enabling Transaction Log

To enable and export transaction logs, perform the following steps:

Step 1

Login to the CDSM UI.

Step 2

Click **Devices** and select the required SE.

Step 3

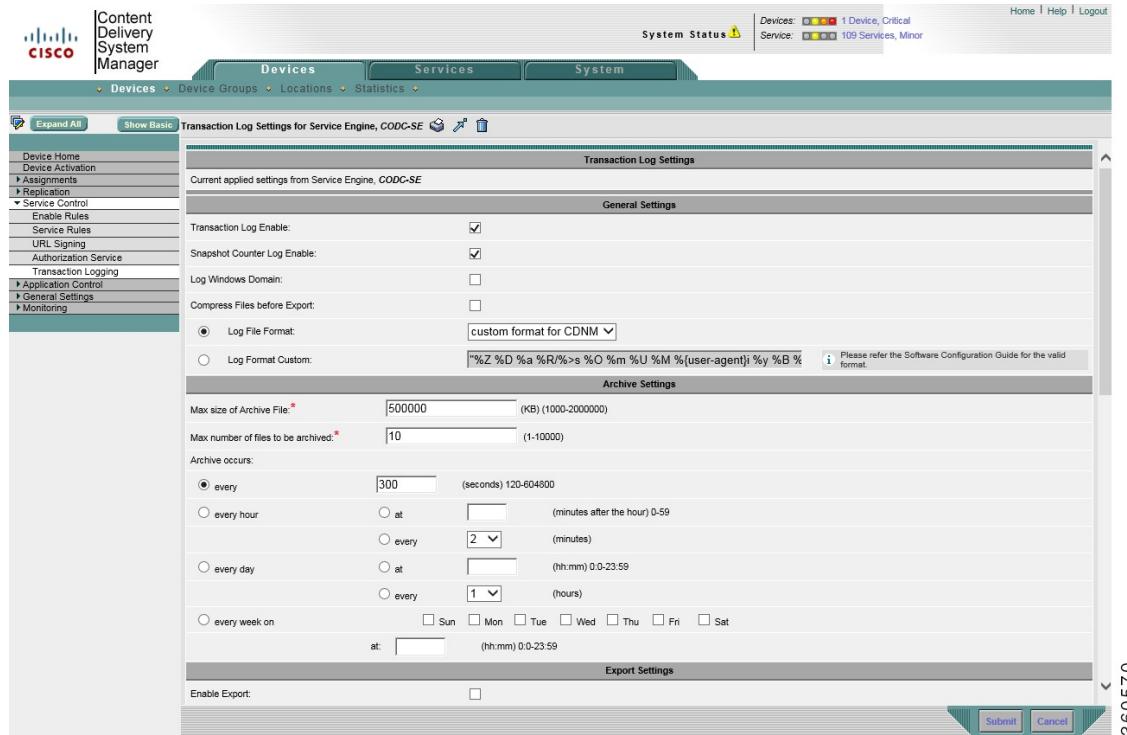
In the right pane, choose **Service Control > Transaction Logging**.

Step 4

Check the **Transaction Log Enable** check box.

Step 5

From the **Log File Format** drop-down list, choose **custom format for CDN** option.



Step 6

From within **Archive Settings**, click **every** radio button and set the archive to 5 minutes (300 seconds).

Note VDS-SM recommends that the archival time be set to 5 minutes. Exceeding this time interval would result in missing events (logs), which might hinder the dashboards from being populated.

Step 7

From within **Splunk UF Export Settings** (scroll down using the scroll bar), check the **Export Enable** check box, and check the type of logs that has to be logged (Snapshot Counter, FMS, Web Engine, ABR Session, WMT).

The screenshot shows the 'Transaction Log Settings' configuration page in the CDS Manager. The left sidebar has a 'Service Control' section expanded, showing 'Enable Rules', 'Service Rules', 'URL Signing', 'Authorization Service', 'Transaction Logging' (selected), and 'Monitoring'. The main panel shows 'Splunk UF Export Settings' with 'Export Enable' checked, 'Throttling' set to 512 KBps, 'Max Queue Size' set to 700 MB, and 'Group Type of Export Servers' set to 'load-balancing'. Below this is a table of 'Monitors' with columns: Monitor, Enable, Ignore Older Than (Minutes), Index, and Source Type. The table lists five monitors: ABR Session (Enable checked, 60 min, cdn_transaction, abr_session), Error Log (Enable unchecked, 60 min, cdn_errorlog, se_err), FMS (Enable checked, 60 min, cdn_transaction, fms_other), Movie Streamer (Enable checked, 60 min, cdn_transaction, dss), and Service Monitor (Enable checked, 60 min, cdn_device_service_monitor, se_service_monitor). At the bottom are 'Submit' and 'Cancel' buttons.

Step 8

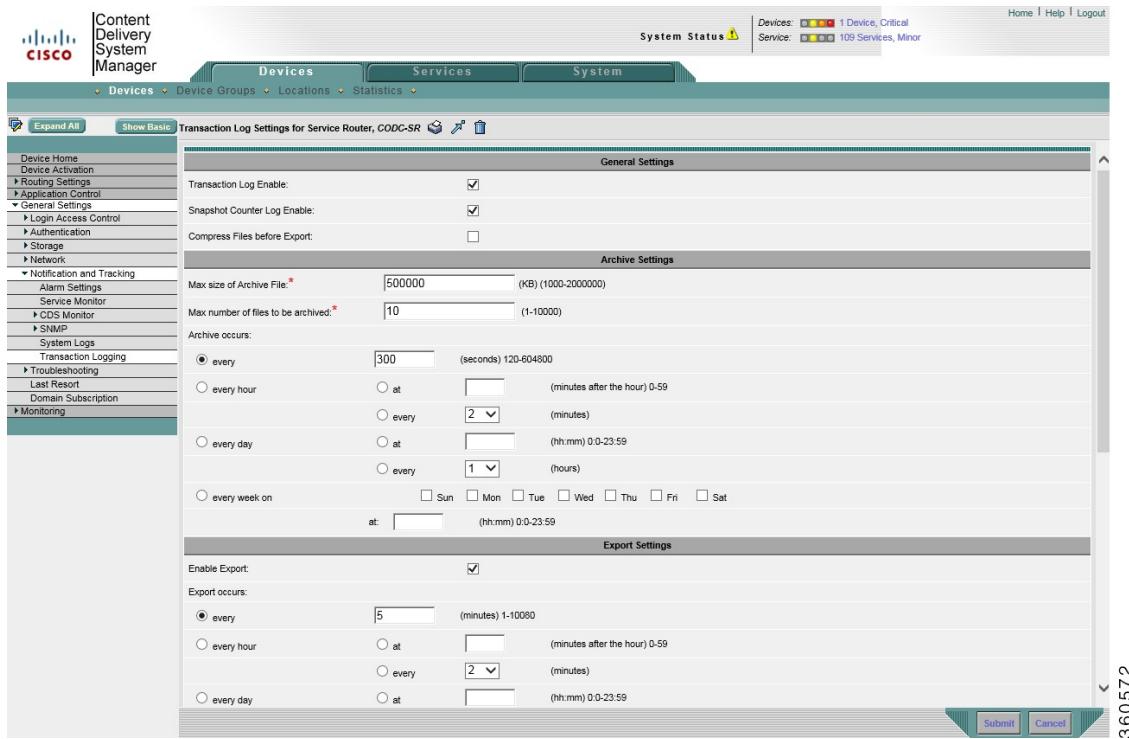
Enter the VDS-SM Forwarder IP in the **Export Server** field and click **Submit**.

The following steps are necessary to populate the network scorecards and other SR related dashlets in VDS-SM.

Step 9

Select **Devices** and select the required SR.

Enabling Transaction Log



Step 10

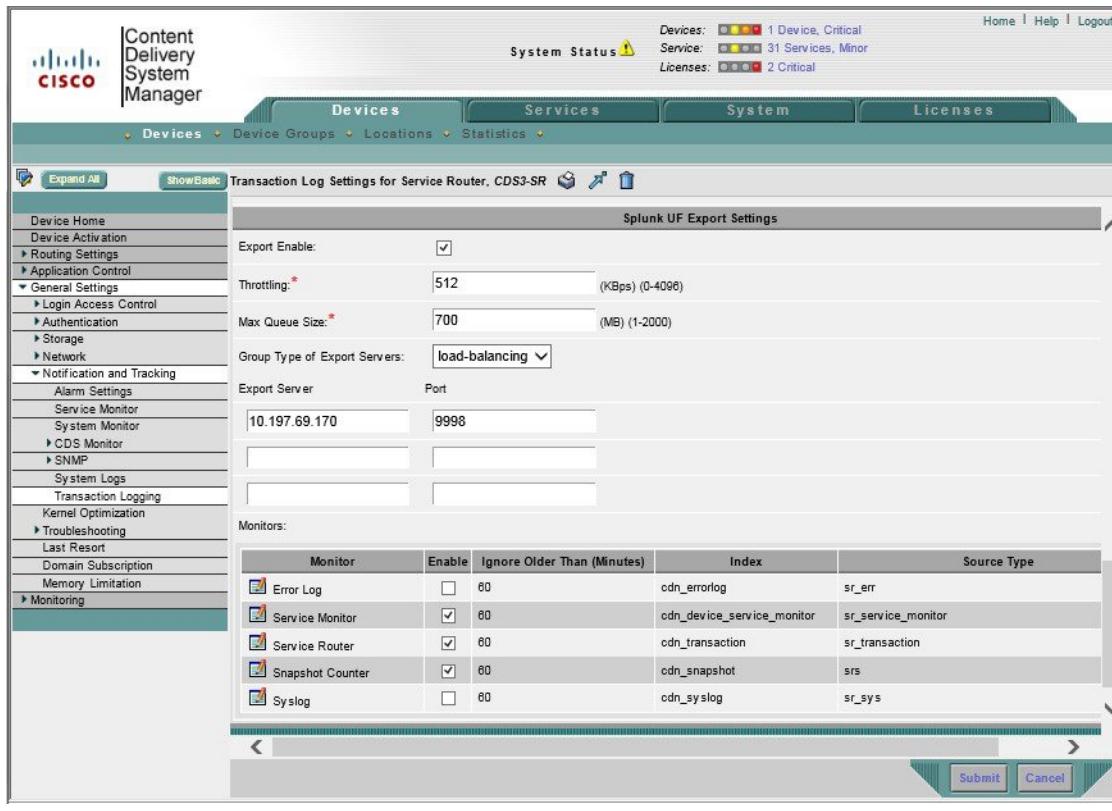
In the right pane, choose **General Settings > Notification and Tracking > Transaction Logging**.

Step 11

From within **Archive Settings**, click **every** radio button and set the archive to 5 minutes (300 seconds).

Step 12

From within **Splunk UF Export Settings** (scroll down using the scroll bar), check the **Export Enable** check box, and check the type of logs that has to be logged (Snapshot Counter and Service Router).



Enabling Session Tracking for ABR Services

VDS-SM uses ABR session logs to analyze ABR sessions. Although the ABR session log is enabled as part of the previous step, the log will be generated only if session tracking is configured for the delivery services.

You can configure session tracking using CDSM as mentioned below:

- 1 Choose **Services** and select the required delivery service.
- 2 In the left pane, choose **Location settings** and enable the required protocol (HSS, HLS, and generic session tracking).

For more information, refer General Settings Fields table (page 257) in the VDS-IS Software Configuration Guide (http://www.cisco.com/c/en/us/td/docs/video/cds/cda/is/4_1/configuration-guide/SCG1.pdf)

CAVEAT: With VDS-IS, session tracking is supported only by SE at the edges. If SE from inner tiers are used to deliver content, then session tracking cannot be enabled on those SEs and the sessions will not be visible to VDS-SM.

Valid Rule File

A valid rule file must be present in CDSM to analyze the ABR protocols and bitrate fields. Choose **System > Configuration > Authorization File Registration** (in the right pane).

Example

The following are rule file entries with fields for analyzing the ABR protocols:

```
<Rule_Allow matchGroup="grp1" protocol="http"/>
<Rule_SetAction name="Rule_DSConfig" matchGroup="grp1" protocol="http">
<SetParameter name="SessionResolveRule#1" value="(.*):m3u8(.*)":none"/> //m3u8 is the extension of the video played
<SetParameter name="GenericSessionPlay#1" value="(.*):ts(.*)":none"/>
<SetParameter name="SessionProtocol#1" value="(.*):protocol=$generic_hls"/> //to map abr-protocol field from the log
<SetParameter name="SessionBitrate#1" value="(.*):sample/(.*):bitrate=$2"/> //to map the bit rate field from the field
<SetParameter name="SessionProfile#1" value="(.*):sample/(.*):profile=$2"/>
//HDS
<SetParameter name="SessionResolveRule#1" value="(.*):f4m(.*)":none"/>
<SetParameter name="SessionProtocol#1" value="(.*):f4m|f4v|Frag(.*)":protocol:HDS"/>
<SetParameter name="SessionBitrate#1" value="/sample1_(.*):kbps:bitrate=$1"/>
<SetParameter name="SessionProfile#1" value="/sample1_(.*):kbps:profile=$1"/>
```

The following are sample log file entries that are mapped using the above rule file entries:

#Software: (CDS 3.2.0 b8)

client-ip abr-protocol session-id manifest-uri asset-id bytes-sent bytes-received status time-to-serve

bitrate encryption session-tracking-mode status-code user-agent entry-gen-time mime-type profile

10.140.8.240 generic_hls 10f-I-617F44E4B4027469A848025065C227409629

[http://hls.abr.com/sample/sample.m3u8 - 514515 1663 bitrate_shift \[10/Jan/2013:05:52:53.710+0000\]](http://hls.abr.com/sample/sample.m3u8 - 514515 1663 bitrate_shift [10/Jan/2013:05:52:53.710+0000])



Note

Make sure that proper quotas (Storage, Bandwidth, Session) are being allotted to Delivery Services in CDSM.

Securing log transfer between VDS-IS and VDS-SM

The logs generated during content distribution are transferred from VDS-IS to VDS-SM for analytics through TCP. The Splunk Universal Forwarder (UF) monitors the log files and forwards the events to VDS-SM in real-time. The Lightweight Forwarder (LWF) present in VDS-SM aggregates events from multiple sources and forwards them to Indexers. The communication between UFs (embedded in SEs and SRs) and LWF (present in VDS-SM) is not secure. However, securing sensitive raw data helps to avoid security threats.

Turn on SSL encryption using either self-signed certificates or certificates signed by third Party CA. This provides encryption and compression of raw data that flows from upstream forwarders into VDS-SM.

**Note**

- Cisco does not recommend usage of default certificates that are shipped with Splunk.
- By default secure log transfer feature will be turned off. You can turn on/off this feature as per your needs.

When turning on secure transfer of log files, ensure the following:

- While generating Root Certificate using openssl, do not specify common name and challenge password.
- While generating Server Certificate, do not specify challenge password.
- When generating Server Certificate, note the common name as you have to use it when you configure SSL on the forwarder.
- While generating Client Certificate, do not specify common name and challenge password.

Installing Certificates

To install the certificates in VDS-SM, you need to copy the certificates to the following directory:

/opt/splunkforwarder/etc/certificates/

To install the certificates in VDS-IS, refer VDS-IS User guide.

Configuring Splunk for SSL

To configure Splunk for SSL in VDS-SM, define the following code stanzas in inputs.conf file of the Job Scheduler node. The inputs.conf file is available in the path:

\$SPLUNK_HOME/etc/deployment-apps/CDN_UF/local/inputs.conf.

```
[SSL]
rootCA = $SPLUNK_HOME/etc/certificates/<root_certificate_name.pem>
serverCert = $SPLUNK_HOME/etc/certificates/<server_certificate.pem>
password = <server_key_password>
requireClientCert = false
sslVersions = <Required SSL Version>
cipherSuite = <Required ecdh cipherSuite String>
allowSslRenegotiation = true
ecdhCurveName = <ecdh_curve_name>

[splunktcp-ssl:9998]
```

**Note**

- In VDS-SM, the default configuration is to disable both [SSL] and [splunktcp-ssl:9998] by commenting out the lines and enabling [splunktcp://:9998]. You have to comment [splunktcp://:9998] and uncomment [SSL] & [splunktcp-ssl:9998] stanzas.
- If there are no sslVersions specific requirements, then comment the sslVersions line. The default value for sslVersions is "*, -ssl2" (anything later than SSLv2).
- If there are no cipherSuite specific requirements, then comment the cipherSuite line. Otherwise use the default cipher string.

For VDS-IS, refer VDS-IS User guide.

Validating Configurations

To validate the configurations on VDS-SM, perform the following steps:

Step 1 Navigate to the following location:

`$SPLUNK_HOME/var/log/splunk/splunkd.log`

Step 2 In the logs, check for the following line:

```
INFO  TcpInputConfig - IPv4 port 9998 is reserved for splunk 2 splunk (SSL)
INFO  TcpInputConfig - IPv4 port 9998 will negotiate new-s2s protocol
```

Verifying Log Ingestion in VDS-SM

After enabling the export of log data using Splunk UF, SE and SR will connect to the VDS-SM Forwarder node and start ingesting data. You can verify the data flow in the system as mentioned in the [Verifying Connectivity Between VDS-IS and VDS-SM, on page 10](#) section.

Verifying Connectivity Between VDS-IS and VDS-SM

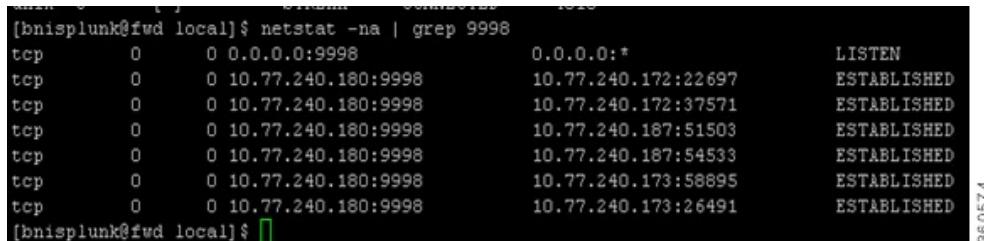
You need to check whether the connection has been established or not between SE, SR, and the Forwarder node.

To verify the connectivity between VDS-IS and VDS-SM, perform the following steps:

Step 1 SSH to VDS-SM Forwarder node.

Username: bnisplunk and **Password:** password

Step 2 Enter the command `netstat -na | grep 9998`



```
[bnisplunk@fwd local]$ netstat -na | grep 9998
tcp        0      0 0.0.0.0:9998          0.0.0.0:*              LISTEN
tcp        0      0 10.77.240.180:9998    10.77.240.172:22697    ESTABLISHED
tcp        0      0 10.77.240.180:9998    10.77.240.172:37571    ESTABLISHED
tcp        0      0 10.77.240.180:9998    10.77.240.187:51503    ESTABLISHED
tcp        0      0 10.77.240.180:9998    10.77.240.187:54533    ESTABLISHED
tcp        0      0 10.77.240.180:9998    10.77.240.173:58895    ESTABLISHED
tcp        0      0 10.77.240.180:9998    10.77.240.173:26491    ESTABLISHED
[bnisplunk@fwd local]$
```

Connection must be established between SE, SR, and the Forwarder node.

If the connection is not established, verify the connectivity between VDS-SM Forwarder node and the nodes in CDN.

Checking for Data in VDS-SM

VDS-SM aggregates data at different intervals to compute metrics. Therefore, expect some delay for the data to reflect in the dashboards.


Note

All the above steps need to be performed as a prerequisite before ingesting logs into VDS-SM.

The following table lists the different dashboards and the time they require to display the data:

Dashboard	Time Required
Monitor	Less than 15 minutes
Network Scorecard	1 Hour
Protocol Scorecard	1 Hour
Content Scorecard	1 Day
Viewers Scorecard	1 Day
Trends	1 Day
Content and Session Analytics	1 Day

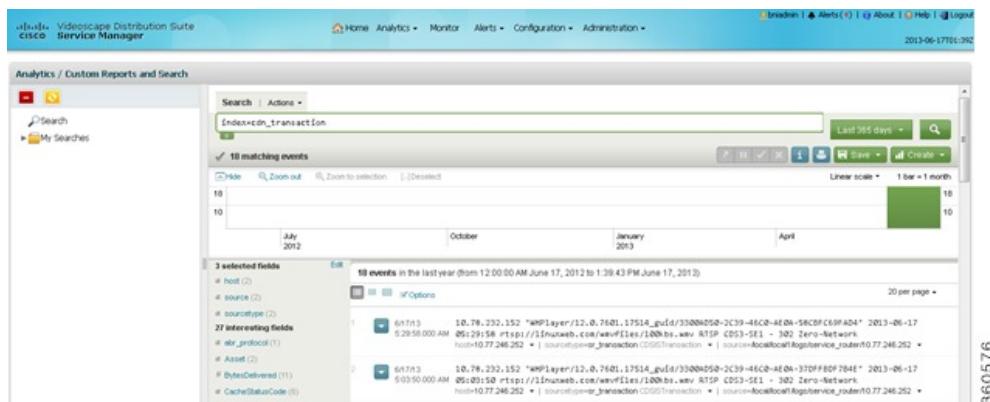
To check the data in VDS-SM, perform the following steps:

Step 1 Login to VDS-SM using the link <http://UInode IP/bnimmgmt>

Username: bniadmin and **Password:** admin

Step 2 Choose **Analytics > Custom Searches and Reports**.

In the Search page, query for the respective index and check whether the data is indexed. After playing various video formats, the corresponding dashboards will be populated in VDS-SM.



Monitor dashboard can be used to check the data flow into VDS-SM at real-time (with minimal delay).

Dashboard	Remarks
Network Scorecard > Last 60 Minutes	Displays data for the last 60 minutes (current time minus 10 minutes).
Network scorecard > Last 24 Hours (default time)	Displays data for the last 24 hours.
Network Scorecard > Last 7 Days	Displays data for the last 7 days.
Protocol Scorecard > Last 60 Minutes (default)	Displays data for the last 60 minutes (current time minus 10 minutes).
Protocol Scorecard > Last 24 Hours	Displays data for the last 24 hours.
Protocol Scorecard > Last 7 Days	Displays data for the last 7 days.
Content Scorecard > Previous Day (default)	Displays the previous day's data.
Content Scorecard > Last 7 Days	Displays data for the last 7 days.
Viewers Scorecard > Previous Day (default)	Displays the previous day's data.
Viewers Scorecard > Last 7 Days	Displays data for the last 7 days.
Content Origin Scorecard > Last 60 Minutes	Displays data for the last 60 minutes (current time minus 10 minutes).
Content Origin Scorecard > Last 24 Hours (default time)	Displays data for the last 24 hours.
Content Origin Scorecard > Last 7 Days	Displays data for the last 7 days.
Monitor	Displays data for every 5 minutes with 1 minute delay.
Trends	Displays data for last 7 days by default.



CHAPTER 2

Introduction to Videoscape Distribution Suite Service Manager Portal's User Interface

- [Videoscape Distribution Suite Service Manager Overview, page 13](#)
- [VDS-SM Portal's User Interface Overview, page 16](#)
- [Role Based Access Control, page 21](#)

Videoscape Distribution Suite Service Manager Overview

The VDS-SM provides configuration, management, real-time analytics and monitoring, business policy enforcement, and other critical network intelligence for VDS-IS. CDN hosts different content, such as live and archived, to viewers around the world. It helps the CDN Operators to quickly check the performance of the network.

The VDS Manager software includes the following major components:

- Analytics—Creates a fast searchable index of CDN streaming device log files for centralized access.
- Provisioning—Provides the Administration team the rights to create new Delivery Services and to control CDN from the same interface, which is used for analytics retrieval.
- Reporting—Provides a single interface for provisioning and reporting CDN solutions that may reside in a single provider’s environment (for example, VDS-IS).

The application nodes that comprise the VDS-SM solution are Java applications deployed within a JBOSS application server, and is separated into distinct “solutions”, each of which provides a specific set of services for the overall application.

VDS-SM Application Nodes

The VDS-SM supports the following application nodes:

- Core Services
- User Interface
- CDN Manager

- Analytics

Core Services

The Core Services node includes the following:

- Management Interface—This interface provides service registry, and stores global configuration parameters, for the management of solution nodes.
- Database—Hosts the MySQL database that is used to store the configuration information including topology, solution tables, and registry information.

User Interface

Presents a User Interface where status, configuration, and analytics can be viewed by the Operator and Wholesale users.

CDN Manager

Provides management services for CDN including Cisco VDS-IS.

Analytics

Analytics includes the following nodes:

- Search Head—Provides search and reporting functions.
- Forwarder—Manages the distribution of log data from CDN to Analytics Infrastructure for processing.
- Indexer—Processes log data to facilitate fast data retrieval and reporting.
- Job Scheduler—Provides job scheduling and functions as a deployment repository for the analytics software.

Logging Into the User Interface

To log into the VDS-SM user interface, follow these steps:

- 1 Enter your Username and Password in the Login window.

By default, the username is **bniadmin** and the password is **admin**. If required, you can change the username and password after initial log in.

**Note**

A *Session Timeout* popup window will be displayed if you are logging into the user interface using multiple systems or different browsers.

- 2 To log out of the user interface, click **Logout**, located on the top-right corner of the window.

Changing Your Password

To change your password, click the <User Profile> button, for example, **bniadmin**, located in the menu bar, to open the User Info dialog box.

User Info Dialog



To increase security, we recommend that you use a combination of letters, numbers and characters.

Alert Counter

The Alert Counter allows you to view the records of the triggered alerts.

To access the Alerts function, navigate to Alerts, located at the top-right of the main page.

The Alert Counter can trigger the following alerts:

- Application available—This alert is triggered when a service named in an alert is available, ie. when the service is recognized as in service by the system.
- Application unavailable—This alert is triggered when a service becomes unavailable, ie. when the service is no longer available on the network or is out of service.
- Delivery Service conflict—This alert is triggered when there is a conflict in the Device Service
- Device In Service—This alert is triggered when a topology device has transitioned to in service and is eligible to service requests, if it is operational.
- Device Out of Service—This alert is triggered when a topology device has transitioned to out of service and is not eligible to service requests, if it is operational.

By default, the Alerts counter displays the alerts, which you have acknowledged within five days. To customize the number of days an acknowledged alert must be displayed, see [Customizing Alert Counter, on page 16](#).

**Note**

Alert Counter is available only for the CDN Operators.

Customizing Alert Counter

To customize the number of days for an acknowledged alert in the VDS-SM, follow these steps:

Step 1 Log in to the User Interface node using the following credentials:

User name: bnninet

Password: password

Step 2 Navigate to the following location:

/home/bnninet/jbossesb/server/default/conf/bni/

Step 3 Open the **vdssm_config.properties** file.

Step 4 Edit the value of "ALERTS_ACKNOWLEDGED_BEFORE" parameter as a positive or negative integer.

Positive value—Displays the alerts that are acknowledged before the specified number of days. For example, if the ALERTS_ACKNOWLEDGED_BEFORE parameter value is set as "1" on January 01, then the alerts that are acknowledged on January 01 will be displayed only till January 02.

Zero—Displays the alerts that are acknowledged today.

Negative value—Displays all the alerts that are acknowledged till date.

Step 5 Save the file.

Step 6 Restart the Jboss server, using the following command:

```
service jboss restart
```

VDS-SM Portal's User Interface Overview

This section provides an overview of the VDS-SM Portal's user interface.

**Note**

Before you access the VDS-SM Portal's user interface, you must deploy, install, and configure, all nodes in your network.

VDS-SM comprises the following functions:

Table 3: VDS-SM Functionalities & Description

Function	Description
User Profile	To change your password, click the <i><User Profile></i> button; for example, bniadmin , located in the top-right corner of the window, to open the User Info dialog box. Note The button name displays the name of the user logged in.
Alert Counter	Lists the alert notifications. Click Alerts , located next to User Profile. It displays the alerts you set up.
About	Click About , located next to Alerts, to display the About dialog box.
Logout	Click Logout , located next to Help, to log out from the application.
Home	Displays the following scorecards: <ul style="list-style-type: none">• Network• Protocol• Content• Viewers• Content Origin
Analytics	Displays the following menus and submenus: <ul style="list-style-type: none">• Analyze Metrics with Pivoting• Trends• Reports• Customs Searches and Reports• Custom Dashboards• Content-Analyze by Content Title and Viewership Report• Sessions-Analyze by Client IP and Session Report• Geo Analysis
Monitor	Helps the CDN Operators check the performance of the network in real time.

Function	Description
Alerts	Displays the following menus: <ul style="list-style-type: none">• Thresholds• Quota Violations
Configuration	Displays the following menus and submenus: <ul style="list-style-type: none">• CDN• Customers–Reseller and Content Provider• Services• Geo Fencing• Content Purging
Administration	Displays the following menus: <ul style="list-style-type: none">• System Load Dashboard• License Usage• User Management• Global Configurations• CDN Health–Monitor and Trend• Log Event Discrepancies

Main Menu

The main menu bar displays all VDS-SM tabs. Click the menus to view the submenus.



About

The VDS-SM Portal's **About** option lists the following information:

- Product Version Number
- Product Name
- Build Timestamp
- Build Number
- Build Java Version

- Software Licenses
- End User Licenses Agreement

To access this, click **About** at the top right of the page.



Note

Click the orange arrow next to the item to see more information.

Configuration Icons

VDS-SM portal provides various icons to perform configuration commands or to indicate operational status. The following table lists all the icons included in the user interface.

Table 4: User Interface Icons

Icon	Description
	Go to Detail page

Configuration Icons

Icon	Description
	Create or Add
	Delete
	Undo
	Refresh
	Disable
	Enable
	Clone
	Import
	Edit: in-line mode: • Select: light gray
	Edit: full-screen mode: • Select: light gray
	Edit: bulk mode: • Select: light gray • Deselect: dark gray
	Edit: Item Selector
	Information
	Auto Refresh
	Context Sensitive Help
	Search; Filter

Icon	Description
	Notice
	Normal
	Added
	Deleted
	Edited
	View
	Export
	Add Volumes
	Remove Volumes
	Operational State: Up
	Operational State: Down
	Synchronization
	Drilldown
	Analyze Data

Role Based Access Control

Role Based Access Control (RBAC) is implemented in VDS-SM. Delivery Services and Providers drop-down lists are filtered, based on the user logged into the system.

The following figure shows the permissions granted for CDN Operator Admin, CDN Operator Viewer, Reseller Admin, Reseller Viewer, Content Provider Admin, and Content Provider Viewer.

Role Based Access Control

Main Menu	Navigation	CDNOp Admin			CDNOp Viewer			Reseller Admin			Reseller Viewer			CP Admin			CP Viewer		
		Is Menu Accessible?	Has Permission?	Test Passed?	Is Menu Accessible?	Has Permission?	Test Passed?	Is Menu Accessible?	Has Permission?	Test Passed?	Is Menu Accessible?	Has Permission?	Test Passed?	Is Menu Accessible?	Has Permission?	Test Passed?	Is Menu Accessible?	Has Permission?	Test Passed?
Home	Scorecards	✓	✓	NA	✓	✓	✓	✓	✓	NA	✓	✓	✓	NA	✓	✓	✓	NA	✓
Analytics	Analyze Metrics with Pivoting	✓	✓	NA	✓	✓	✓	✓	✓	NA	✓	✗	NA	✓	✗	✓	NA	✓	✓
Analytics	Trends	✓	✓	NA	✓	✓	✓	✓	✓	NA	✓	✓	✓	NA	✓	✓	✓	NA	✓
Analytics	Reports	✓	✓	NA	✓	✓	✓	✓	✓	NA	✓	✓	✓	NA	✓	✓	✓	NA	✓
Analytics	Custom Searches and Reports	✓	✓	✓	✓	✓	✓	✓	✓	✓	NA	✓	✗	NA	✓	✗	✓	NA	✓
Analytics	Custom Dashboards	✓	✓	✓	✓	✓	✓	✓	✓	✓	NA	✓	✗	NA	✓	✗	✓	NA	✓
Analytics	Content->Analyze by Content Title	✓	✓	NA	✓	✓	✓	✓	✓	NA	✓	✓	✓	NA	✓	✓	✓	NA	✓
Analytics	Content->Viewership Report	✓	✓	NA	✓	✓	✓	✓	✓	NA	✓	✓	✓	NA	✓	✓	✓	NA	✓
Analytics	Sessions->Analyze by Client IP	✓	✓	NA	✓	✓	✓	✓	✓	NA	✓	✓	✓	NA	✓	✓	✓	NA	✓
Analytics	Sessions->Session Report	✓	✓	NA	✓	✓	✓	✓	✓	NA	✓	✓	✓	NA	✓	✓	✓	NA	✓
Analytics	Geo Analysis	✓	✓	NA	✓	✓	✓	✓	✓	NA	✓	✗	NA	✓	✗	✓	NA	✓	✓
Configuration	CDN	✓	✓	✓	✓	✓	✓	✗	✓	NA	✓	✗	NA	✓	✗	✓	NA	✓	✓
Configuration	Customers -> Reseller	✓	✓	✓	✓	✓	✓	✓	✗	✓	NA	✓	✗	NA	✓	✗	✓	NA	✓
Configuration	Customers -> Content Provider	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	NA	✓
Configuration	Services	✓	✓	NA	✓	✓	✓	✓	✓	NA	✓	✗	NA	✓	✗	✓	NA	✓	✓
Configuration	Geo Fencing	✓	✓	✓	✓	✓	✓	✗	NA	NA	✓	✗	NA	✓	✓	✓	✓	NA	✓
Configuration	Content Purging	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✗	✓	✓	✓	✓	✓	✓	✓
Administration	System Load Dashboard	✓	✓	✓	✓	✓	✓	✗	NA	NA	✓	✗	NA	NA	✓	✗	NA	NA	✓
Administration	License Usage	✓	✓	✓	✓	✓	✓	✓	✗	NA	✓	✗	NA	NA	✓	✗	NA	NA	✓
Administration	User Management	✓	✓	✓	✓	✓	✓	✓	✗	NA	✓	✓	✓	✓	✓	✓	✓	NA	✓
Administration	Global Configurations	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	NA	✓	✗	✓	NA	✓
Administration	CDN Health	✓	✓	NA	✓	✓	✓	✓	✓	NA	✓	✗	NA	NA	✓	✗	NA	NA	✓
Administration	Log Event Discrepancies	✓	✓	NA	✓	✓	✓	✓	✓	NA	✓	✗	NA	✓	✗	✓	NA	NA	✓
Monitor	Monitor	✓	✓	✓	✓	✓	✓	✓	✓	✓	NA	✓	✗	NA	✓	✗	✓	NA	✓
Monitor	Monitor(Services Page)	✗	✓	NA	NA	✓	✓	NA	✓	✓	✓	✓	✓	NA	✓	✓	✓	NA	✓
Alerts	Alerts -> Thresholds	✓	✓	✓	✓	✓	✓	✓	✗	✓	NA	✓	✗	NA	✓	✗	✓	NA	✓
Alerts	Alerts -> Quota Violations	✓	✓	✓	NA	✓	✓	✓	✓	NA	✓	✗	NA	NA	✓	✗	NA	NA	✓

404265

Access privileges are determined by the role assigned to the user. A user may be granted privileges for all or some system configuration and management functions.

The CDN Operator Admin and CDN Operator Viewer have access to almost all the functions in VDS-SM except for the following:

- CDN Operator Admin—Reseller Profile, Content Provider Profile, Monitor (Services page).
- CDN Operator Viewer—Reseller Profile, Content Provider Profile, System Load Dashboard, License Usage, User Management, Monitor (Services page).

The following table lists the access privilege to Reseller Admin.

Main Menu and Navigation	Reseller Admin
Home > Scorecards	Delivery Service and Provider drop-down lists will be filtered for the Reseller. View results link, Analyze data icon, and Drilldown icon will not be available.
Analytics > Trends	Delivery Service and Provider drop-down lists will be filtered for the Reseller.
Analytics > Reports	Delivery Service and Provider drop-down lists will be filtered for the Reseller.
Analytics > Content > Analyze by Content Title	Delivery Service drop-down list will be filtered for the Reseller.
Analytics > Content > Viewership Report	Delivery Service and Provider drop-down lists will be filtered for the Reseller.

Main Menu and Navigation	Reseller Admin
Analytics > Sessions > Analyze by Client IP	Delivery Service and Provider drop-down lists will be filtered for the Reseller.
Analytics > Sessions > Session Report	Delivery Service and Provider drop-down lists will be filtered for the Reseller.
Configuration > Customers > Content Provider	Displays the list of Content Providers (assigned to the Reseller) associated with the customer. A Reseller Admin can create a Content Provider and assign delivery services.
Configuration > Content Purging	Only the content deletion tasks will be displayed for the Reseller Admin.
Administration > User Management	Delivery Service and Provider drop-down lists will be filtered for the Reseller. A Reseller Admin has the privilege to create a Reseller Viewer, Content Provider Admin, and Content Provider Viewer roles.
Monitor > Monitor (Services page)	The data displayed in the screen is filtered, based on the logged in user. Delivery Service and Provider drop-down lists will be filtered for the Reseller.

The following table lists the access privilege to Reseller Viewer.

Main Menu and Navigation	Reseller Viewer
Home > Scorecards	Delivery Service and Provider drop-down lists will be filtered for the Reseller. View results link, Analyze data icon, and Drilldown icon will not be available.
Analytics > Trends	Delivery Service and Provider drop-down lists will be filtered for the Reseller.
Analytics > Reports	Delivery Service and Provider drop-down lists will be filtered for the Reseller.
Analytics > Content > Analyze by Content Title	Delivery Service drop-down list will be filtered for the Reseller.
Analytics > Content > Viewership Report	Delivery Service and Provider drop-down lists will be filtered for the Reseller.
Analytics > Sessions > Analyze by Client IP	Delivery Service and Provider drop-down lists will be filtered for the Reseller.

Main Menu and Navigation	Reseller Viewer
Analytics > Sessions > Session Report	Delivery Service and Provider drop-down lists will be filtered for the Reseller.
Configuration > Customers > Content Provider	Displays the list of Content Providers (assigned to the Reseller) associated with the customer.
Configuration > Content Purging	Only the content deletion tasks will be displayed for the Reseller Viewer.
Monitor > Monitor (Services page)	The data displayed in the screen is filtered, based on the logged in user. Delivery Service and Provider drop-down lists will be filtered for the Reseller.

The following table lists the access privilege to Content Provider Admin.

Main Menu and Navigation	Content Provider Admin
Home > Scorecards	Delivery Service and Provider drop-down lists will be filtered for the Content Provider. View results link, Analyze data icon, and Drilldown icon will not be available.
Analytics > Trends	Data will be filtered for the respective Content Provider.
Analytics > Reports	Data will be filtered for the respective Content Provider.
Analytics > Content > Analyze by Content Title	Delivery Service drop-down list will be filtered for the respective Content Provider.
Analytics > Content > Viewership Report	Delivery Service and Provider drop-down lists will be filtered for the respective Content Provider.
Analytics > Sessions > Analyze by Client IP	Delivery Service and Provider drop-down lists will be filtered for the respective Content Provider.
Analytics > Sessions > Session Report	Delivery Service and Provider drop-down lists will be filtered for the respective Content Provider.
Configuration > Content Purging	Option to choose Delivery Server is not available. Content Provider Admin users can delete content from Delivery Services associated to them.
Configuration > Geo Fencing	Delivery Service drop-down list will be filtered for the respective Content Provider.

Main Menu and Navigation	Content Provider Admin
Administration > User Management	Data will be filtered for the respective Content Provider. A Content Provider Admin has the Privilege to create a Content Provider Viewer role.
Monitor > Monitor (Services page)	The data displayed in the screen is filtered, based on the logged in user. Delivery Service and Provider drop-down lists will be filtered for the respective Content Provider.

The following table lists the access privilege to Content Provider Viewer.

Main Menu and Navigation	Content Provider Viewer
Home > Scorecards	Delivery Service and Provider drop-down lists will be filtered for the Content Provider. View results link, Analyze data icon, and Drilldown icon will not be available.
Analytics > Trends	Data will be filtered for the respective Content Provider.
Analytics > Reports	Data will be filtered for the respective Content Provider.
Analytics > Content > Analyze by Content Title	Delivery Service drop-down list will be filtered for the respective Content Provider.
Analytics > Content > Viewership Report	Delivery Service and Provider drop-down lists will be filtered for the respective Content Provider.
Analytics > Sessions > Analyze by Client IP	Delivery Service and Provider drop-down lists will be filtered for the respective Content Provider.
Analytics > Sessions > Session Report	Delivery Service and Provider drop-down lists will be filtered for the respective Content Provider.
Configuration > Content Purging	Only the content deletion tasks will be displayed for the Content Provider Viewer.
Monitor > Monitor (Services page)	The data displayed in the screen is filtered, based on the logged in user. Delivery Service and Provider drop-down lists will be filtered for the respective Content Provider.

**Note**

The delivery server and delivery server group filters are not available for the wholesale users.



Home

- [Home Overview, page 27](#)
- [Network, page 31](#)
- [Protocol, page 48](#)
- [Content, page 59](#)
- [Viewers, page 64](#)
- [Content Origin, page 71](#)
- [Customizing Home Scorecards, page 78](#)

Home Overview

The logs from VDS-IS are summarized and indexed in VDS-SM. The enormous information present in logs are displayed in charts to help the operators understand their CDN network. This provides an holistic view of a CDN.

On logging into the application, the Home page is displayed. It includes various scorecards. A scorecard is a dashboard, which displays specific information about network, protocol, content, viewers, and content origin data of managed CDN.

Home tab includes the following scorecards:

- Network
- Protocol
- Content
- Viewers
- Content Origin

The Content Origin scorecard is available only to the CDN operators. The CDN operator can customize the wholesale users from viewing the metrics of Network, Protocol, Content, and Viewers scorecards. To customize the wholesale users from viewing the metrics of Home scorecards, see [Customizing Home Scorecards, on page 78](#).

Using the Scorecards

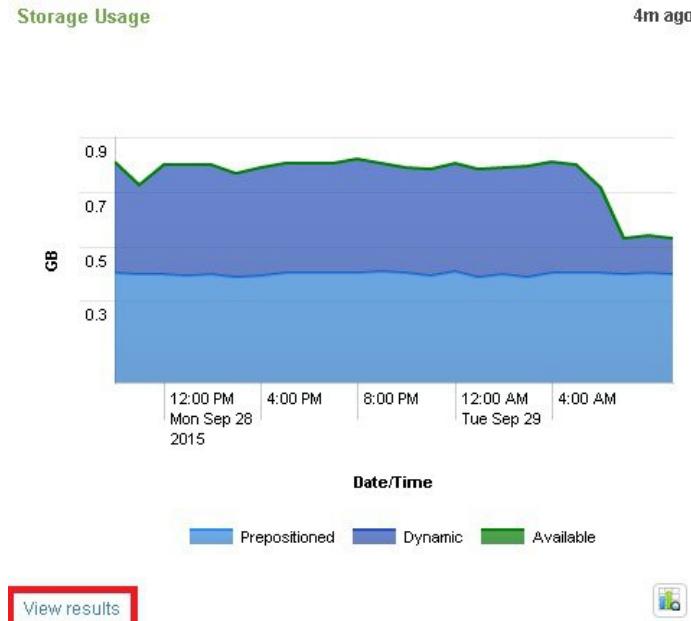
Using the scorecards, you can:

- Mouse hover a specific point within a chart, which displays additional information such as time and value parameters.



- **View results**

The CDN operators can access the summarized information corresponding to the dashlets. Click **View results**, located at the bottom left of each chart, to view the report.



From within the source report, you can choose a desired row to display the log details for the item.

Search | Actions ▾
index=summary_cdn_5m report=cdn_snapshot_5m earliest=-25h@n latest=-1h@n ProviderName="" DeliveryServiceName="" ServerName="" | bucket _time
835 matching events
208 results over all time (from 11:30:00 AM July 3 to 11:30:00 AM July 4, 2013)
All time ▾ [Search]

Overlay:	None	Average	Peak	Capacity
1	7/3/13 11:30:00.000 AM	1126.690000	2535.81	115
2	7/3/13 11:35:00.000 AM	1108.140000	2386.48	115
3	7/3/13 11:40:00.000 AM	1122.815000	2482.71	115
4	7/3/13 11:45:00.000 AM	1095.780000	2460.54	115
5	7/3/13 11:50:00.000 AM	1040.940000	2218.59	115
6	7/3/13 11:55:00.000 AM	1092.035000	2560.03	115
7	7/3/13 12:00:00.000 PM	1124.970000	2339.38	115
8	7/3/13 12:05:00.000 PM	1090.955000	2284.65	115

• Analyze data

The chart in few scorecards contain data at a high-level. The CDN Operators have the option to drill

down the data in the chart at a granular level. Click **Analyze data** icon , located at the bottom right of the chart, to view the details. Here, the CDN Operators can view the data plotted using various metrics over different dimensions that are split by the required dimension.

You can also view the data represented in different charts, such as line, bar, area and pie, by clicking the **Chart type** drop-down list, which appears after you click **Analyze data** icon.

Click **Analyze, of, over, and split by** drop-down lists and choose the required options. You can also choose the stack mode from the **Stack mode** drop-down list.

• Drill down

The CDN Operators can drill down the data in the chart at a multi-dimensional level. Click **Drill down**



icon, located at the bottom right of the chart, to view the comprehensive data. Here, the CDN Operators can view the data at the server group, delivery server, location and delivery service levels.

Legend

Depending on the chart, if more than one data set is displayed, a legend is located below the chart.

Lookups

Lookup is a process, which replaces the raw data from the logs with meaningful information. In VDS-SM, lookups are performed during summary index creation and chart rendition. CSV files and third party databases are used in the lookup operations.

Following is the list of lookups:

Lookup Name	Description
Title	The raw logs has the URL field, which contains the 'asset' information. Lookup is performed on provider_title.csv file to get a meaningful Title name. This lookup is performed during summarization.
Genre, Resolution	The raw logs do not contain any information on Genre and Resolution. Based on 'asset', the Genre and Resolution are looked up from provider_title.csv file. This lookup is performed during summarization.
Bitrate	The ABR traffic type's (HLS, HDS, MobiTV, and MPEG DASH) raw logs have 'profile name' to indicate bitrate. Lookup is performed on profilename_bitrate.csv to get the related bitrates for profile names. This lookup is performed during summarization.
ISP, Net Speed	The raw logs do not contain information on ISP and Net Speed. It has ClientIP. Lookup is performed on Maxmind DB using ClientIP to get ISP and Net Speed. The Lookup works for public IP addresses. This lookup is performed during summarization.
City	The raw logs do not contain the City information. It has ClientIP. Lookup is performed on Maxmind DB using ClientIP to get City. The Lookup works for public IP addresses. This lookup is performed during chart rendition.
Client Type	The raw logs has User Agent related information. Lookup is performed on useragent_device.csv file using User Agent to get Client Type. This lookup is performed during summarization.
Capacity	The Bandwidth and Storage capacity of Delivery Servers are maintained in the delivery_server_capacity.csv file. These capacity values are looked up and added to the summary indexes during summarization.
Provider	When CP lookup is implemented, users extract CP ID from the URL. Lookup is performed on content_provider.csv file using CP ID to get CP name. This lookup is performed during summarization.
Server Topology	Lookup is performed on the origin_server_topology.csv file to manage content origin dashboards. This lookup is performed during summarization.

Network

When you launch the application, by default, the Network tab is displayed in the Home page. This scorecard displays charts that provides the users a quick overview on the overall performance of the network. By default, the data for the last 24 hours is displayed in the scorecard.

The following metrics are displayed here:

- Throughput (Gbps)
- Concurrent Active Sessions
- Cache Hit Ratio
- Response Status Codes
- Storage Usage

**Note**

The Delivery Server Group filter grouping is based on the node locations.

Throughput



The following table describes the chart within this scorecard:

Table 5: Throughput Chart & Description

Chart	Description
Throughput (Gbps)	Illustrates the bandwidth delivered by the network, for the specified time interval.
Chart Information	The information within this chart is shown in a line graph with Date/Time along the X-axis and Peak Throughput, Average Throughput, and Capacity in Gbps along the Y-axis. The legends are Peak, Average, and Capacity.
Chart Formula	The formula used to derive the peak and average throughput graph is: the maximum and mean throughput for the specified time interval.
Chart Filters	This chart uses Time Range (Last 60 Minutes, Last 24 Hours, and Last 7 days), Delivery Server Group, Delivery Server, Provider, and Delivery Service as filters.

**Note**

If requests are made directly to the service engine without the service router, this dashlet will not be displayed.

Click the drill down icon to view throughput at the server group, delivery server, location and delivery service levels.

Throughput by Server Group

Throughput by Server Group

Top 10 ▾

Server Group ▾	Peak Throughput (Gbps) ▾
1 BOX04	1.44
2 BOX03	1.35
3 BOX02	1.31
4 BOX01	1.26

The following table describes the information in the tabular column:

Table 6: Throughput by Server Group Table & Description

Table	Description
Throughput by Server Group	Illustrates the top server groups based on the bandwidth delivered by the network, for the specified time interval. From the drop-down list, select the respective option to view the Top 10 or Top 20 and Top 50 server groups.
Table Information	The information within this table are server group and peak throughput (Gbps).
Formula	The formula used is: peak throughput at the server group level.
Filters	This chart uses Time Range (Last 60 Minutes, Last 24 Hours, and Last 7 Days) as filter.

Throughput by Delivery Server

Throughput by Delivery Server		Top 10 ▾
Delivery Server	Peak Throughput (Gbps)	
1 bniboxciscose03	1.51	
2 bniboxciscose02	1.01	
3 bniboxciscose04	0.91	
4 bniboxciscose01	0.78	

The following table describes the information in the tabular column:

Table 7: Throughput by Delivery Server Table & Description

Table	Description
Throughput by Delivery Server	Illustrates the top delivery servers based on the bandwidth delivered by the network, for the specified time interval. From the drop-down list, select the respective option to view the Top 10 or Top 20 and Top 50 delivery servers.

Table	Description
Table Information	The information within this table are delivery server and peak throughput (Gbps).
Formula	The formula used is: peak throughput at the delivery server level.
Filters	This chart uses Time Range (Last 60 Minutes, Last 24 Hours, and Last 7 Days) as filter.

Throughput by Location



The Throughput by Location map displays the delivery server location as points. When you mouse over a point (server location), the server name and its throughput will be displayed.

The Throughput by Location map uses Time Range (Last 60 Minutes, Last 24 Hours, and Last 7 Days) as filter.

Throughput by Delivery Service

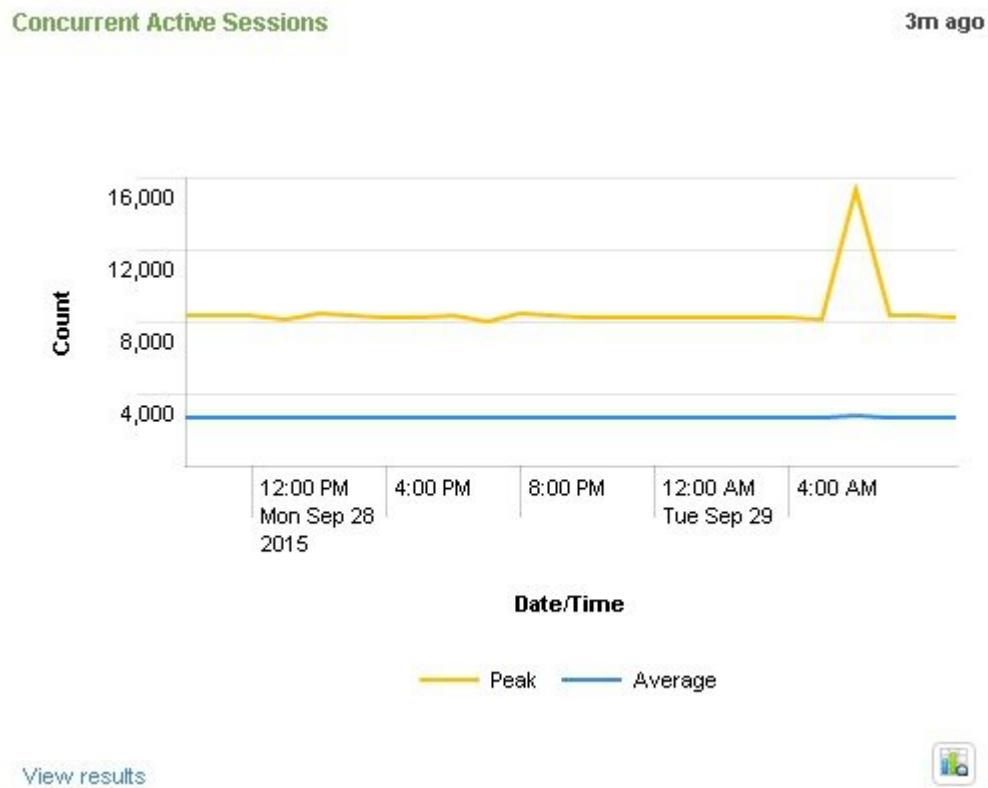
Throughput by Delivery Service		Top 10 ▾
	Delivery Service ♦	Peak Throughput (Gbps) ♦
1	ccp-woburn-smooth-live02	0.16
2	cim-test-iis-02	0.16
3	cim-test-iis-01	0.16
4	ccp3-woburn-smooth-vod01	0.16
5	ccp2-cmc-smooth-pod01iis01	0.16
6	ccp3-cmc-smooth-localpod02-linear	0.16
7	ccp-cmc-smooth-pod01iis02	0.15
8	ccp2-cmc-smooth-pod01iis02	0.15
9	ccp-cmc-smooth-pod01iis01	0.15
10	ccp-cmc-smooth-localpod01-linear	0.15

The following table describes the information in the tabular column:

Table 8: Throughput by Delivery Service Table & Description

Table	Description
Throughput by Delivery Service	Illustrates the top delivery services based on the bandwidth delivered by the network, for the specified time interval. From the drop-down list, select the respective option to view the Top 10 or Top 20 and Top 50 delivery services.
Table Information	The information within this table are delivery service and peak throughput (Gbps).
Formula	The formula used is: peak throughput at the delivery service level .
Filters	This chart uses Time Range (Last 60 Minutes, Last 24 Hours, and Last 7 Days) as filter.

Concurrent Active Sessions



The following table describes the chart within this scorecard:

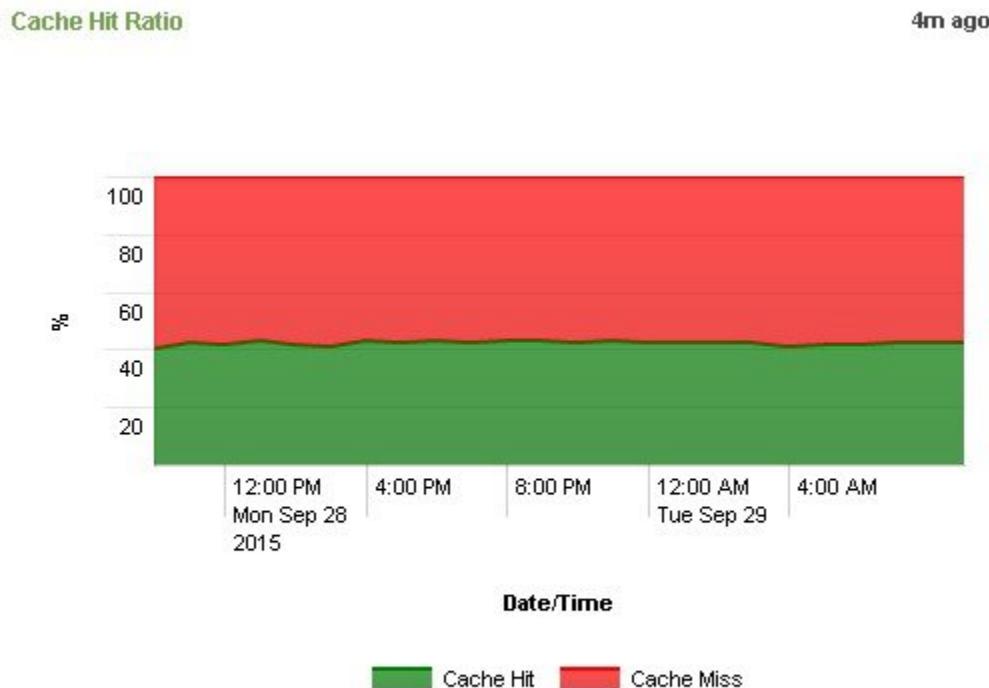
Table 9: Concurrent Active Sessions Chart & Description

Chart	Description
Concurrent Active Sessions	Illustrates the concurrent active sessions, for the specified time interval.
Chart Information	The information within this chart is a line graph with Date/Time along the X-axis and the Peak and Average Count along the Y-axis. The legends representing the graph are Peak and Average.
Chart Formula	The formula used to derive the graph is: maximum and mean active sessions, for the specified time interval.
Chart Filters	This chart uses Time Range (Last 60 Minutes, Last 24 Hours, and Last 7 days), Delivery Server Group, Delivery Server, Provider, and Delivery Service as filters.

**Note**

If requests are made directly to service engine without service router, this dashlet will not be populated.

Cache Hit Ratio



The following table describes the chart within this scorecard:

Table 10: Cache Hit Ratio Chart & Description

Chart	Description
Cache Hit Ratio	Provides client request cache hit and miss percentage, for the specified time interval.
Chart Information	The information within this chart is shown in a stacked area graph with Date/Time along the X-axis and the cache hit and miss percentage in the Y-axis. The legends representing the graph are Cache Hit and Cache Miss.

Chart	Description
Chart Formula	The formula used to derive the cache hit graph is: the percentage of cache hit over total requests. The formula used to derive the cache miss graph is: the percentage of cache miss over total requests.
Chart Filters	This chart uses Time Range (Last 60 Minutes, Last 24 Hours, and Last 7 days), Delivery Server Group, Delivery Server, Provider, and Delivery Service as filters.

Click the drill down icon to view cache hit ratio at the server group, delivery server, location and delivery service levels.

Cache Hit Ratio by Server Group

Cache Hit Ratio by Server Group		Top 10 ▾
	Server Group ↴	Cache Hit Ratio (%) ↴
1	BOX04	41.94
2	BOX03	37.18
3	BOX02	35.71
4	BOX01	24.17

The following table describes the information in the tabular column:

Table 11: Cache Hit Ratio by Server Group Table & Description

Table	Description
Cache Hit Ratio by Server Group	Illustrates the top server groups based on the cache hit and miss percentage, for the specified time interval. From the drop-down list, select the respective option to view the Top 10 or Top 20 and Top 50 server groups.
Table Information	The information within this table are server group and cache hit ratio (%).

Table	Description
Formula	The formula used is: percentage of cache hit count over sum of cache hit and cache miss count at the server group level.
Filters	This chart uses Time Range (Last 60 Minutes, Last 24 Hours, and Last 7 Days) as filter.

Cache Hit Ratio by Delivery Server

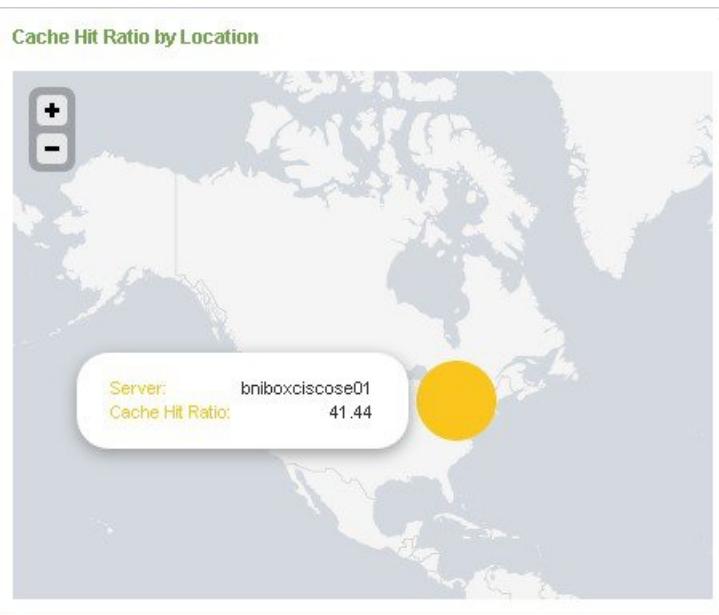
Cache Hit Ratio by Delivery Server		Top 10 ▾
	Delivery Server	Cache Hit Ratio (%)
1	bniboxciscose01	42.07
2	bniboxciscose02	39.16
3	bniboxciscose04	31.27
4	bniboxciscose03	25.43

The following table describes the information in the tabular column:

Table 12: Cache Hit Ratio by Delivery Server Table & Description

Table	Description
Cache Hit Ratio by Delivery Server	Illustrates the top delivery servers based on the cache hit and miss percentage, for the specified time interval. From the drop-down list, select the respective option to view the Top 10 or Top 20 and Top 50 delivery servers.
Table Information	The information within this table are delivery server and cache hit ratio (%).
Formula	The formula used is: percentage of cache hit count over sum of cache hit and cache miss count at the delivery server level.
Filters	This chart uses Time Range (Last 60 Minutes, Last 24 Hours, and Last 7 Days) as filter.

Cache Hit Ratio by Location



The Cache Hit Ratio by Location map displays the delivery server location as points. When you mouse over a point (server location), the server name and its cache hit ratio will be displayed.

The Cache Hit Ratio by Location map uses Time Range (Last 60 Minutes, Last 24 Hours, and Last 7 Days) as filter.

Cache Hit Ratio by Delivery Service

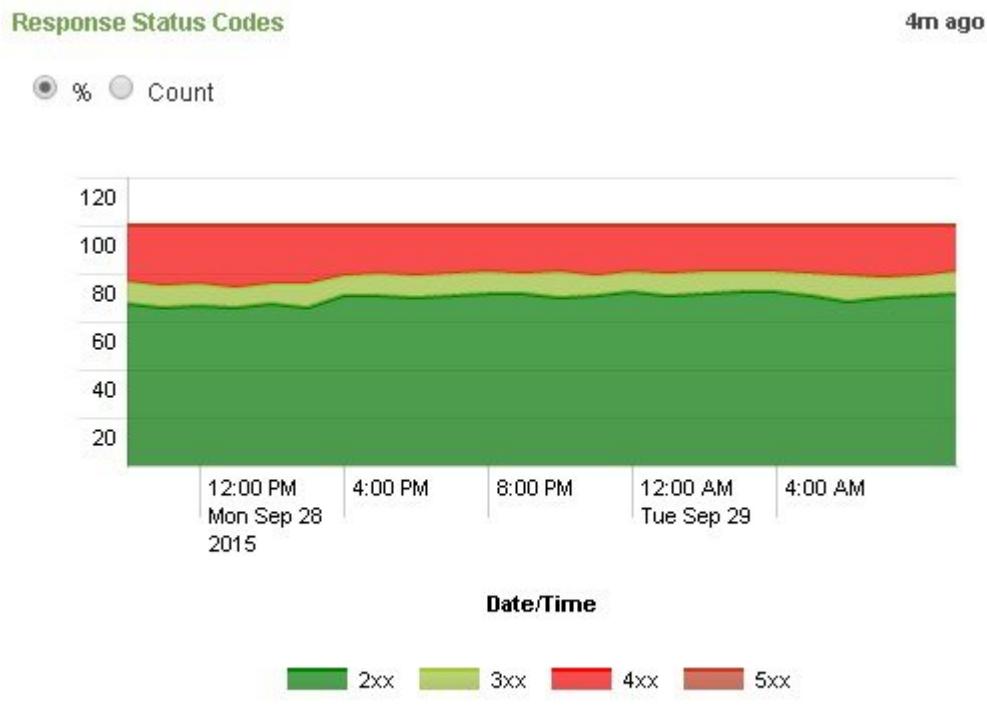
Cache Hit Ratio by Delivery Service		Top 10 ▾
	Delivery Service	Cache Hit Ratio (%)
1	ccp-cmc-smooth-localpod02-linear	100.00
2	ccp2-cmc-smooth-localpod02-linear	100.00
3	ccp3-cmc-smooth-localpod02-linear	100.00
4	cim-test-iis-01	100.00
5	cim2-test-iis-01	100.00
6	cim3-test-iis-01	100.00
7	ccp2-cmc-smooth-localpod01-linear	75.00
8	cim-test-iis-02	75.00
9	ccp-cmc-smooth-localpod01-linear	74.90
10	cim2-test-iis-02	74.79

The following table describes the information in the tabular column:

Table 13: Cache Hit Ratio by Delivery Service Table & Description

Table	Description
Cache Hit Ratio by Delivery Service	Illustrates the top delivery services based on the cache hit and miss percentage, for the specified time interval. From the drop-down list, select the respective option to view the Top 10 or Top 20 and Top 50 delivery services.
Table Information	The information within this table are delivery service and cache hit ratio (%).
Formula	The formula used is: percentage of cache hit count over sum of cache hit and cache miss count at the delivery service level.
Filters	This chart uses Time Range (Last 60 Minutes, Last 24 Hours, and Last 7 Days) as filter.

Response Status Codes



[View results](#)



The following table describes the chart within this scorecard:

Table 14: Response Status Codes Chart & Description

Chart	Description
Response Status Codes	<p>Provides count and percentage of response codes, for the specified time interval.</p> <p>To view the response status code in percentage and count, click the respective radio buttons located above the chart.</p>
Chart Information	<p>The information within this chart is shown in stacked area with Date/Time along the X-axis with the response count and percentage along the Y-axis. The legends representing the graph are 2xx, 3xx, 4xx, and 5xx.</p>

Chart	Description
Chart Formula	The status code from logs are grouped as 2xx, 3xx, 4xx, and 5xx. The count of each group is calculated as the sum of individual status code counts. The percentage of each group is derived by calculating the percentage of group count over total responses.
Chart Filters	This chart uses Time Range (Last 60 Minutes, Last 24 Hours, and Last 7 days), Delivery Server Group, Delivery Server, Provider, and Delivery Service as filters.

Click the drill down icon to view client and server errors at the server group, delivery server, location and delivery service levels.

Errors by Server Group

Errors by Server Group			
	Server Group	Client Errors	Server Errors
1	BOX01	8210	0
2	BOX04	8435	0
3	BOX03	7261	0
4	BOX02	4973	0

The following table describes the information in the tabular column:

Table 15: Errors by Server Group Table & Description

Table	Description
Errors by Server Group	Illustrates the top server groups based on the count of client errors and server errors, for the specified time interval. From the drop-down list, select the respective option to view the Top 10 or Top 20 and Top 50 server groups.
Table Information	The information within this table are server group, client errors and server errors.

Table	Description
Formula	The formula used is: sum of client errors and sum of server errors at the server group level.
Filters	This chart uses Time Range (Last 60 Minutes, Last 24 Hours, and Last 7 Days) as filter.

Errors by Delivery Server

Errors by Delivery Server			
	Delivery Server	Client Errors	Server Errors
1	bniboxciscose01	8210	0
2	bniboxciscose04	8435	0
3	bniboxciscose03	7261	0
4	bniboxciscose02	4973	0

The following table describes the information in the tabular column:

Table 16: Errors by Delivery Server Table & Description

Table	Description
Errors by Delivery Server	Illustrates the top delivery servers based on the count of client errors and server errors, for the specified time interval. From the drop-down list, select the respective option to view the Top 10 or Top 20 and Top 50 delivery servers.
Table Information	The information within this table are delivery server, client errors and server errors.
Formula	The formula used is: sum of client errors and sum of server errors at the delivery server level.
Filters	This chart uses Time Range (Last 60 Minutes, Last 24 Hours, and Last 7 Days) as filter.

Errors by Location



The Errors by Location map displays the delivery server location as points. When you mouse over a point (server location), the server name, and its client errors and server errors will be displayed.

The Errors by Location map uses Time Range (Last 60 Minutes, Last 24 Hours, and Last 7 Days) as filter.

Errors by Delivery Service

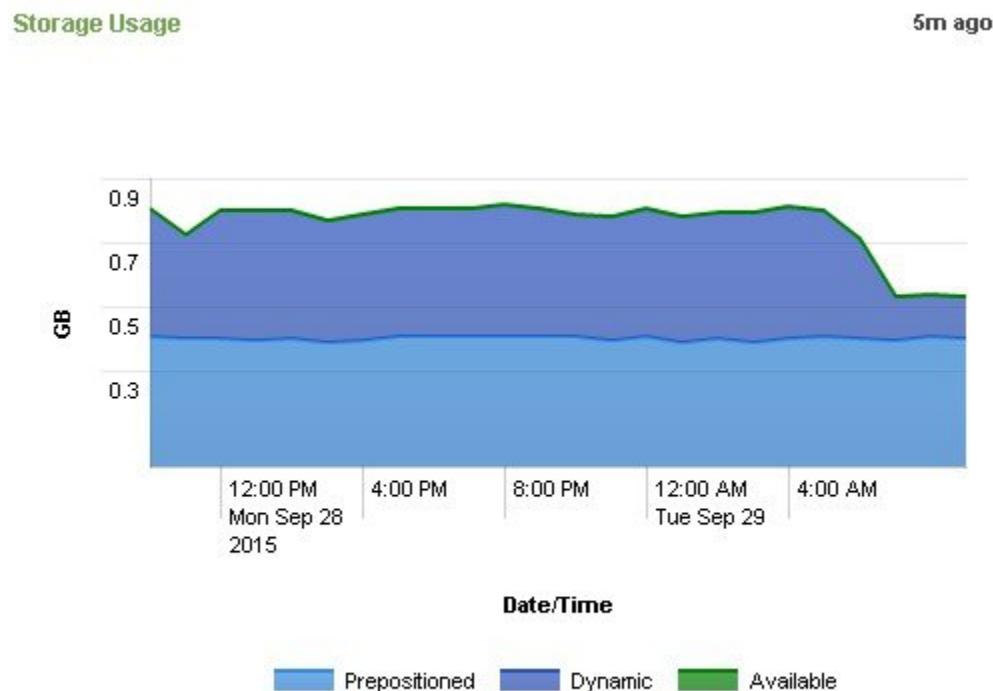
Errors by Delivery Service			
	Delivery Service	Client Errors	Server Errors
1	ccp3-cmc-smooth-localpod02-linear	635	0
2	wmt-test2	617	0
3	cim2-cim2-smooth	389	0
4	ccp2-cmc-smooth-pod01iis01	384	0
5	ccp-ccp-images	383	0
6	ccp-woburn-smooth-live01	382	0
7	cim3-test-iis-01	381	0
8	cim2-test-iis-02	299	0
9	cim3-test-iis-02	258	0
10	ccp2-cmc-smooth-localpod02-linear	228	0

The following table describes the information in the tabular column:

Table 17: Errors by Delivery Service Table & Description

Table	Description
Errors by Delivery Service	<p>Illustrates the top delivery services based on the count of client errors and server errors, for the specified time interval.</p> <p>From the drop-down list, select the respective option to view the Top 10 or Top 20 and Top 50 delivery services.</p>
Table Information	The information within this table are delivery service, client errors and server errors.
Formula	The formula used is: sum of client errors and sum of server errors at the delivery service level.
Filters	This chart uses Time Range (Last 60 Minutes, Last 24 Hours, and Last 7 Days) as filter.

Storage Usage



[View results](#)



The following table describes the chart within this scorecard:

Table 18: Storage Usage Chart & Description

Chart	Description
Storage Usage	Illustrates the storage usage for the specified time interval.
Chart Information	The information within this chart is shown in a stacked area graph with the Date/Time along the X-axis and the storage usage as Prepositioned, Dynamic, and Available in GB along the Y-axis. The legends representing the graph are Prepositioned, Dynamic, and Available.
Chart Formula	The prepositioned and dynamic values are derived by calculating the average of prepositioned and dynamic data, for the specified time interval. The available capacity is derived by calculating the difference between the storage capacity (as specified in the delivery_server_capacity.csv file) and the sum of prepositioned plus dynamic data.

Chart	Description
Chart Filters	This chart uses Time Range (Last 60 Minutes, Last 24 Hours, and Last 7 days), Delivery Server Group, Delivery Server, Provider, and Delivery Service as filters.

Protocol

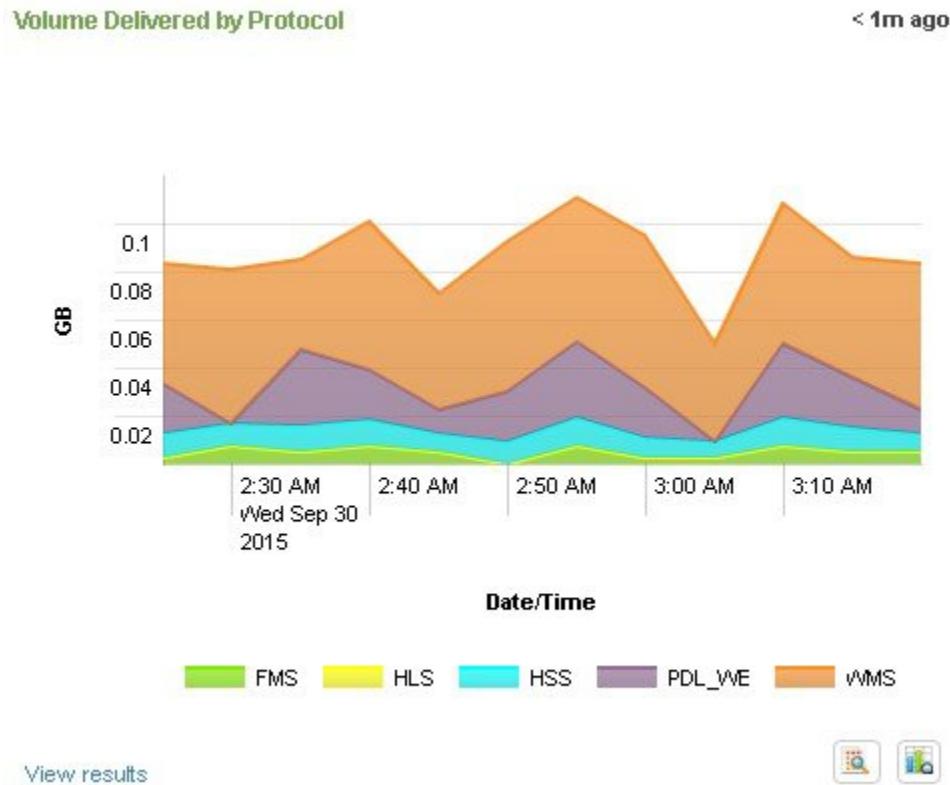
This tab displays charts that provides an overview of the network at the protocol level. By default, the data for the last 60 minutes is displayed in the scorecard.

To access this tab, choose **Home > Protocol**.

The following metrics are displayed here:

- Volume Delivered by Protocol
- Total Requests by Protocol
- Response Codes by Protocol
- Cache Hit Ratio by Protocol
- ABR Session Bitrate by Protocol
- 4xx Errors by Protocol

Volume Delivered by Protocol



The following table describes the chart within this scorecard:

Table 19: Volume Delivered by Protocol Chart & Description

Chart	Description
Volume Delivered by Protocol	Illustrates the volume delivered by each protocol, for the specified time interval.
Chart Information	The information within this chart is shown in a stacked area graph with Date/Time along the X-axis and the volume delivered in GB along the Y-axis. The legends representing the graph are protocols.
Chart Formula	The formula used to derive the graph is: Total of CacheMissBytes, CacheHitBytes, and NoCacheCodeBytes grouped by Protocol.
Chart Filters	This chart uses Time Range (Last 60 Minutes, Last 24 Hours, and Last 7 days), Delivery Server Group, Delivery Server, Provider, and Delivery Service as filters.

Click the drill down icon to view volume of bytes delivered at the server group, delivery server, location and delivery service levels.

Volume Delivered by Server Group

Volume Delivered by Server Group		Top 10 ▾
	Server Group ↴	Volume Delivered (GB) ↴
1	BOX01	1.39
2	BOX04	1.18
3	BOX03	0.92
4	BOX02	0.18

The following table describes the information in the tabular column:

Table 20: Volume Delivered by Server Group Table & Description

Table	Description
Volume Delivered by Server Group	Illustrates the top server groups based on the volume of bytes delivered, for the specified time interval. From the drop-down list, select the respective option to view the Top 10 or Top 20 and Top 50 server groups.
Table Information	The information within this table are server group and volume delivered (GB).
Formula	The formula used is: sum of CacheMissBytes, CacheHitBytes, and NoCacheCodeBytes at the server group level.
Filters	This chart uses Time Range (Last 60 Minutes, Last 24 Hours, and Last 7 Days) as filter.

Volume Delivered by Delivery Server

Volume Delivered by Delivery Server		Top 10 ▾
	Delivery Server ↴	Volume Delivered (GB) ↴
1	bniboxciscose01	1.39
2	bniboxciscose04	1.18
3	bniboxciscose03	0.92
4	bniboxciscose02	0.18

The following table describes the information in the tabular column:

Table 21: Volume Delivered by Delivery Server Table & Description

Table	Description
Volume Delivered by Delivery Server	Illustrates the top delivery servers based on the volume of bytes delivered, for the specified time interval. From the drop-down list, select the respective option to view the Top 10 or Top 20 and Top 50 delivery servers.
Table Information	The information within this table are delivery server and volume delivered (GB).
Formula	The formula used is: sum of CacheMissBytes, CacheHitBytes, and NoCacheCodeBytes at the delivery server level.
Filters	This chart uses Time Range (Last 60 Minutes, Last 24 Hours, and Last 7 Days) as filter.

Volume Delivered by Location



The Volume Delivered by Location map displays the delivery server location as points. When you mouse over a point (server location), the server name, and the volume of bytes delivered (GB) will be displayed.

The Volume Delivered by Location map uses Time Range (Last 60 Minutes, Last 24 Hours, and Last 7 Days) as filter.

Volume Delivered by Delivery Service

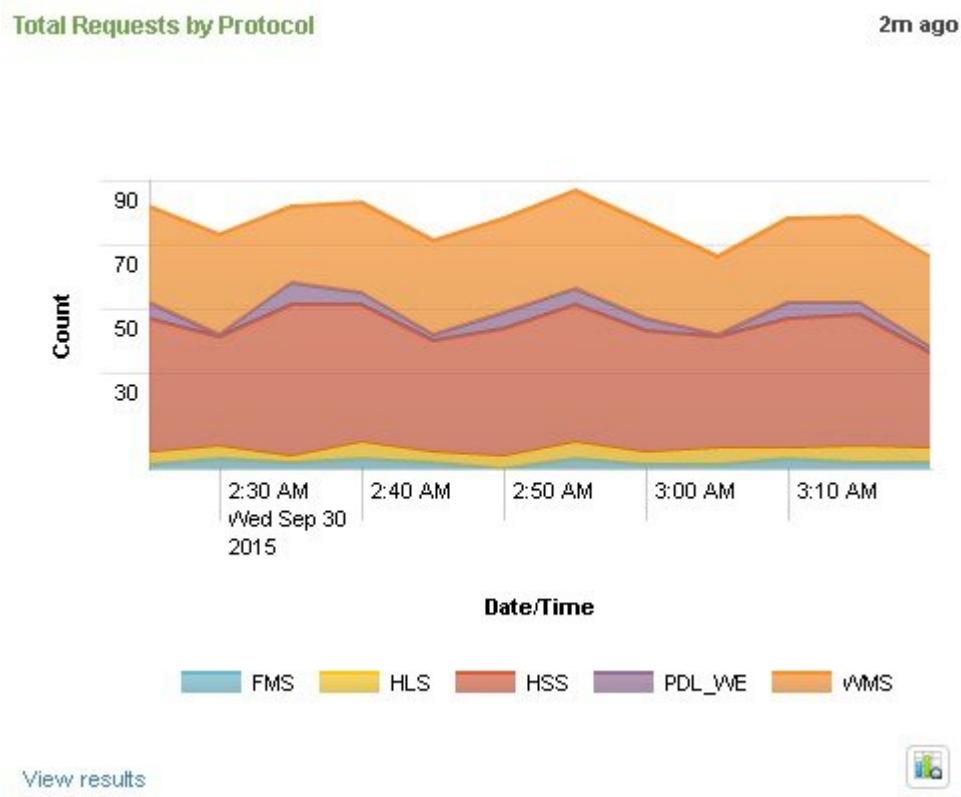
Volume Delivered by Delivery Service		Top 10 ▾
	Delivery Service	Volume Delivered (GB)
1	wmt-test2	0.30
2	cim3-cim3-prog	0.09
3	ccp-woburn-smooth-live01	0.07
4	ccp-ccp-images	0.07
5	cim3-test-iis-01	0.07
6	ccp2-woburn-smooth-live01	0.06
7	cim3-cim3-smooth	0.06
8	cim2-cim2-smooth	0.06
9	ccp3-cmc-smooth-localpod02-linear	0.05
10	cim-test-iis-01	0.05

The following table describes the information in the tabular column:

Table 22: Volume Delivered by Delivery Service Table & Description

Table	Description
Volume Delivered by Delivery Service	Illustrates the top delivery services based on the volume of bytes delivered, for the specified time interval. From the drop-down list, select the respective option to view the Top 10 or Top 20 and Top 50 delivery services.
Table Information	The information within this table are delivery service and volume delivered (GB).
Formula	The formula used is: sum of CacheMissBytes, CacheHitBytes, and NoCacheCodeBytes at the delivery service level.
Filters	This chart uses Time Range (Last 60 Minutes, Last 24 Hours, and Last 7 Days) as filter.

Total Requests by Protocol

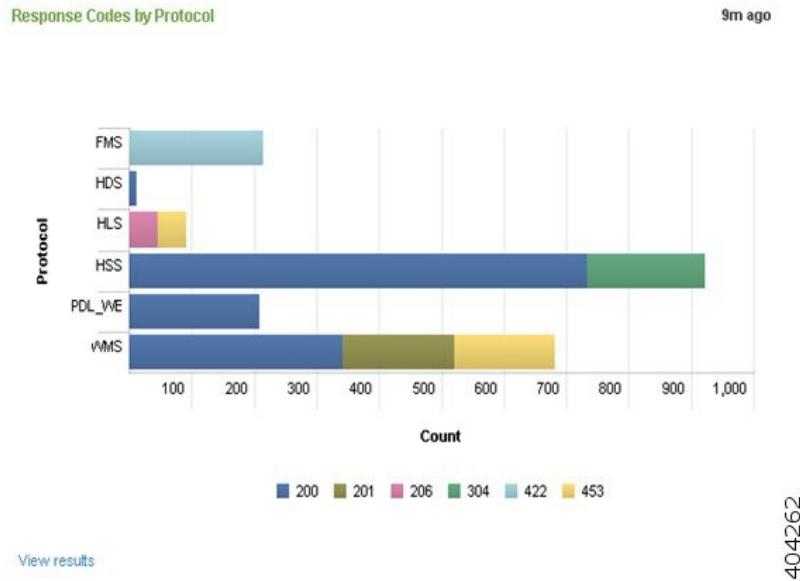


The following table describes the chart within this scorecard:

Table 23: Total Requests by Protocol Chart & Description

Chart	Description
Total Requests by Protocol	Illustrates the number of requests received from each protocol, for the specified time interval.
Chart Information	The information within this chart is shown in a stacked area graph with Date/Time along the X-axis and the request Count along the Y-axis. The legends representing the graph are protocols.
Chart Formula	The formula used to derive the graph is: sum of all status code counts grouped by protocol.
Chart Filters	This chart uses Time Range (Last 60 Minutes, Last 24 Hours, and Last 7 days), Delivery Server Group, Delivery Server, Provider, and Delivery Service as filters.

Response Codes by Protocol

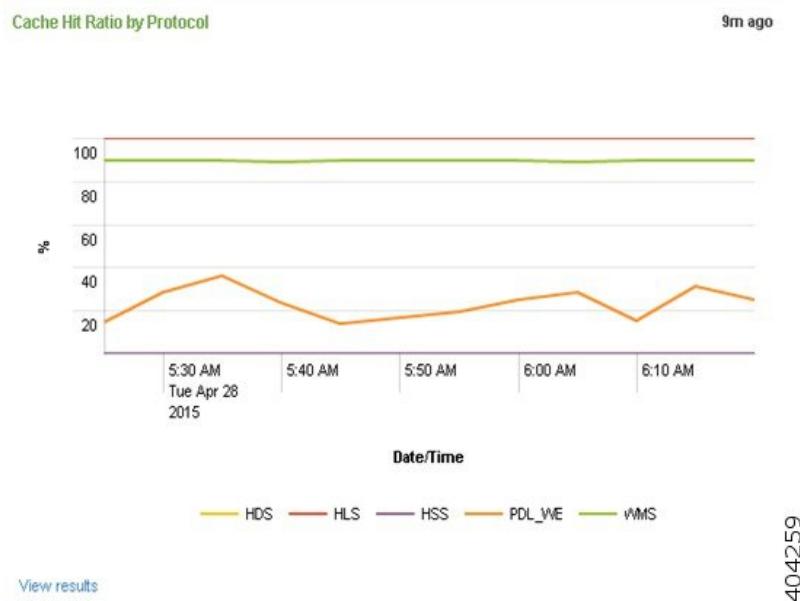


The following table describes the chart within this scorecard:

Table 24: Response Codes by Protocol Chart & Description

Chart	Description
Response Codes by Protocol	Illustrates the response codes for each protocol.
Chart Information	The information within this chart is a stacked bar graph with Count along the X-axis and Protocol along the Y-axis. The legends represent individual response codes.
Chart Formula	The formula used to derive the stacked bar graphs is: the count of individual response codes grouped by the response code and protocol.
Chart Filters	This chart uses Time Range (Last 60 Minutes, Last 24 Hours, and Last 7 days), Delivery Server Group, Delivery Server, Provider, and Delivery Service as filters.

Cache Hit Ratio by Protocol

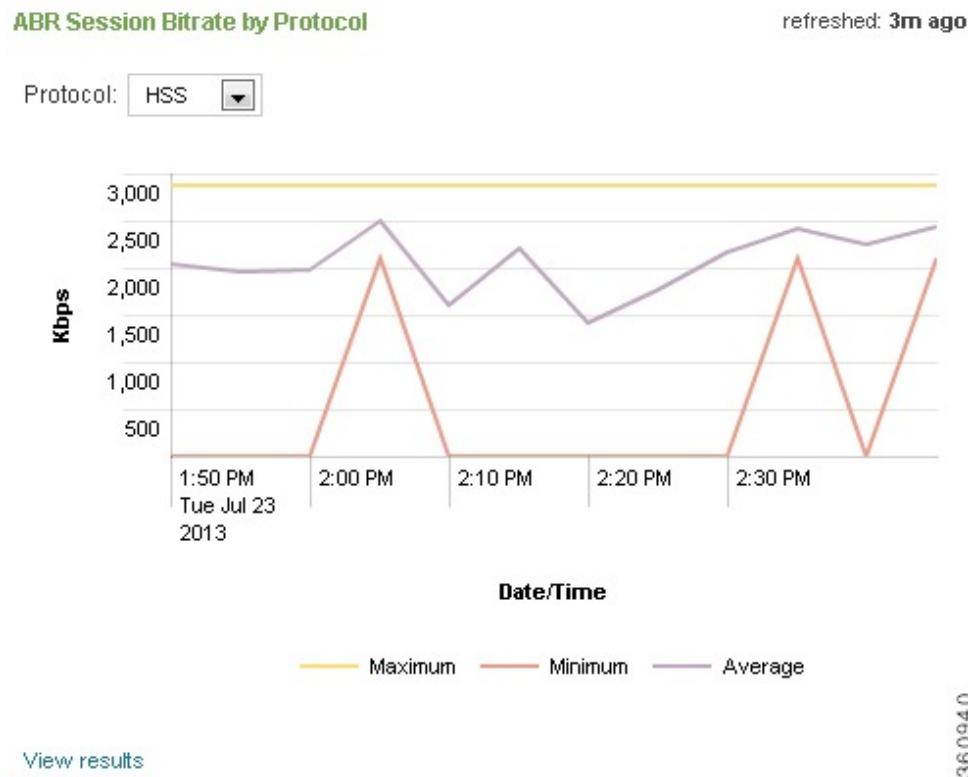


The following table describes the chart within this scorecard:

Table 25: Cache Hit Ratio by Protocol Chart & Description

Chart	Description
Cache Hit Ratio by Protocol	Illustrates the cache hit ratio for each protocol, for the specified time interval.
Chart Information	The information within this chart is shown in a line graph with Date/Time along the X-axis and cache hit ratio (%) along the Y-axis. The legends representing the graph are protocols.
Chart Formula	The formula used to derive the graph is: the percentage of cache hit over total requests grouped by the protocol.
Chart Filters	This chart uses Time Range (Last 60 Minutes, Last 24 Hours, and Last 7 days), Delivery Server Group, Delivery Server, Provider, and Delivery Service as filters.

ABR Session Bitrate by Protocol



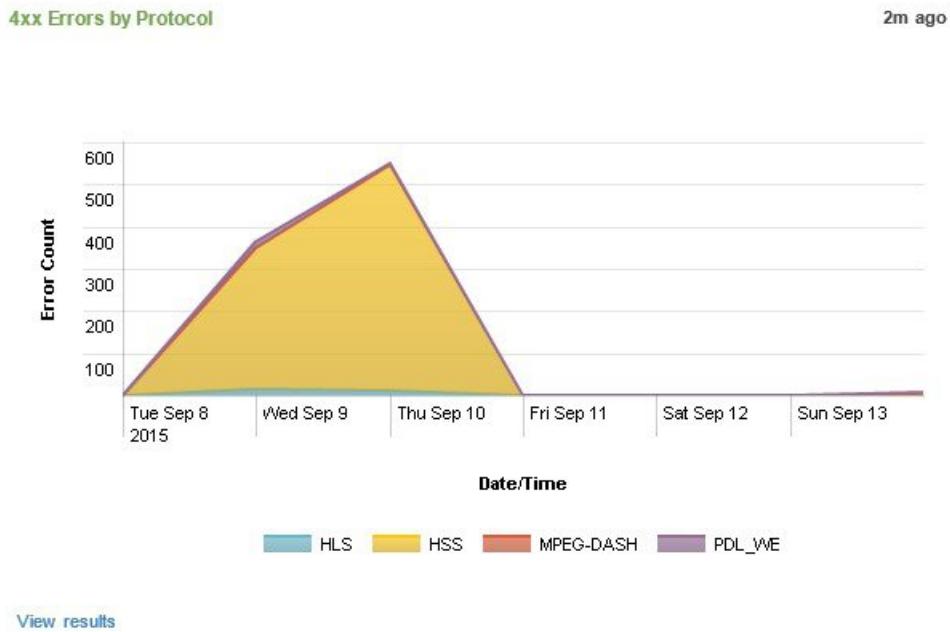
The following table describes the chart within this scorecard:

Table 26: ABR Session Bitrate by Protocol Chart & Description

Chart	Description
ABR Session Bitrate by Protocol	Provides HSS (HTTP smooth streaming), HLS (HTTP live streaming), HDS (HTTP Dynamic Streaming), MPEG-DASH (Dynamic Adaptive Streaming over HTTP) and MobiTV average bitrate (Kbps). Click the Protocol drop-down list and select the respective protocol to choose HSS, HLS, HDS, MPEG-DASH and MobiTV.
Chart Information	The information within this chart is shown in a line graph with Date/Time along the X-axis and maximum, minimum, and average bitrate (Kbps) along the Y-axis. The legends representing the graph are maximum, minimum, and average.

Chart	Description
Chart Formula	The formula used to derive the line graphs is: maximum, minimum, and average of bitrate, for the specified time interval.
Chart Filters	This chart uses Time Range (Last 60 Minutes, Last 24 Hours, and Last 7 days), Delivery Server Group, Delivery Server, Provider, and Delivery Service as filters.

4xx Errors by Protocol



The following table describes the chart within this scorecard:

Table 27: 4xx Errors by Protocol Chart & Description

Chart	Description
4xx Errors by Protocol	Illustrates the number of 4xx errors for each protocol, for the specified time interval.
Chart Information	The information within this chart is shown in a stacked area graph with the Date/Time along the X-axis and the Error Count along the Y-axis. The legends representing the graph are protocol types.

Chart	Description
Chart Formula	The formula used to derive the graphs is: the count of 4xx errors in each protocol, for the specified time interval.
Chart Filters	This chart uses Time Range (Last 60 Minutes, Last 24 Hours, and Last 7 days), Delivery Server Group, Delivery Server, Provider, and Delivery Service as filters.

Content

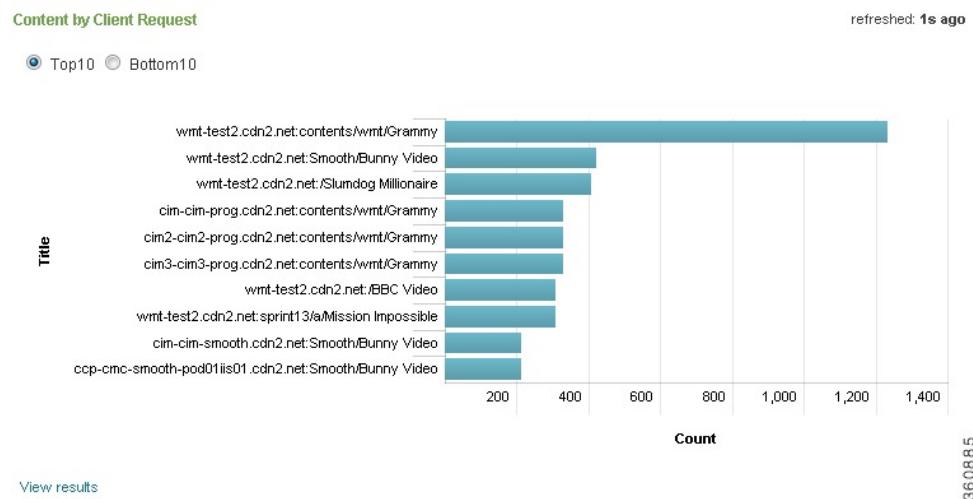
This tab displays charts that provides an overview of the top content, based on different dimensions such as content by client request, bytes transferred, and average ABR session bitrate. By default, the data for the previous day is displayed in the scorecard.

To access this tab, click **Home > Content**.

The following metrics are displayed here:

- Content by Client Request
- Content by Bytes Transferred
- Average ABR Session Bitrate by Content
- Top Content by Delivery Server
- Top Content by City
- Top Content by Client Type

Content by Client Request



Content by Bytes Transferred

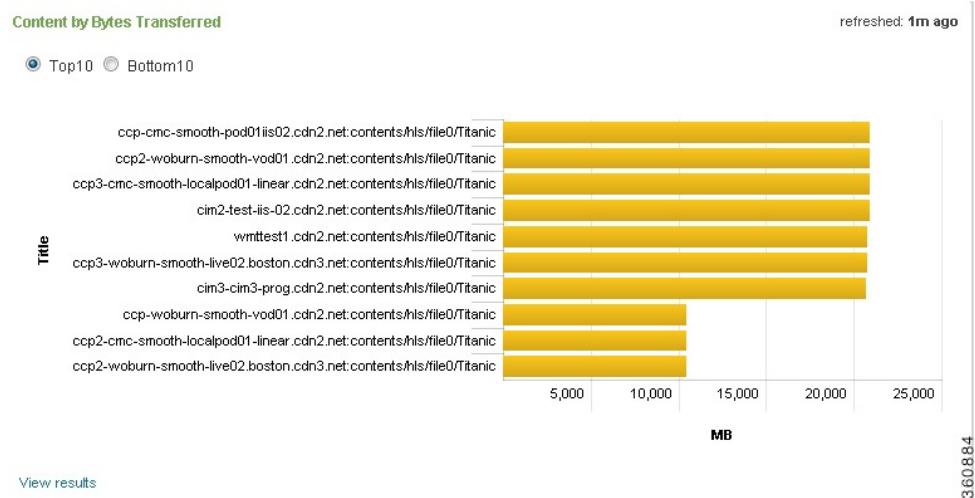
The following table describes the chart within this scorecard:

Table 28: Content by Client Request Chart & Description

Chart	Description
Content by Client Request	Illustrates the most/least popular content, based on the number of client requests received.
Chart Information	The information within this chart is shown in a bar graph with Count along the X-axis and Title along the Y-axis.
Chart Formula	The formula used to derive the graph is the most/least viewed content titles by client session count, per day.
Chart Filters	This chart uses Time Range (Previous day and Last 7 days), Delivery Server Group, Delivery Server, Provider, Delivery Service, Resolution (HD and SD), and Genre as filters.

To view the top 10 content by client request and the bottom 10 content by client request, click the respective radio buttons located above the chart.

Content by Bytes Transferred



The following table describes the chart within this scorecard:

Table 29: Content by Bytes Transferred Chart & Description

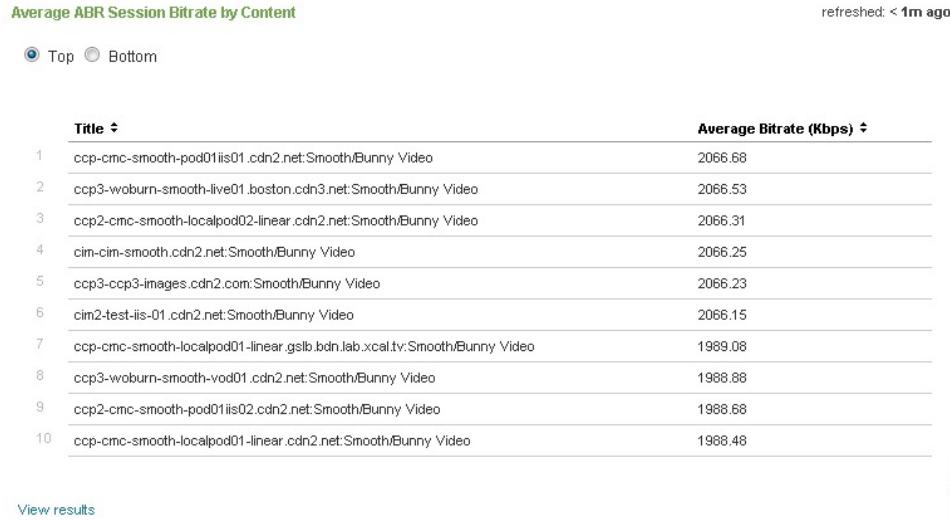
Chart	Description
Content by Bytes Transferred	Illustrates the most/least popular content, based on the download size.

Chart	Description
Chart Information	The information within this chart is shown in a bar graph as MB along the X-axis and Title along the Y-axis.
Chart Formula	The formula used to derive the graph is the most/least viewed content titles by bytes transferred to clients, per day.
Chart Filters	This chart uses Time Range (Previous day and Last 7 days), Delivery Server Group, Delivery Server, Provider, Delivery Service, Resolution (HD and SD), and Genre as filters.

**Note**

To view the top 10 content by bytes transferred and the bottom 10 content by bytes transferred, click the respective radio buttons located above the chart.

Average ABR Session Bitrate by Content



The following table describes the information in the tabular column:

Table 30: Average ABR Session Bitrate by Content Table & Description

Table	Description
Average ABR Session Bitrate by Content	Illustrates the content delivered with highest/lowest bitrate.

Table	Description
Table Information	The information within this table are Title and Average Bitrate.
Formula	The formula used is: the top/bottom content title by average bitrate.
Filters	This table uses Time Range (Previous day and Last 7 days), Delivery Server Group, Delivery Server, Provider, Delivery Service, Resolution (HD and SD), and Genre as filters.

**Note**

To view the top 10 average ABR session bitrate by content and the bottom 10 average ABR session bitrate by content, click the respective radio buttons located above the table.

Top Content by Delivery Server

Top Content by Delivery Server

refreshed: < 1m ago

	Delivery Server	Title	Count
1	bniboxciscose01	wmt-test2.cdn2.net:Smooth/Bunny Video	286

[View results](#)

360285

The following table describes the information in the tabular column:

Table 31: Top Content by Delivery Server Table & Description

Table	Description
Top Content by Delivery Server	Illustrates the most popular content served by each delivery server.
Table Information	The information within this table are Delivery Server, Title, and Count.
Formula	The formula used is: the top content title (based on count) by delivery server.

Table	Description
Filters	This table uses Time Range (Previous day and Last 7 days), Delivery Server Group, Delivery Server, Provider, Delivery Service, Resolution (HD and SD), and Genre as filters.

Top Content by City

Top Content by City

refreshed: < 1m ago

City	Title	Count
1 Addison	wmt-test2.cdn2.net:contents/wmt/Grammy	4
2 Alvordton	ccp-ccp-images.cdn2.com:/Slumdog Millionaire	2
3 Beijing	cim-cim-prog.cdn2.net:contents/wmt/Grammy	34
4 Hefei	wmt-test2.cdn2.net:contents/wmt/Grammy	110
5 Mountain View	cim-cim-prog.cdn2.net:contents/wmt/Grammy	36
6 Waldron	wmt-test2.cdn2.net:contents/wmt/Grammy	116

[View results](#)

260282

The following table describes the information in the tabular column:

Table 32: Top Content by City Table & Description

Table	Description
Top Content by City	Illustrates the most popular content viewed in a city.
Table Information	The information within this table are City, Title, and Count.
Formula	The formula used is: the top content title (based on count) by city.
Filters	This table uses Time Range (Previous day and Last 7 days), Delivery Server Group, Delivery Server, Provider, Delivery Service, Resolution (HD and SD), and Genre as filters.

To view the list of viewers accessing ISP and Net Speed network, click the respective radio buttons located above the chart.

**Note**

The city will be resolved only for public IPs. IPs which cannot be resolved by MaxMind will not be displayed.

Top Content by Client Type

Top Content by Client Type			refreshed: < 1m ago
Client Type	Title	Count	
1 NSPlayer/12.0.7600.16385	wmt-test2.cdn2.net:contents/wmt/Grammy	617	
2 NSPlayer/12.0.7600.16385 WMFSDK/12.0	wmt-test2.cdn2.net:contents/wmt/Grammy	616	
3 Mozilla/4.0	wmt-test2.cdn2.net:Smooth/Bunny Video	420	
4 WMFSDK/12.0.7600.16385_WMPPlayer/12.0.7600.16667	wmt-test2.cdn2.net:BBC Video	309	
5 MAC 8.0.246.0	cop2-cop2-images.cdn2.com:/Slumdog Millionaire	206	
6 WIN 11.2.202.235	cop2-cmc-smooth-pod01is01.cdn2.net:/Slumdog Millionaire	206	
7 Apple Mac OS X v10.6.7 CoreMedia v1.0.0.10J869	cop2-woburn-smooth-vod01.cdn2.net:contents/hls/file0/Titanic	165	
8 IE7.0	cop2-woburn-smooth-live02.boston.cdn3.net:Smooth/Bunny Video	165	
9 VLC/1.0.1_LibVLC/1.0.1	cop2-woburn-smooth-vod01.cdn2.net:contents/hls/file0/Titanic	165	

[View results](#)360640
360693

The following table describes the information in the tabular column:

Table 33: Top Content by Client Type Table & Description

Table	Description
Top Content by Client Type	Illustrates the most popular content viewed in each client (players and browsers that is used to request the content).
Table Information	The information within this table are Client Type, Title, and Count.
Formula	The formula used is: the top content title (based on count) by client type.
Filters	This table uses Time Range (Previous day and Last 7 days), Delivery Server Group, Delivery Server, Provider, Delivery Service, Resolution (HD and SD), and Genre as filters.

Viewers

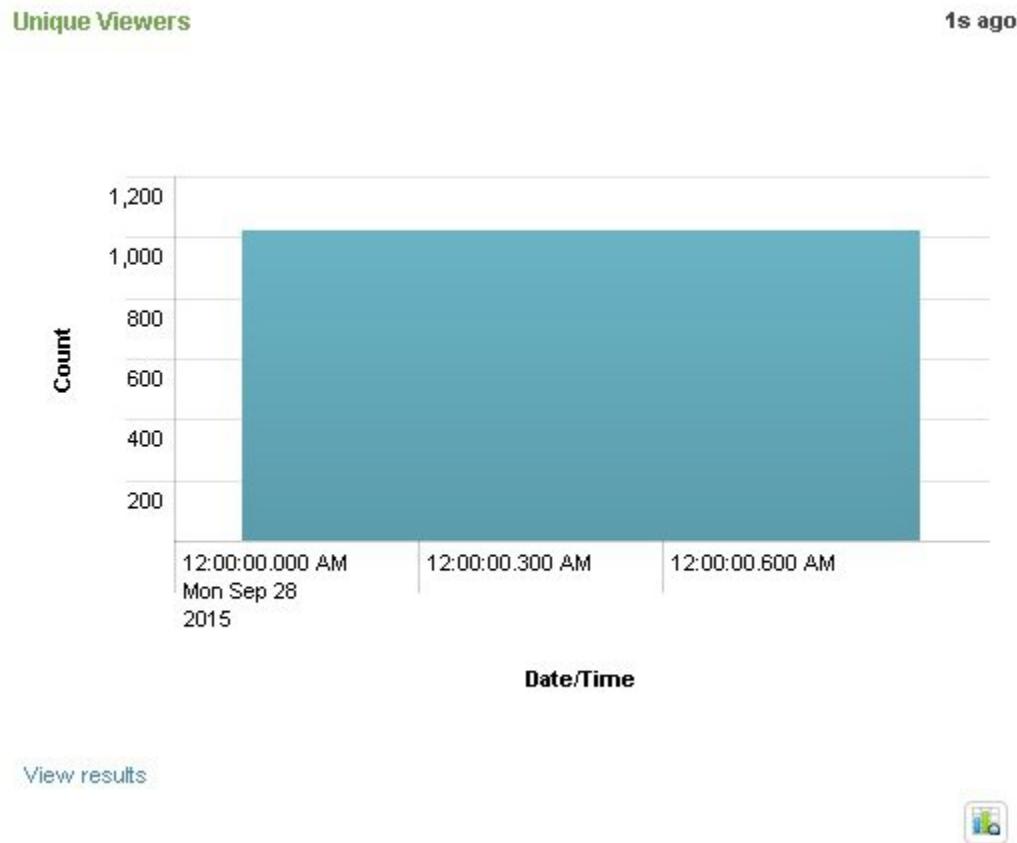
This tab displays charts that explains the viewer density, based on different parameters such as city, ISP, Net speed, session duration, and download size. By default, the data for the previous day is displayed in the scorecard.

To access this tab, choose **Home > Viewers**.

The following metrics are displayed here:

- Unique Viewers
- Viewers by Client Type
- Viewers by City
- Viewers by ISP and Net Speed
- Viewers by Download Size
- Viewers by Session Duration

Unique Viewers



The following table describes the chart within this scorecard:

Table 34: Unique Viewers Chart & Description

Table	Description
Unique Viewers	Illustrates the number of unique viewers per day.

Table	Description
Chart Information	The information within this chart is shown in a column graph with the Date/Time along the X-axis and the unique viewer Count along the Y-axis.
Formula	The formula used to derive the graph is the total unique viewer, per day.
Filters	This chart uses Time Range (Previous Day and Last 7 Days), Delivery Server Group, Delivery Server, Provider, Delivery Service, and Media Format as filters.

Viewers by Client Type

Viewers by Client Type

3m ago

« prev 1 2 next »

Client Type	Count
Apple Mac OS X	468
Internet Explorer	470
Flash Player 8 for MAC OS X	350
Mozilla FireFox	497
Windows Media Player 10	918
NetShow Media Player	425
VLC Media Player	424
Windows Media Player 11	960
Windows Media Player 12	750
Win Amp	473

« prev 1 2 next »

[View results](#)



The following table describes the information in the tabular column:

Table 35: Viewers by Client Type Table & Description

Table	Description
Viewers by Client Type	Illustrates the number of viewers accessing the network through each client.
Table Information	The information within this table are Client Type and Count.
Formula	The formula used is: unique viewer by client type and request count.
Filters	This table uses Time Range (Previous Day and Last 7 Days), Delivery Server Group, Delivery Server, Provider, Delivery Service, and Media Format as filters.

Viewers by City

[Viewers by City](#) 3m ago

	City	Count
1	Hefei	255
2	Mountain View	255
3	Shenzhen	255
4	Hudson	128
5	Waldron	127

[View results](#)



The following table describes the information in the tabular column:

Table 36: Viewers by City Table & Description

Table	Description
Viewers by City	Illustrates the number of viewers accessing the network in each city.
Table Information	The information within this table are City and Count. Note Viewers by city count appears in descending order of views.

Table	Description
Formula	The formula used is: the number of unique viewers in each city.
Filters	This table uses Time Range (Previous Day and Last 7 Days), Delivery Server Group, Delivery Server, Provider, Delivery Service, and Media Format as filters.



Note The city will be resolved only for public IPs. IPs which cannot be resolved by MaxMind will not be displayed.

Viewers by ISP and Net Speed



[View results](#)



The following table describes the information in the tabular column:

Table 37: Viewers by ISP and Net Speed Table & Description

Table	Description
Viewers by ISP and Net Speed	Illustrates the number of viewers accessing the network, grouped by Internet Service Provider (ISP) or Net Speed.

Table	Description
Table Information	The information within this table are ISP or Net Speed and Count. Note The ISP and Net Speed count appear in descending order of views.
Formula	The formula used is: the number of unique viewers grouped by client ISP or Net Speed.
Filters	This table uses Time Range (Previous Day and Last 7 Days), Delivery Server Group, Delivery Server, Provider, Delivery Service, and Media Format as filters.

To view the list of viewers accessing ISP and Net Speed network, click the respective radio buttons located above the table.



Note Other than public IPs, "unknown" value will be displayed.

Viewers by Download Size

Viewers by Download Size

4m ago

	Download Size	Count
1	< 50MB	193
2	50MB - 100MB	269
3	100MB - 500MB	417
4	500MB - 1GB	136
5	1GB - 2GB	5

[View results](#)

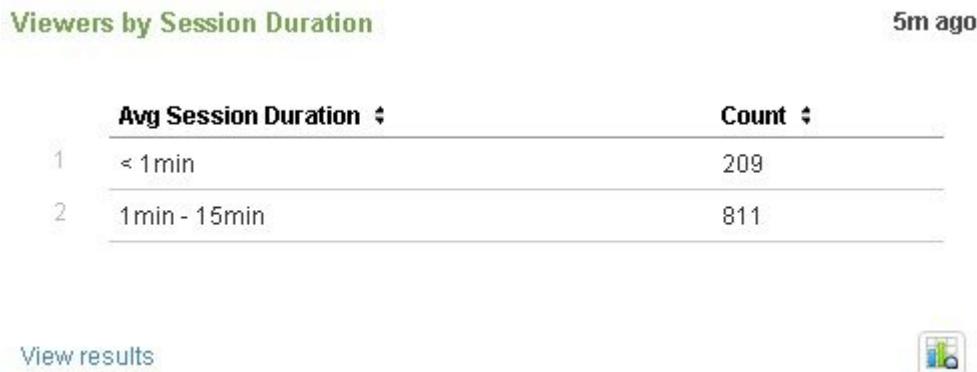


The following table describes the information in the tabular column:

Table 38: Viewers by Download Size Table & Description

Table	Description
Viewers by Download Size	Illustrates the number of viewers, based on the download size.
Table Information	The information within this table are Download Size and Count.
Formula	The formula used is: the number of viewers bucketed by the download size in MB.
Filters	This table uses Time Range (Previous Day and Last 7 Days), Delivery Server Group, Delivery Server, Provider, Delivery Service, and Media Format as filters.

Viewers by Session Duration



The following table describes the information in the tabular column:

Table 39: Viewers by Session Duration Table & Description

Table	Description
Viewers by Session Duration	Illustrates the number of viewers, based on session duration.
Table Information	The information within this table are Average Session Duration (minutes) and Count.
Formula	The formula used is: the number of unique viewers bucketed by the average session duration.

Table	Description
Filters	This table uses Time Range (Previous Day and Last 7 Days), Delivery Server Group, Delivery Server, Provider, Delivery Service, and Media Format as filters.

Content Origin

In VDS-IS, the ingest transaction logs are used to log details of every request sent to the upstream SEs and origin servers. The Content Origin scorecard contains the metrics derived from the ingest transaction logs. These metrics provide insights into the interactions between Content Acquirers and Origin Servers.

To access this tab, click **Home > Content Origin**.

The following metrics are displayed here:

- Ingest Requests
- Origin/Ingest Volume
- Bytes Read by Protocol
- Download Speed
- Ingest Response Codes
- Origin Server Failures

Enabling Ingest Transaction Log

Content Origin charts will be displayed only when the Ingest transaction log is forwarded from VDS-IS to VDS-SM. To enable and export Ingest transaction log, perform the following steps:



Note

You can perform the below steps only if you have installed VDS-IS version that supports Ingest log functionality.

Step 1

Login to the CDSM UI.

Step 2

Click **Devices** and select the required Service Engine.

Step 3

In the right pane, choose **Service Control > Transaction Logging**.

Step 4

From Monitors table, check the **WMT Ingest** and **Web Engine Ingest** check box.

Step 5

Click **Submit**.

Ingest Requests

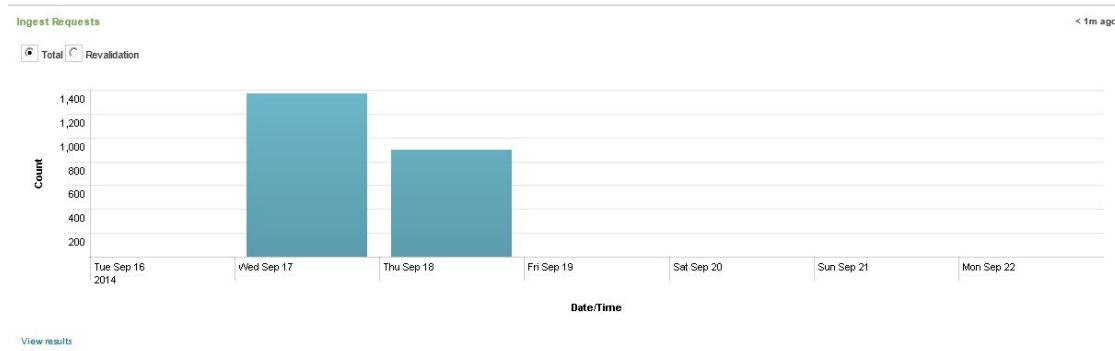


Table 40: Ingest Requests Chart & Description

Chart	Description
Ingest Requests	Illustrates the total number of requests (cache miss and revalidation) sent to origin server(s), for the specified time interval..
Chart Information	The information within this chart is shown in a column graph with Date/Time along the X-axis and ingest request Count along the Y-axis.
Formula	The formula used to derive the graph is: Count of ingest requests from the content acquirer for the given time frame.
Chart Filters	This chart uses Time Range, Origin Server, and Content Acquirer as filters.



Note

Revalidation-Request field is not applicable to WMT ingest logs.

Origin/Ingest Volume

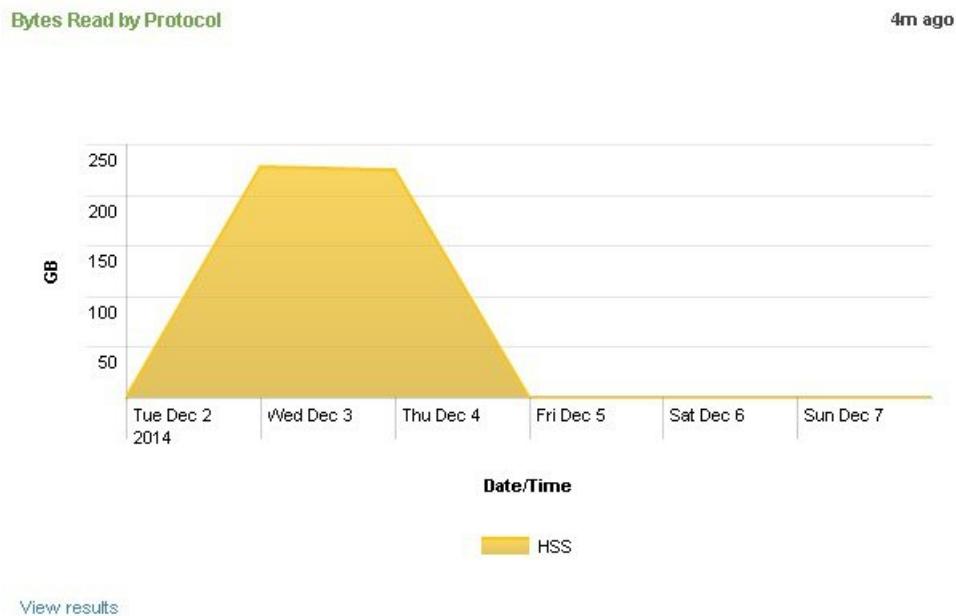


The following table describes the chart within this scorecard:

Table 41: Origin/Ingest Volume Chart & Description

Chart	Description
Origin/Ingest Volume	Illustrates the comparison between Origin and Edge Volume, for the specified time interval. Origin Volume is the bytes read from the Origin Server(s).
Chart Information	The information within this chart is a line graph with Date/Time along the X-axis and the Origin and Edge Volume in GB along the Y-axis.
Chart Formula	The formulae used to derive the graph are: Origin—Total bytes read from Origin Server(s). Edge—Total bytes delivered from edge SEs.
Chart Filters	This chart uses Time Range, Origin Server, and Content Acquirer as filters. Note The Edge is unaffected by Origin Server and Content Acquirer filters.

Bytes Read by Protocol



The following table describes the chart within this dashlet:

Table 42: Bytes Read by Protocol Chart & Description

Chart	Description
Bytes Read by Protocol	Illustrates the total bytes read from Origin Server(s) by traffic type, for the specified time interval.
Chart Information	The information within this chart is shown in a stacked area graph with Date/Time along the X-axis and bytes read in GB along the Y-axis. The legends representing the graph are protocols.
Formula	The formula used to derive the graph is: Total bytes read from Origin Server(s) split by traffic type.
Chart Filters	This chart uses Time Range, Origin Server, and Content Acquirer as filters.

Download Speed

Download Speed		1s ago
	Download Speed (MB/s) ▾	Count ▾
1	< 100MB/s	1
2	250MB/s - 500MB/s	6
3	500MB/s - 1GB/s	4

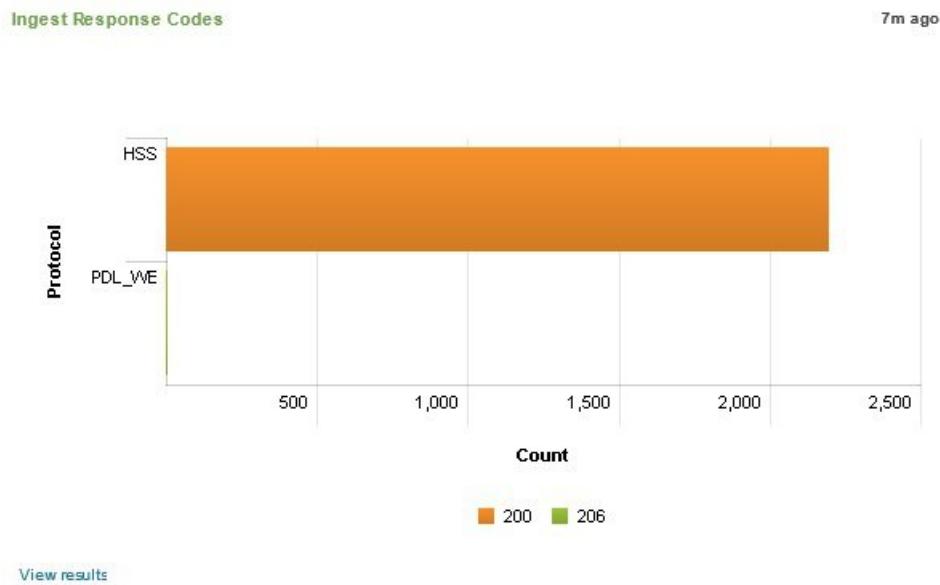
[View results](#)

The following table describes the information in the tabular column:

Table 43: Download Speed Table & Description

Table	Description
Download Speed	Illustrates the number of data ingest based on the download speed, for the specified time interval.
Table Information	The information within this table are Download Speed (MB/s) and Count.
Formula	The formula used is: Number of ingest based on the download speed.
Filters	This table uses Time Range, Origin Server, and Content Acquirer as filters.

Ingest Response Codes

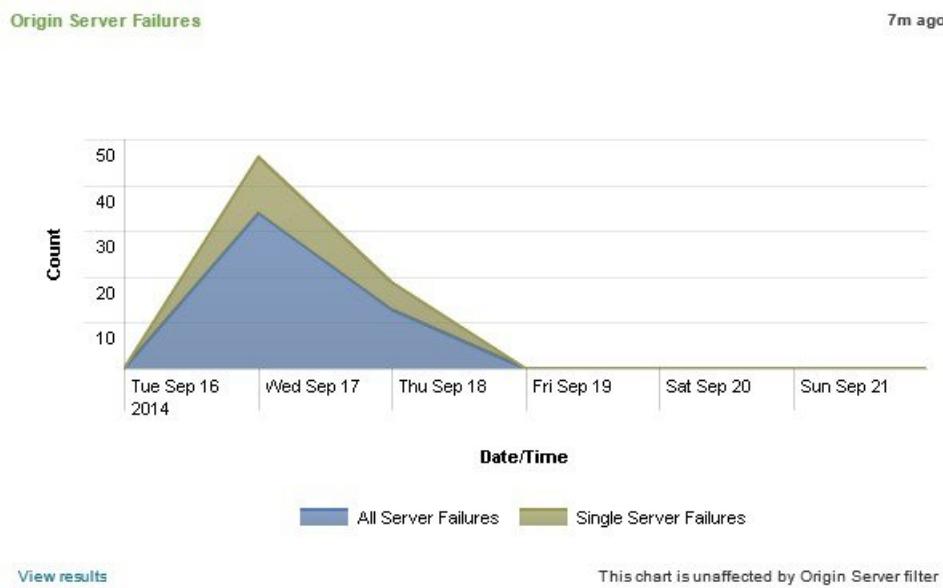


The following table describes the chart within this dashlet:

Table 44: Ingest Response Codes Chart & Description

Chart	Description
Ingest Response Codes	Illustrates the ingest response by status codes, for the specified time interval.
Chart Information	The information within this chart is shown in a bar graph with Count along the X-axis and Protocol type along the Y-axis. The legends representing the graph are status codes.
Formula	The formula used to derive the graph is: Count of ingest requests by status codes and protocol.
Chart Filters	This chart uses Time Range, Origin Server, and Content Acquirer as filters.

Origin Server Failures



The following table describes the chart within this dashlet:

Table 45: Origin Server Failures Chart & Description

Chart	Description
Origin Server Failures	Illustrates the count of ingest requests that failed due to single server and all server failure, for the specified time interval.
Chart Information	The information within this chart is shown in a stacked area graph with Date/Time along the X-axis and Count of all server and single server failures along the Y-axis. The legends representing the graph are All Server Failures and Single Server Failures.
Formula	The formulae used to derive the graph are: Single Server Failures—Count of Server Failures encountered while processing ingest requests. All Server Failures—Origin Server(s) with backup server(s) - All Origin Servers(s) failed.
Chart Filters	This chart uses Time Range, and Content Acquirer as filters. Note This chart is unaffected by Origin Server filter.

**Note**

FailoverAction field is not applicable to WMT ingest logs.

Customizing Home Scorecards

To customize the wholesale users from viewing the metrics of Network, Protocol, Content, and Viewers scorecards, follow these steps:

Step 1 Log in to the Search Head node using the following credentials:

User name: bnisplunk

Password: password

Step 2 Navigate to the following location:

/opt/splunk/etc/apps/CDNAalytics/local/data/ui/views/

Step 3 Open the **dashboard_network_resellercp.xml**, **dashboard_protocol_resellercp.xml**, **dashboard_content_resellercp.xml** or **dashboard_viewers_resellercp.xml** file.

- 1 The "**dashboard_network_resellercp.xml**" file contains .xml representation with individual module for each chart of the Network scorecard.
- 2 The "**dashboard_protocol_resellercp.xml**" file contains .xml representation with individual module for each chart of the Protocol scorecard.
- 3 The "**dashboard_content_resellercp.xml**" file contains .xml representation with individual module for each chart of the Content scorecard.
- 4 The "**dashboard_viewers_resellercp.xml**" file contains .xml representation with individual module for each chart of the Viewers scorecard.

Step 4 Comment/delete the entire module that you want to remove from the scorecard.

Note We do not recommend to delete the module from the file.

Step 5 Save the file.



Analytics

- [Analytics Overview, page 79](#)

Analytics Overview

This section provides an overview of the VDS-SM Analytics, which provides the ability to view and analyze data that are collected about trends, reports, content, and sessions in textual and graphical form.

Data is pushed from various streaming devices to the Splunk Universal Forwarder, and then to the VDS-SM. The data available is used to provide a multitude of historical search capabilities. Data is gathered using predefined indexing metrics, designed to provide data that is monitored by service provider operators. The data output is viewed in the form of a dashlet.

Analyze Metrics with Pivoting

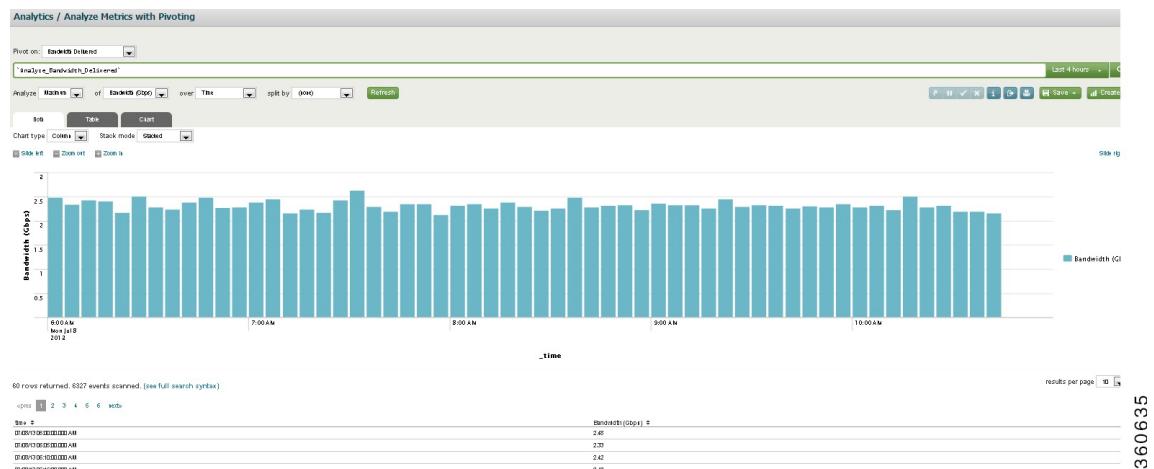
This feature allows the CDN Operators to analyze the data at a granular level. The difference between the Analyze data option on individual charts and generic pivoting is that, in pivoting, you need to select an category to start the analysis. You can analyze the data for the following:

- Bandwidth Delivered
- Cache Efficiency
- Concurrent Active Sessions
- GigaBytes Delivered
- Requests
- Response Codes
- Storage Usage
- Viewers

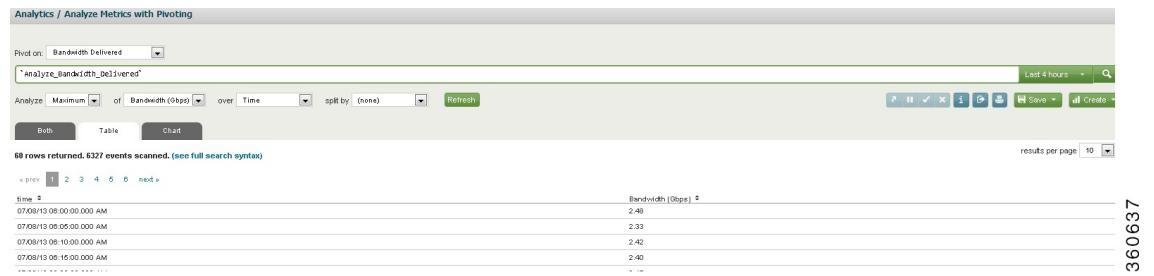
You can view the data in the following ways:

- On clicking the **Both** tab, the data will be displayed, in a tabular column and chart.

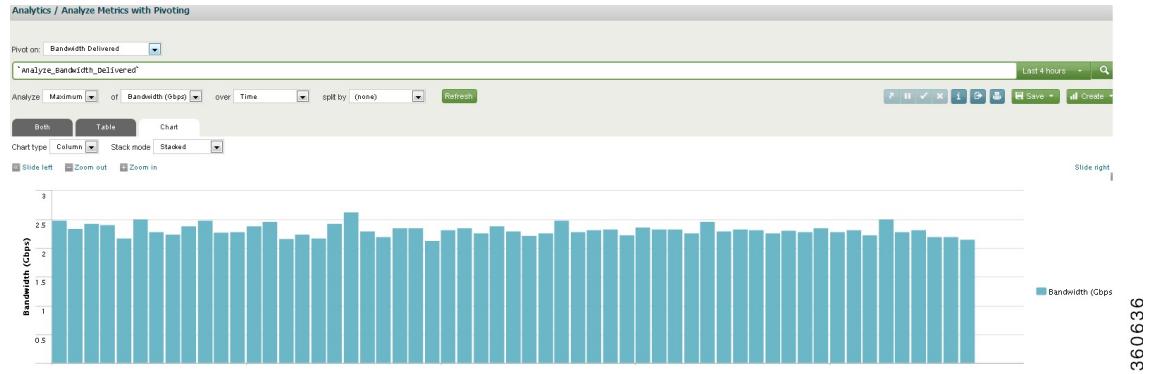
Analyze Metrics with Pivoting



- On clicking the **Table** tab, the data will be displayed in a tabular column.



- On clicking the **Chart** tab, the data will be displayed in a chart/graph.



You can view the same data in different charts and stack modes. For this, click the **Chart type** and **Stack mode** drop-down lists respectively, and choose the required chart and stack mode. The different chart types are column, bar, line, area, and pie. The different types of stack modes are stacked, none, and 100% stacked.



Note When you choose an option other than Time in the **over** drop-down list and choose none in the **split by** drop-down list, additional drop-down lists such as top/bottom and the number of results to be plotted are displayed.

**Note**

We have assumed that the users are aware of selecting the relevant dimensions in both the drop-down lists to view the desired result.

To access this feature, perform the following steps:

Step 1 Choose **Analytics > Analyze Metrics with Pivoting**.

Step 2 From the **Pivot on:** drop-down list, choose the category for which you need to analyze the data.

Step 3 From the **Analyze, of, over, and split by** drop-down lists, choose the required options.

Note Make sure that you choose different options from **over** and **split by** drop-down lists.

Trends

This feature allows you to view the historical data (older than 7 days), in graph and tabular column. VDS-SM Analytics gather historical data from different perspectives, such as the following:

- Network
- Streaming
- Viewers
- Content
- Content Origin
- Billing

When you click each of these categories, the respective subcategories are expanded. On further expanding the subcategories, the respective dashlets are listed.

When each of these dashlets are selected, the corresponding charts and data (in a tabular column) are displayed on the right pane. When you click **View results** option below the charts, the log information corresponding to the dashlet is displayed.

**Note**

In the search field, which is located in the left pane, enter the dashlet name or part of the dashlet name as a search string. This will display the receptive dashlet names.

Network

Network trends dashboard provides historical information on volume, caching, request, and response of the managed CDN network.

To access this feature, perform the following:

1. From the main page, choose **Analytics > Trends**.

2. From the tree view, which appears in the left pane, select **Network**.

The following subcategories are displayed in Network:

- Volume
- Caching
- Request
- Response

Volume

This category includes data and charts for Throughput, Volume of Data Delivered, Delivery Services by Bytes Delivered, Origin/Ingest Volume, Average Download Speed, and Predict Throughput.

Throughput

For details, see [Throughput , on page 31](#)



Note

This chart is available to the Wholesale users and CDN Operators.

Volume of Data Delivered

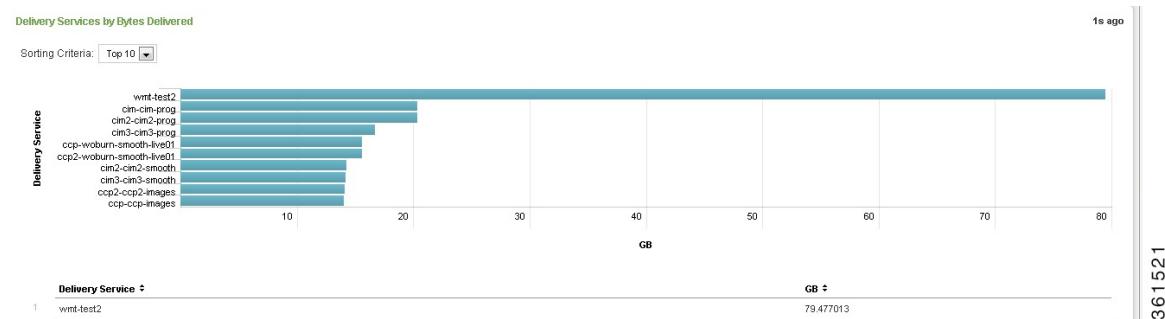
For details, see [Volume Delivered by Protocol , on page 49](#)



Note

This chart is available to the Wholesale users and CDN Operators.

Delivery Services by Bytes Delivered



The following table describes the chart within this dashlet:

Table 46: Delivery Services by Bytes Delivered Chart & Description

Chart	Description
Delivery Services by Bytes Delivered	Illustrates the top delivery services, based on the volume of content delivered, for the specified time interval.

361521

Chart	Description
Chart Information	The information within this chart is a bar graph with the bytes delivered in GB along the X-axis and Delivery Service along the Y-axis.
Formula	The formula used to derive the graph is: Top 'n' delivery services by total bytes delivered.
Chart Filters	This chart uses Delivery Server Group, Delivery Server, Provider, Delivery Service, and the Time Range Picker as filters.
Availability	This chart is available only to the CDN Operators.

You can also view the top delivery services, such as top 10 and top 20, by clicking the **Sorting Criteria** drop-down list.

Origin/Ingest Volume

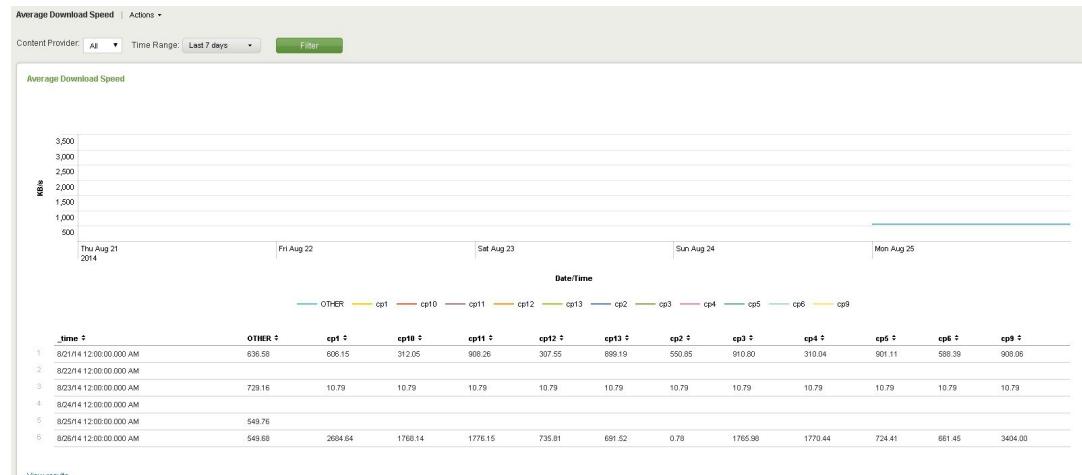
For details, see [Origin/Ingest Volume, on page 73](#)



Note

This chart is available only to the CDN Operators.

Average Download Speed



363994



Note

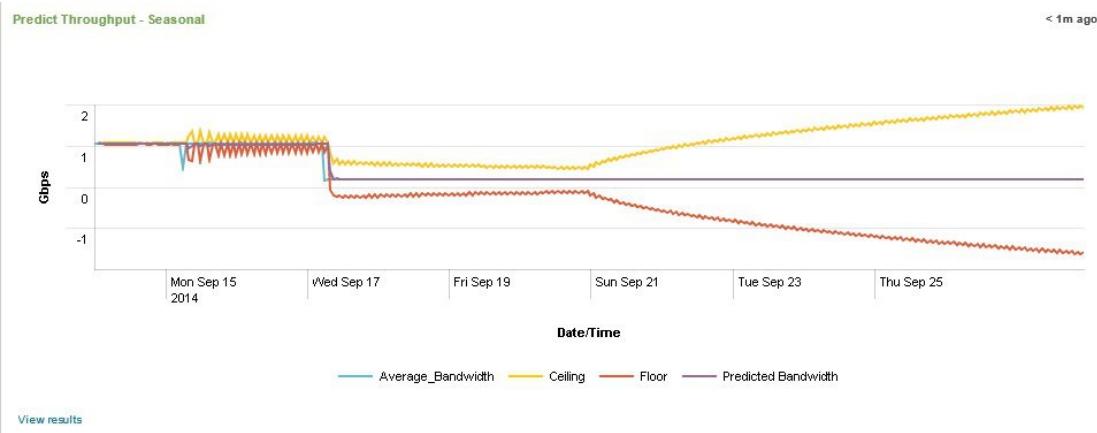
To enable Content Download Speed report set the **contentDownloadSpeedReportEnabled** option in indexsetting stanza to true in the **common.conf** file present in **/opt/splunk/etc/apps/appnormalize/bin** folder.

The following table describes the chart within this dashlet:

Table 47: Average Download Speed Chart & Description

Chart	Description
Average Download Speed	Illustrates the average download speed of the content providers, for the specified time interval.
Chart Information	The information within this chart is a line graph with Date/Time along the X-axis and average download speed in KB/s along the Y-axis. The legends representing the graph are Content Providers.
Formula	<p>The formula used to calculate average download speed is:</p> <ol style="list-style-type: none"> 1 Dividing total bytes delivered by total time to serve. 2 Drop the lowest 15% of the download speeds and then calculate the average per Content Provider.
Chart Filters	This chart uses Content Provider, and Time Range Picker as filters.
Availability	This chart is available only to the CDN Operators.

Predict Throughput

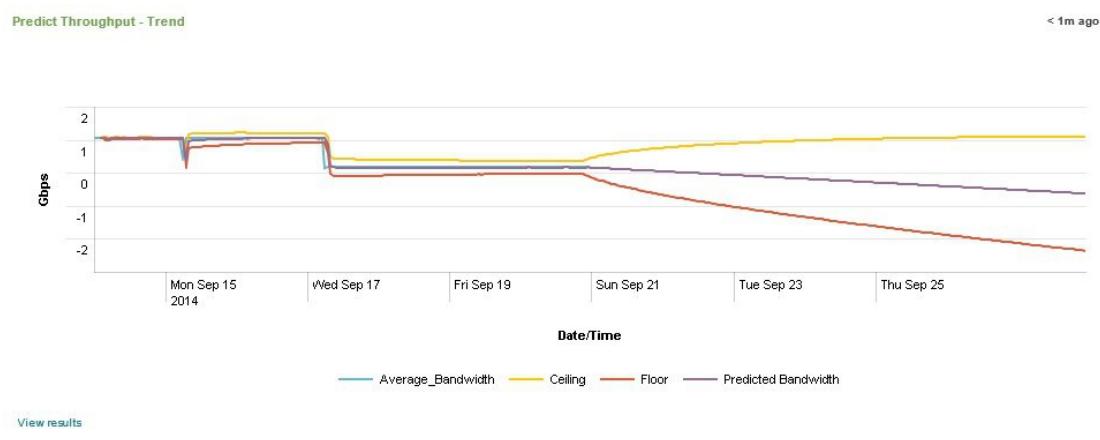


The following table describes Predict Throughput - Seasonal chart within this dashlet:

Table 48: Predict Throughput - Seasonal Chart & Description

Chart	Description
Predict Throughput - Seasonal	Illustrates the predicted bandwidth of the network using the seasonal approach, for the specified time interval.

Chart	Description
Chart Information	The information within this chart is a line graph with Date/Time along the X-axis and bandwidth in Gbps along the Y-axis. The legends representing the graph are Average Bandwidth, Ceiling, Floor, and Predicted Bandwidth.
Formula	The formula used to derive the graph is: Take a series of throughput numbers observed over time and then apply Seasonal Local Level forecasting algorithm on these previous throughput numbers.
Chart Filter	This chart uses Time Range Picker as filter.
Availability	This chart is available only to the CDN Operators.



The following table describes Predict Throughput - Trend chart within this dashlet:

Table 49: Predict Throughput - Trend Chart & Description

Chart	Description
Predict Throughput - Trend	Illustrates the predicted bandwidth of the network by trend approach, for the specified time interval.
Chart Information	The information within this chart is a line graph with Date/Time along the X-axis and bandwidth in Gbps along the Y-axis. The legends representing the graph are Average Bandwidth, Ceiling, Floor, and Predicted Bandwidth.
Formula	The formula used to derive the graph is: Take a series of throughput numbers observed over time and then apply Local Level Trend forecasting algorithm on these previous throughput numbers.
Chart Filter	This chart uses Time Range Picker as filter.

Chart	Description
Availability	This chart is available only to the CDN Operators.

Caching

This category includes the data and charts for Cache Hit and Miss Rate by Request Count, % Cache Hit and Miss, Storage Usage, and Cache Hit Ratio by Protocol.

Cache Hit and Miss Rate by Request Count

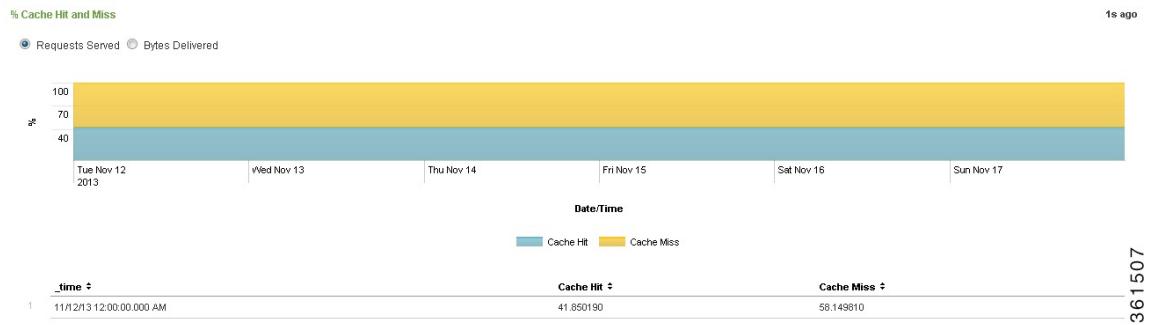


The following table describes the chart within this dashlet:

Table 50: Cache Hit and Miss Rate by Request Count Chart & Description

Chart	Description
Cache Hit and Miss Rate by Request Count	Illustrates the rate of cache hit and miss, for the specified time interval.
Chart Information	The information within this chart is a line graph with Date/Time along the X-axis and Requests per Second along the Y-axis. The legends are Cache Hit and Cache Miss.
Formula	The formula used to derive the graph is: the rate of cache hit and cache miss requests per second.
Chart Filters	This chart uses Delivery Server Group, Delivery Server, Provider, Delivery Service, and the Time Range Picker as filters.
Availability	This chart is available to the Wholesale users and CDN Operators.

% Cache Hit and Miss



The following table describes the chart within this dashlet:

Table 51: % Cache Hit and Miss Chart & Description

Chart	Description
% Cache Hit and Miss	Illustrates the percentage of cache hits and cache miss, based on the number of requests served and total bytes delivered, for the specified time interval.
Chart Information	The information within this chart is a stacked area graph with Date/Time along the X-axis and Cache Hit and Cache Miss percentage along the Y-axis. The legends are Cache Hit and Cache Miss.
Formula	The formula used to derive the requests served graph is: percentage of cache hit and cache miss over total requests. The formula used to derive the bytes delivered graph is: percentage of cache hit bytes and cache miss bytes over total bytes delivered.
Chart Filters	This chart uses Delivery Server Group, Delivery Server, Provider, Delivery Service, and the Time Range Picker as filters.
Availability	This chart is available to the Wholesale users and CDN Operators.

You can view the request served and bytes delivered by clicking the respective radio buttons.

Storage Usage

For details, see [Storage Usage, on page 47](#)



Note

This chart is available only to the CDN Operators.

Cache Hit Ratio by Protocol

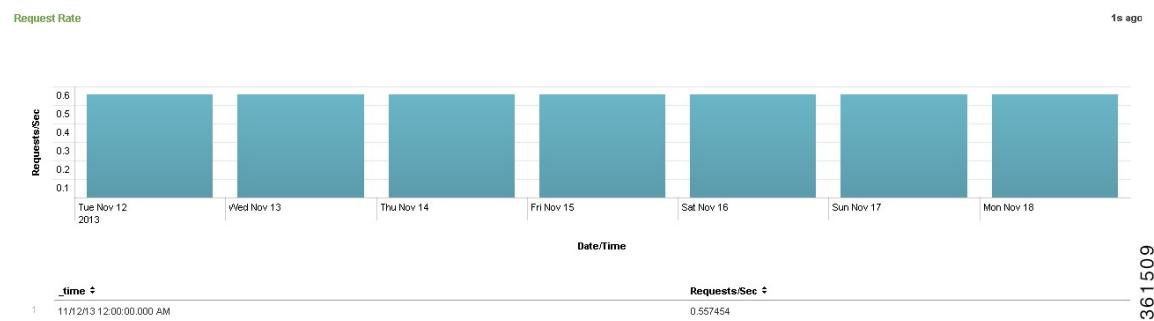
For details, see [Cache Hit Ratio by Protocol, on page 56](#)

**Note**

This chart is available only to the CDN Operators.

Request

This category includes data and charts for Request Rate, Total Requests and Errors, and Top Delivery Services by Request Count.

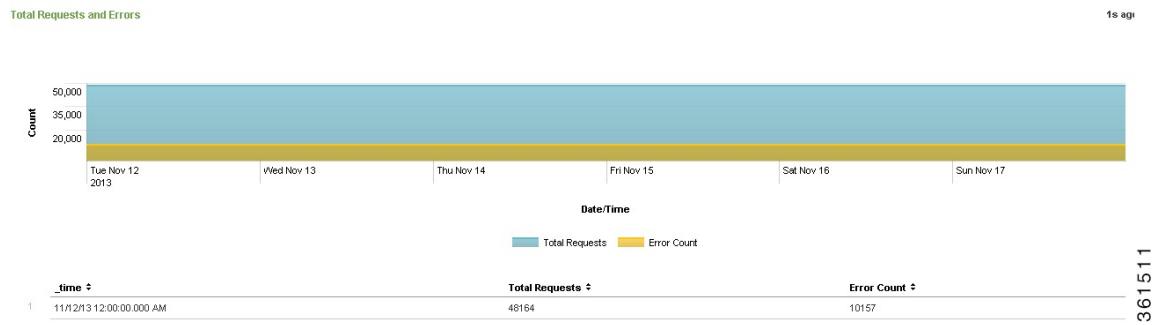
Request Rate

The following table describes the chart within this dashlet:

Table 52: Request Rate Chart & Description

Chart	Description
Request Rate	Illustrates the number of requests per second, for the specified time interval.
Chart Information	The information within this chart is a column graph with Date/Time along the X-axis and Requests per Second along the Y-axis.
Formula	The formula used to derive the graph is: the number of requests per second.
Chart Filters	This chart uses Delivery Server Group, Delivery Server, Provider, Delivery Service, and the Time Range Picker as filters.
Availability	This chart is available to the Wholesale users and CDN Operators.

Total Requests and Errors

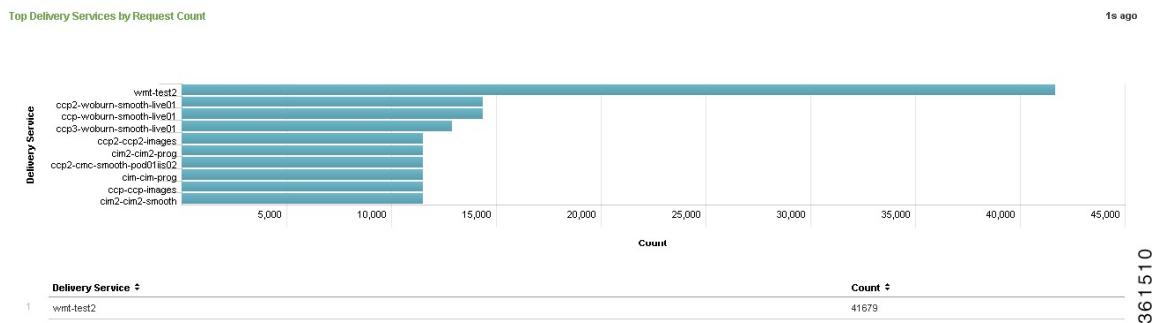


The following table describes the chart within this dashlet:

Table 53: Total Requests and Errors Chart & Description

Chart	Description
Total Requests and Errors	Illustrates the total requests and the number of errors from the total requests, for the specified time interval.
Chart Information	The information within this chart is an area graph with Date/Time along the X-axis and the requests/error Count along the Y-axis. The legends are Total Requests and Error Count.
Formula	The formula used to derive the graph is: the total number of requests and errors (requests with status codes 4xx or 5xx).
Chart Filters	This chart uses Delivery Server Group, Delivery Server, Provider, Delivery Service, and the Time Range Picker as filters.
Availability	This chart is available to the Wholesale users and CDN Operators.

Top Delivery Services by Request Count



The following table describes the chart within this dashlet:

Table 54: Top Delivery Services by Request Count Chart & Description

Chart	Description
Top Delivery Services by Request Count	Illustrates the top delivery services by request count, for the specified time interval.
Chart Information	The information within this chart is a bar graph with request count along the X-axis and the top Delivery Services along the Y-axis.
Formula	The formula used to derive the graph is: the top 10 delivery services by the number of requests received by them.
Chart Filters	This chart uses Delivery Server Group, Delivery Server, Provider, Delivery Service, and the Time Range Picker as filters.
Availability	This chart is available only to the CDN Operators.

Response

This category includes data and charts for Response Count by Status Codes, Response Codes by Delivery Servers, Response Codes by Service Routers, Sorted Delivery Services by Client Errors on Delivery Servers, 4xx Error Rate on Delivery Servers, 4xx Error Rate on Service Routers, Total Rejections due to Quota Limits, 4xx Errors, Sorted Delivery Services by Client Errors on Service Routers, Response Codes by Protocol, and 4xx Errors by Protocol.

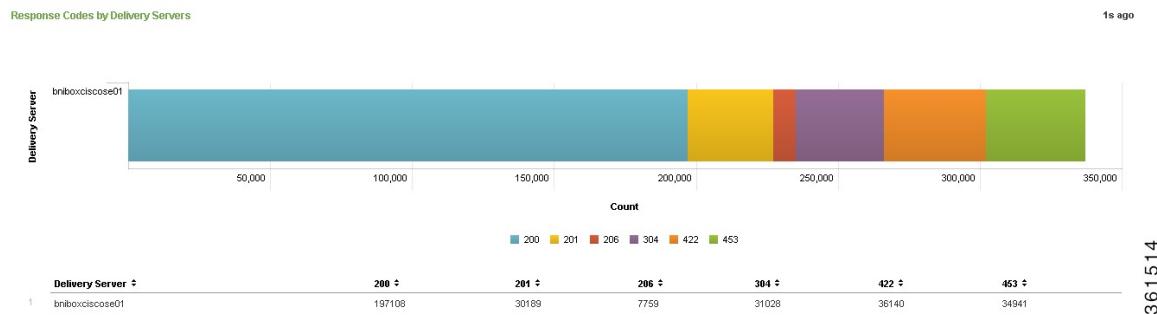
Response Count by Status Codes

For details, see [Response Status Codes, on page 42](#)



Note This chart is available only to the CDN Operators.

Response Codes by Delivery Servers

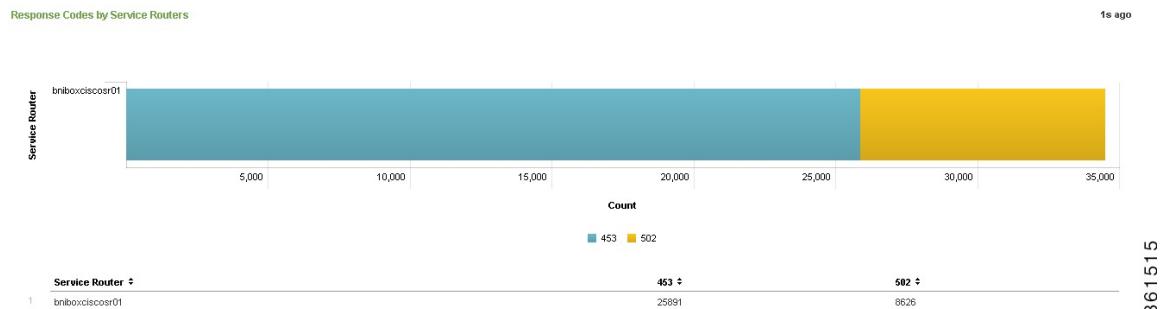


The following table describes the chart within this dashlet:

Table 55: Response Codes by Delivery Servers Chart & Description

Chart	Description
Response Codes by Delivery Servers	Illustrates the responses that are grouped by status codes (such as success, client error, and server error: status of a request), for a given delivery server.
Chart Information	The information within this chart is a stacked bar graph with response Count along the X-axis and the Delivery Server along the Y-axis. The legends are the status codes.
Formula	The formula used to derive the graph is: the number of responses grouped by the response codes for each delivery server.
Chart Filters	This chart uses Delivery Server Group, Delivery Server, Provider, Delivery Service, and the Time Range Picker as filters.
Availability	This chart is available only to the CDN Operators.

Response Codes by Service Routers



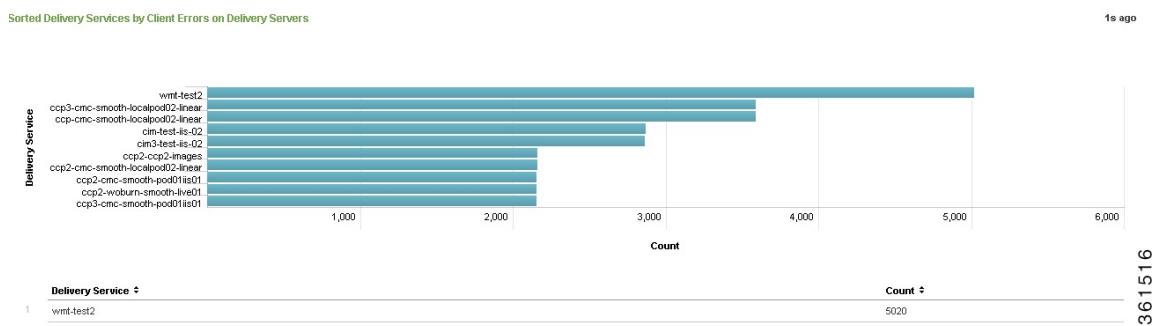
The following table describes the chart within this dashlet:

Table 56: Response Codes by Service Routers Chart & Description

Chart	Description
Response Codes by Service Routers	Illustrates the responses that are grouped by status codes (client and server errors), for a given service router, for the specified time interval.
Chart Information	The information within this chart is a stacked area graph with response code Count along the X-axis and Service Router along the Y-axis.
Formula	The formula used to derive the graph is: the number of responses grouped by the response codes for each service router.

Chart	Description
Chart Filters	This chart uses Service Router, Provider, Delivery Service, and the Time Range Picker as filters.
Availability	This chart is available only to the CDN Operators.

Sorted Delivery Services by Client Errors on Delivery Servers



The following table describes the chart within this dashlet:

Table 57: Sorted Delivery Services by Client Errors on Delivery Servers Chart & Description

Chart	Description
Sorted Delivery Services by Client Errors on Delivery Servers	Illustrates the top 10 delivery services by client errors.
Chart Information	The information within this chart is a bar graph with error Count along the X-axis and Delivery Service along the Y-axis.
Formula	The formula used to derive the graph is: the top 10 delivery services by the number of 4xx errors.
Chart Filters	This chart uses Delivery Server Group, Delivery Server, Provider, Delivery Service, and the Time Range Picker as filters.
Availability	This chart is available only to the CDN Operators.

4xx Error Rate on Delivery Servers



The following table describes the chart within this dashlet:

Table 58: 4xx Error Rate on Delivery Servers Chart & Description

Chart	Description
4xx Error Rate on Delivery Servers	Illustrates the number of 4xx errors per second for each delivery server, for the specified time interval.
Chart Information	The information within this chart is a line graph with Date/Time along the X-axis and 4xx Errors/Second along the Y-axis. The legends are Delivery Servers.
Formula	The formula used to derive the graph is: the number of errors per second per day for each delivery server.
Chart Filters	This chart uses Delivery Server Group, Delivery Server, Provider, Delivery Service, and the Time Range Picker as filters.
Availability	This chart is available only to the CDN Operators.

4xx Error Rate on Service Routers

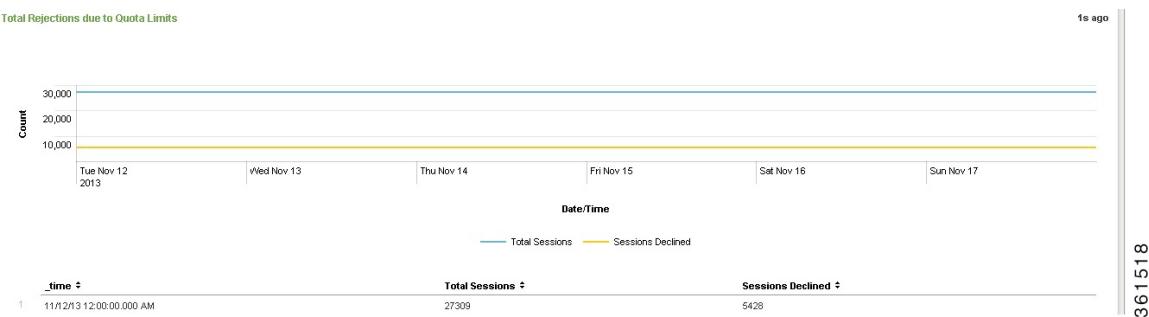


The following table describes the chart within this dashlet:

Table 59: 4xx Error Rate on Service Routers Chart & Description

Chart	Description
4xx Error Rate on Service Routers	Illustrates the number of 4xx errors per second for each service router, for the specified time interval.
Chart Information	The information within this chart is a line graph with Date/Time along the X-axis and Errors/Second along the Y-axis. The legends are Service Routers.
Formula	The formula used to derive the graph is: the number of errors per second for each service router.
Chart Filters	This chart uses Service Router, Provider, Delivery Service, and the Time Range Picker as filters.
Availability	This chart is available only to the CDN Operators.

Total Rejections due to Quota Limits



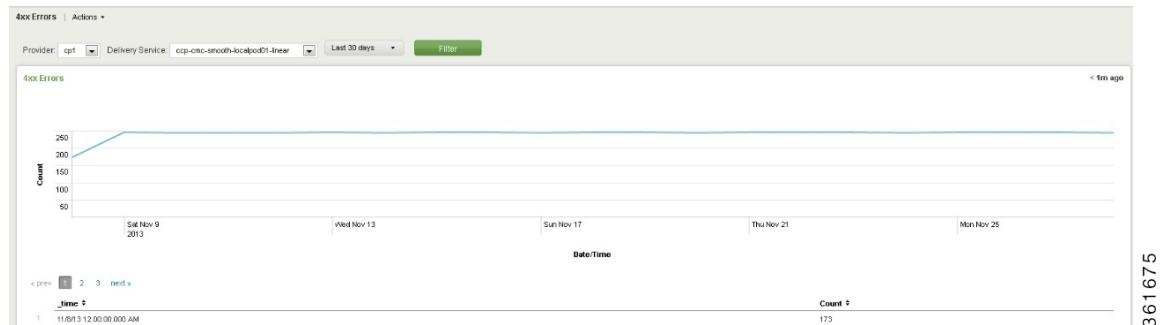
The following table describes the chart within this dashlet:

Table 60: Total Rejections due to Quota Limits Chart & Description

Chart	Description
Total Rejections due to Quota Limits	Illustrates the number of sessions rejected due to quota limits, for the specified time interval.
Chart Information	The information within this chart is a line graph with Date/Time along the X-axis and Total Sessions and Sessions Rejected along the Y-axis. The legends are Total Sessions and Sessions Declined.
Formula	The formula used to derive the graph is: total requests and requests with response code 453 or 499 plotted over time.
Chart Filters	This chart uses Delivery Server Group, Delivery Server, Provider, Delivery Service, and the Time Range Picker as filters.

Chart	Description
Availability	This chart is available to the Wholesale users and CDN Operators.

4xx Errors

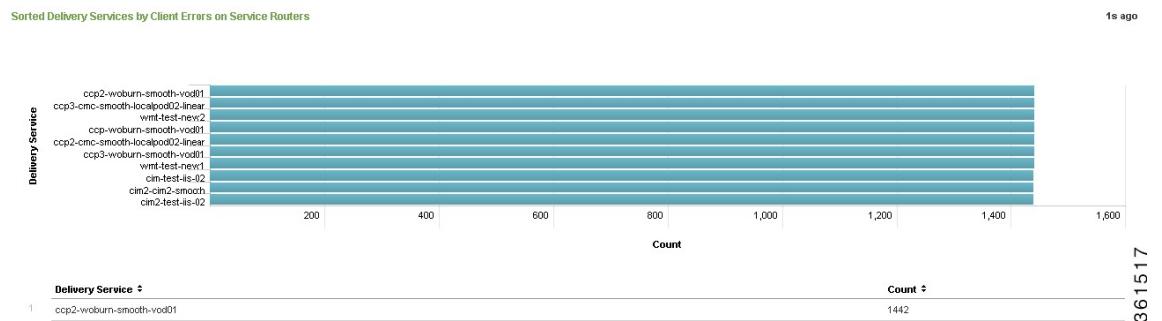


The following table describes the chart within this dashlet:

Table 61: 4xx Errors Chart & Description

Chart	Description
4xx Errors	Illustrates the number of 4xx errors for each delivery service over a selected period of time.
Chart Information	The information within this chart is a line graph with Date/Time along the X-axis and Count along the Y-axis.
Formula	The formula used to derive the graph is: the number of errors per day for each delivery service.
Chart Filters	This chart uses Provider, Delivery Service, and the Time Range Picker as filters.
Availability	This chart is available only to the wholesale users.

Sorted Delivery Services by Client Errors on Service Routers



The following table describes the chart within this dashlet:

Table 62: Sorted Delivery Services by Client Errors on Service Routers Chart & Description

Chart	Description
Sorted Delivery Services by Client Errors on Service Routers	Illustrates the top 10 delivery services by client errors on service routers.
Chart Information	The information within this chart is a bar graph with error Count along the X-axis and Delivery Services along the Y-axis.
Formula	The formula used to derive the graph is: top 10 delivery services by the number of 4xx errors occurring at the service router.
Chart Filters	This chart uses Service Router, Provider, Delivery Service, and the Time Range Picker as filters.
Availability	This chart is available only to the CDN Operators.

Response Codes by Protocol

For details, see [Response Codes by Protocol, on page 55](#)



Note This chart is available only to the CDN Operators.

4xx Errors by Protocol

For details, see [4xx Errors by Protocol, on page 58](#)



Note This chart is available only to the CDN Operators.

Streaming

Streaming trends dashboard provides an historical information on sessions and ABR of the managed CDN network.

To access this feature, perform the following steps:

- 1 From the main page, choose **Analytics > Trends**.
- 2 From the tree view, which appears in the left pane, select **Streaming**.

The following subcategories are displayed in Streaming:

- Sessions
- ABR

Sessions

This category includes data and charts for Concurrent Active Sessions, Total Sessions by Protocol, and Session Download Size.

Concurrent Active Sessions

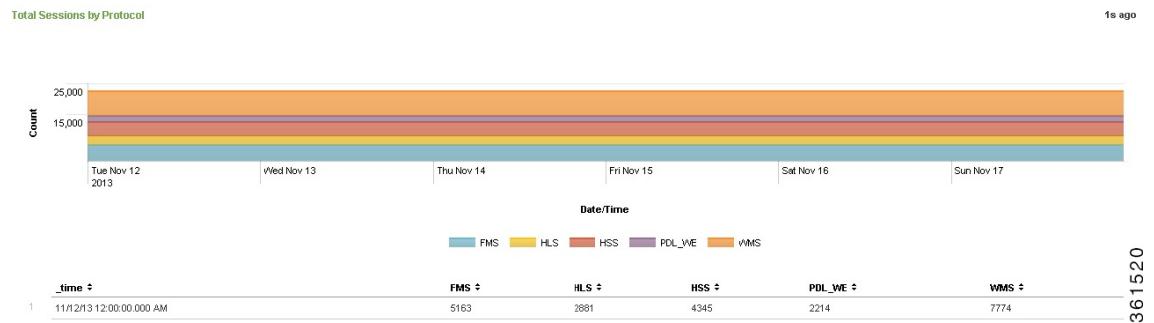
For details, see [Concurrent Active Sessions, on page 36](#)



Note

This chart is available only to the CDN Operators.

Total Sessions by Protocol

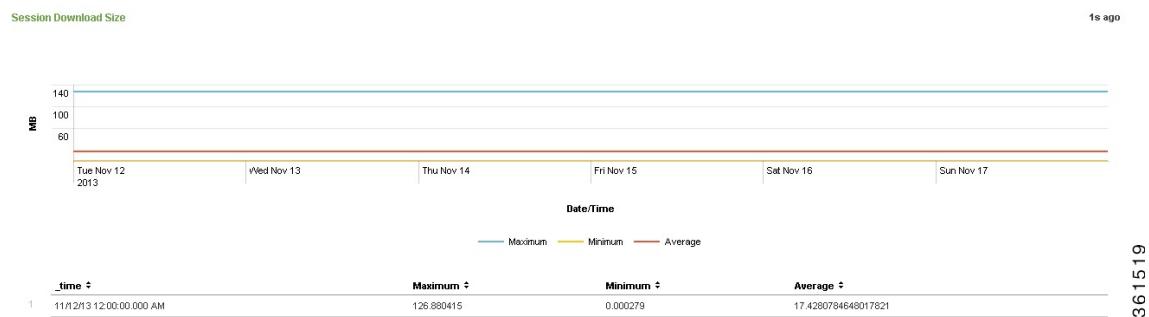


The following table describes the chart within this dashlet:

Table 63: Total Sessions by Protocol Chart & Description

Chart	Description
Total Sessions by Protocol	Illustrates the number of sessions by protocol, for the specified time interval.
Chart Information	The information within this chart is a stacked area graph with Date/Time along the X-axis and FMS, HLS, HDS, HSS, MPEG-DASH, PDL_WE, and WMS Count along the Y-axis. The legends are FMS, HLS, HDS, HSS, MPEG-DASH, PDL_WE, and WMS.
Formula	The formula used to derive the graph is: number of sessions grouped by protocol.
Chart Filters	This chart uses Delivery Server Group, Delivery Server, Provider, Delivery Service, and the Time Range Picker as filters.
Availability	This chart is available only to the CDN Operators.

Session Download Size



The following table describes the chart within this dashlet:

Table 64: Session Download Size Chart & Description

Chart	Description
Session Download Size	Illustrates the maximum, minimum, and average bytes delivered per session, for the specified time interval.
Chart Information	The information within this chart is a line graph with Date/Time along the X-axis and the Maximum, Minimum, and Average download size in MB along the Y-axis. The legends are Maximum, Minimum, and Average.
Formula	The formula used to derive the graph is: the maximum, minimum, and average bytes delivered in MB plotted over time.
Chart Filters	This chart uses Delivery Server Group, Delivery Server, Provider, Delivery Service, and the Time Range Picker as filters.
Availability	This chart is available only to the CDN Operators.

ABR

Bitrate



For details, see [ABR Session Bitrate by Protocol, on page 57](#)

Note

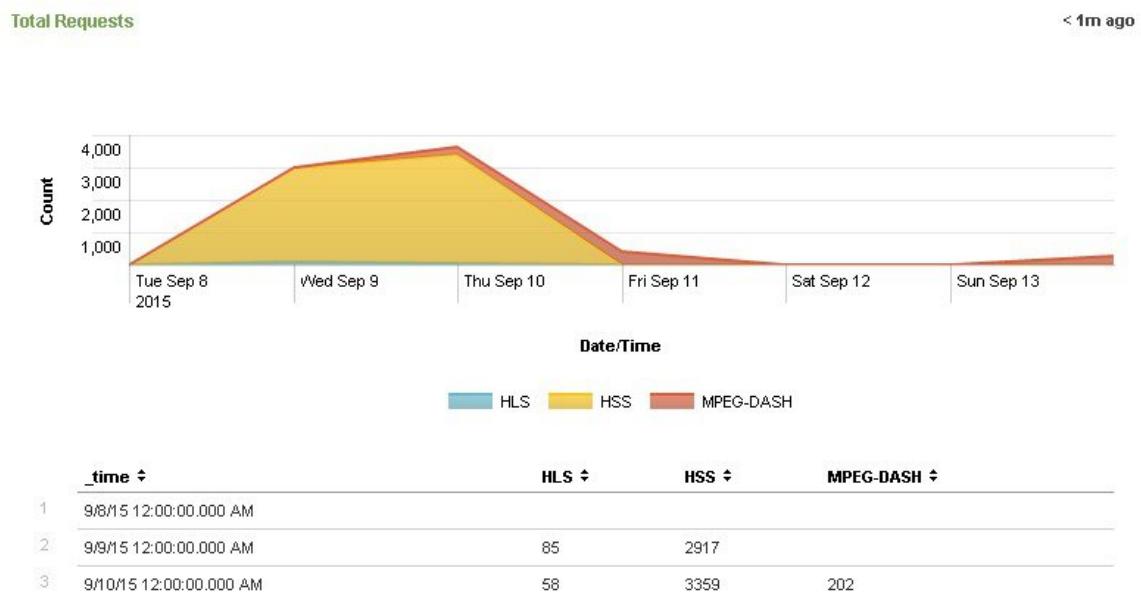
This chart is available only to the CDN Operators.

Bitrate Oscillations



Table 65: Bitrate Oscillations Chart & Description

Chart	Description
Bitrate Oscillations	Illustrates the number of bitrate shifts for the specified time interval.
Chart Information	The information within this chart is a line graph with Date/Time along the X-axis and bitrate oscillation Count along the Y-axis. The legends are delivery servers.
Formula	The formula used to derive the graph is: bitrate shifts over time per delivery server.
Chart Filters	This chart uses Delivery Server Group, Delivery Server, Provider, Delivery Service, and the Time Range Picker as filters.
Availability	This chart is available only to the CDN Operators.

Total Requests

The following table describes the chart within this dashlet:

Table 66: Total Requests Chart & Description

Chart	Description
Total Requests	Illustrates the number of requests by traffic type (only ABR), for the specified time interval.
Chart Information	The information within this chart is a stacked area graph with Date/Time along the X-axis and the total request Count along the Y-axis. The legends are protocols.
Formula	The formula used to derive the graph is: the number of requests per ABR protocol.
Chart Filters	This chart uses Delivery Server Group, Delivery Server, Provider, Delivery Service, and the Time Range Picker as filters.
Availability	This chart is available only to the CDN Operators.

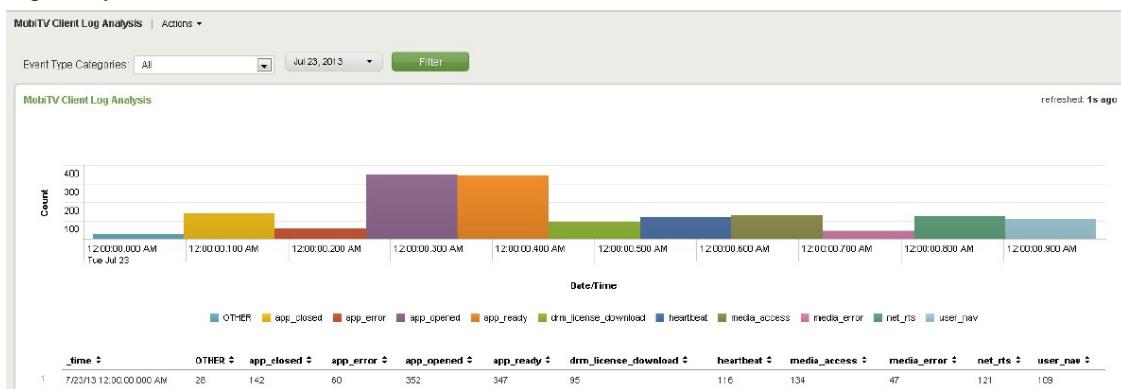
Request Rate

The following table describes the chart within this dashlet:

Table 67: Request Rate Chart & Description

Chart	Description
Request Rate	Illustrates the number of requests per second for each traffic type (HLS, HDS, HSS, MPEG-DASH, and MobiTV), for the specified time interval.
Chart Information	The information within this chart is a line graph with Date/Time along the X-axis and the Requests per Second along the Y-axis. The legends are HLS, HDS, HSS, MPEG-DASH, and MobiTV.
Formula	The formula used to derive the graph is: the number of requests per second for each traffic type of ABR protocol.
Chart Filters	This chart uses Delivery Server Group, Delivery Server, Provider, Delivery Service, and the Time Range Picker as filters.
Availability	This chart is available only to the CDN Operators.

MobiTV Client Log Analysis



361523

The following table describes the chart within this dashlet:

Table 68: MobiTV Client Log Analysis Chart & Description

Chart	Description
MobiTV Client Log Analysis	Illustrates the number of MobiTV client log events per category, for the specified time interval.
Chart Information	The information within this chart is a column graph with Date/Time along the X-axis and the MobiTV client event Count along the Y-axis. The legends are MobiTV Client events.
Formula	The formula used to derive the graph is: the number of events for the specified event category split by events over time.
Chart Filters	This chart uses Event Type Categories and Time Range Picker as filters.
Availability	This chart is available only to the CDN Operators.

Viewers

Viewers trends dashboard provides an historical information on the number of unique viewers, viewers by client type, viewer density by location, top viewers, viewers by session duration, viewers by ISP and Net speed, viewers by protocol, and viewers by download size on the managed CDN network.

To access this feature, perform the following:

- From the main page, choose **Analytics > Trends**.
- From the tree view, which appears in the left hand pane, select **Viewers**.

Number of Unique Viewers

For details, see [Unique Viewers, on page 65](#)

**Note**

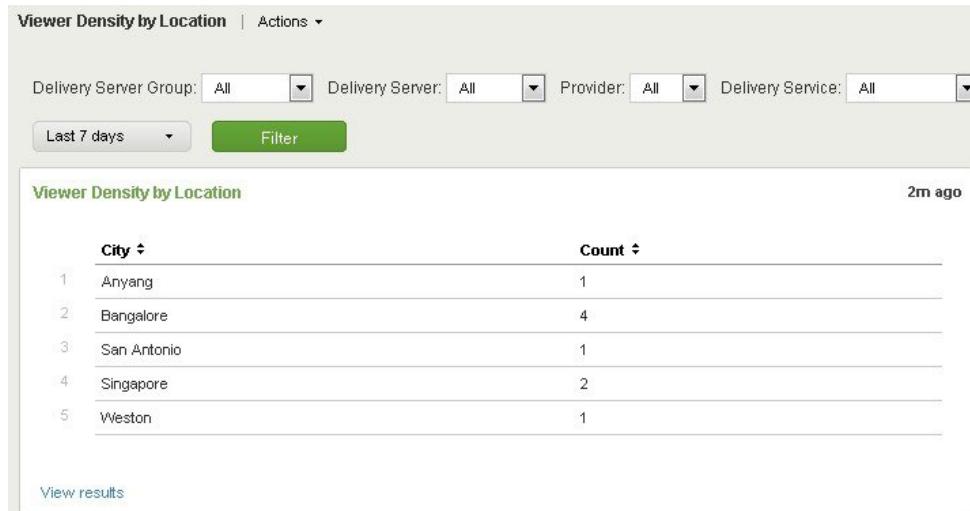
This chart is available to the Wholesale users and CDN Operators.

Viewers by Client Type

For details, see [Viewers by Client Type, on page 66](#)

**Note**

This chart is available to the Wholesale users and CDN Operators.

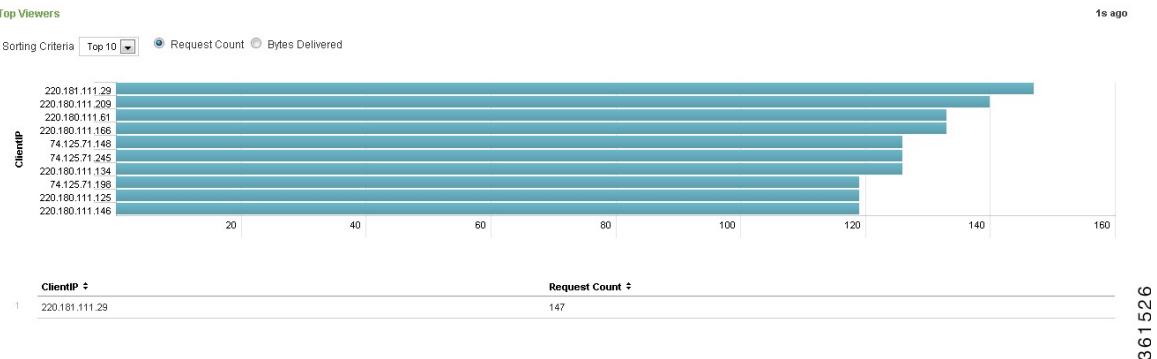
Viewer Density by Location

The following table describes the chart within this dashlet:

Table 69: Viewer Density by Location Chart & Description

Chart	Description
Viewer Density by Location	Illustrates the viewer density per city, for a specified time interval.
Chart Information	The information within this table are City and Count.
Formula	The formula used to derive the table is: number of viewers in each city.
Chart Filters	This table uses Delivery Server Group, Delivery Server, Provider, Delivery Service, and the Time Range Picker as filters.
Availability	This table is available to the Wholesale users and CDN Operators.

Top Viewers



The following table describes the chart within this dashlet:

Table 70: Top Viewers Chart & Description

Chart	Description
Top Viewers	Illustrates the top viewers by total bytes delivered and request count, for a specified time interval.
Chart Information	The information within this chart is a bar graph with the Request Count/Bytes Delivered along the X- axis and Client IP address along the Y-axis.
Formula	The formula used to derive the graph is: top 'n' viewers based on requests and bytes delivered.
Chart Filters	This chart uses Delivery Server Group, Delivery Server, Provider, Delivery Service, and the Time Range Picker as filters.
Availability	This chart is available to the Wholesale users and CDN Operators.

You can view the top viewers, such as top 10 and top 20, by choosing the respective options from the **Sorting Criteria** drop-down list. You can also view the request count and bytes delivered by clicking the respective radio buttons.

Viewers by Session Duration

For details, see [Viewers by Session Duration, on page 70](#)



Note This chart is available to the Wholesale users and CDN Operators.

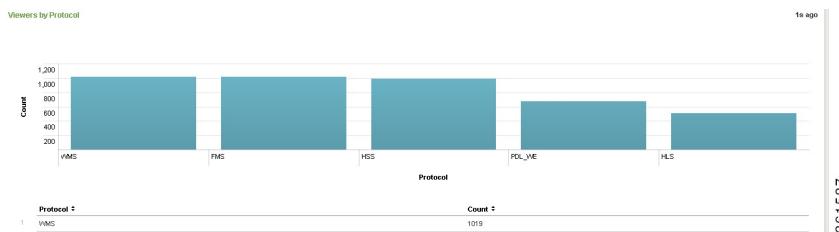
Viewers by ISP, Net Speed

For details, see [Viewers by ISP and Net Speed, on page 68](#)

**Note**

This chart is available to the Wholesale users and CDN Operators.

Viewers by Protocol



The following table describes the chart within this dashlet:

Table 71: Viewers by Protocol Chart & Description

Chart	Description
Viewers by Protocol	Illustrates the number of viewers per protocol, for the specified time interval.
Chart Information	The information within this chart is a column graph with Protocol along the X-axis and viewer Count along the Y-axis.
Formula	The formula used to derive the graph is: number of viewers grouped by protocol.
Chart Filters	This chart uses Delivery Server Group, Delivery Server, Provider, Delivery Service, and the Time Range Picker as filters.
Availability	This chart is available to the Wholesale users and CDN Operators.

Viewers by Download Size

For details, see [Viewers by Download Size, on page 69](#)

**Note**

This chart is available to the Wholesale users and CDN Operators.

Content

Content trends dashboard provides historical information on content by client requests, content by bytes transferred, top content by delivery server, average ABR session bitrate by content, top content by city, and top content by client type on the managed CDN network.

To access this feature, perform the following:

1. From the main page, choose **Analytics > Trends**.
2. From the tree view, which appears in the left pane, select **Content**.

Content by Client Requests

For details, see [Content by Client Request, on page 59](#)

**Note**

This chart is available to the Wholesale users and CDN Operators.

Content by Bytes Transferred

For details, see [Content by Bytes Transferred, on page 60](#)

**Note**

This chart is available to the Wholesale users and CDN Operators.

Top Content by Delivery Server

For details, see [Top Content by Delivery Server, on page 62](#)

**Note**

This chart is available only to the CDN Operators.

Average ABR Session Bitrate by Content

For details, see [Average ABR Session Bitrate by Content, on page 61](#)

**Note**

This chart is available only to the CDN Operators.

Top Content by City

For details, see [Top Content by City, on page 63](#)

**Note**

This chart is available to the Wholesale users and CDN Operators.

Top Content by Client Type

For details, see [Top Content by Client Type, on page 64](#)

**Note**

This chart is available to the Wholesale users and CDN Operators.

Content Origin

Content Origin trends dashboard provides historical information on ingest requests, bytes read, download speed, ingest response codes, and origin server failures on the managed CDN network.

To access this feature, perform the following:

1. From the main page, choose **Analytics > Trends**.
2. From the tree view, which appears in the left pane, select **Content Origin**.

**Note**

Content Origin charts will be displayed only when the Ingest transaction log is forwarded from VDS-IS to VDS-SM.

Ingest Requests

For details, see [Ingest Requests, on page 72](#)

**Note**

This chart is available only to the CDN Operators.

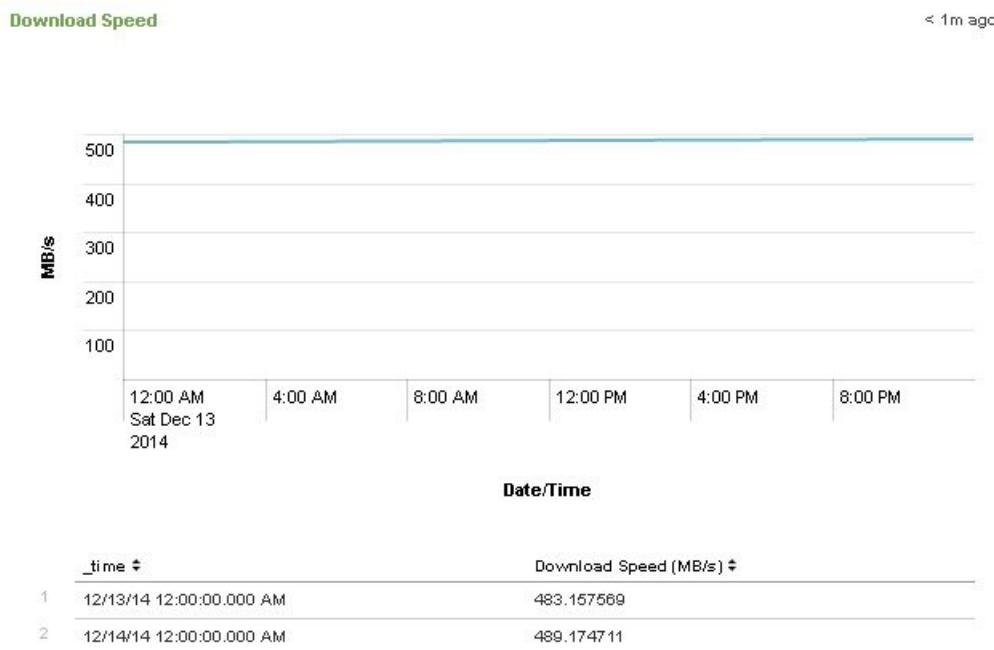
Bytes Read

For details, see [Bytes Read by Protocol, on page 74](#)

**Note**

This chart is available only to the CDN Operators.

Download Speed



The following table describes the chart within this dashlet:

Table 72: Download Speed Chart & Description

Chart	Description
Download Speed	Illustrates the download speed of data ingest, for the specified time interval.
Chart Information	The information within this chart is shown in a line graph with Date/Time along the X-axis and the download speed in MB/s along the Y-axis.
Formula	The formula used to derive the graph is: Total bytes read over total download duration with respect to time intervals.
Chart Filters	This chart uses Origin Server, Content Acquirer, and Time Range picker as filters.
Availability	This chart is available only to the CDN Operators.

Ingest Response Codes

For details, see [Ingest Response Codes, on page 76](#)



Note

This chart is available only to the CDN Operators.

Origin Server Failures

For details, see [Origin Server Failures, on page 77](#)



Note

This chart is available only to the CDN Operators.

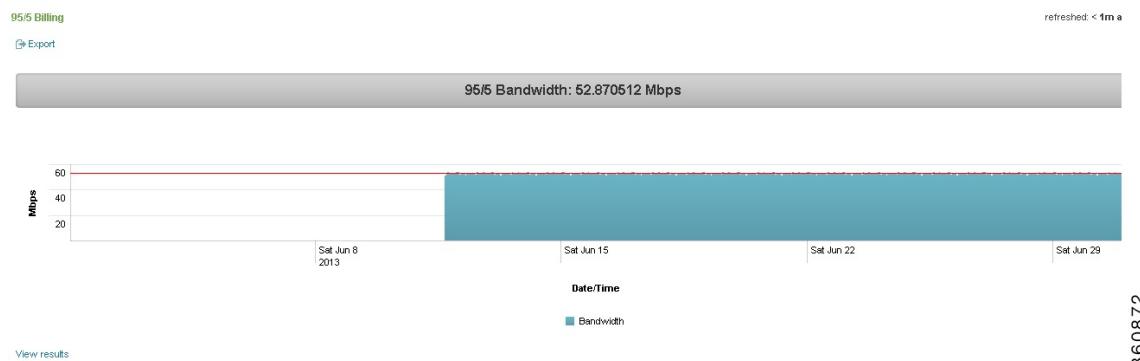
Billing

Billing trends dashboard provides an historical information on 95/5 billing, Pay Go Billing, and Burst Billing on the managed CDN network.

To access this feature, perform the following steps:

-
- Step 1** From the main page, choose **Analytics > Trends**.
- Step 2** From the tree view, which appears in the left hand pane, select **Billing**.
-

95/5 Billing



The following table describes the chart within this dashlet:

Table 73: 95/5 Billing Chart & Description

Chart	Description
95/5 Billing	Illustrates the billing data of previous months using the 95/5 billing.
Chart Information	The information within this chart is an area graph with Date/Time along the X-axis and Bandwidth in Mbps along Y-axis.

Chart	Description
Formula	The formula used to derive this is: The average bandwidth used to serve data per day over the selected time interval. The red line represents the 95th percentile of bandwidth for that month.
Chart Filters	This chart uses Month and Delivery Service as filters.
Availability	This chart is available only to the CDN Operators.

Billing Functionalities

By default, billing will be automatically generated daily at 21:30. It creates the billing csv file (detail, summary) for all the delivery services that were active during billing period.

The path to view the billing.csv is:

Go to LWF node and navigate to `/home/bnisplunk/data/billing`

Running billing manually

To run the billing manually, perform the following steps:

- 1 Login to the JS node and navigate to `opt/splunk/etc/apps/CDN_JS/bin`
- 2 In the above path, run `./hourlyDataCheck.sh -F YYYYMMDD` (replace the date for which hourlyDataCheck needs to be executed).

The above mentioned script, marks the status as FIXED for every hour of that date in the "cdn_billing_session" index, which means there are NO missing logs.

To verify this, perform the following steps:

- a) Login to JS node and navigate to `/opt/splunk/bin`
- b) Run `./splunk search 'index=cdn_billing_session | table Status,TimeId'`
- c) Enter the username and password; **Username**: admin and **Password**: Beaumaris1
- d) Check the status by verifying that the record is "FIXED YYYYMMDD". This implies that it is in FIXED status for all 24 hours in date YYYYMMDD.

- 3 In the path mentioned in step 1, run `nohup ./repeatCheck.sh -F YYYYMMDD &` (replace the date for which repeatCheck needs to be executed).

This will mark the status as FORCED for every hour of that date in the "cdn_billing_session" index. Also, an "BILLING-INDEXED" record for that day is created. This implies that all the logs of that date are indexed. You can verify this by performing the following steps:

- a) Login to the JS node and navigate to `/opt/splunk/bin`
- b) Run `./splunk search 'index=cdn_billing_session | table Status,TimeId'`
- c) Enter the username and password; **Username**: admin and **Password**: Beaumaris1
- d) Check the status by verifying that the record is "BILLING-INDEXED YYYYMMDD", BILLING-INDEXED YYYYMMDD. This implies that the date YYYYMMDD is already indexed.

- 4 Login to the LWF node and navigate to `opt/splunkforwarder/etc/apps/Billing/bin` and run `./billing.sh`. The billing files will be generated under the dir `"/home/bnisplunk/data/billing"`.

- a) Login to the JS node and navigate to `/opt/splunk/bin`

- b) Run `./splunk search 'index=cdn_billing_session | table Status,TimeId'`.
- c) Enter the username and password; **Username:** admin and **Password:** Beaumaris1
- d) Check the status by verifying that the record is "BILLED YYYYMMDD". This implies that billing records have been generated for the date YYYYMMDD.

The generated CSV files will have the following fields:

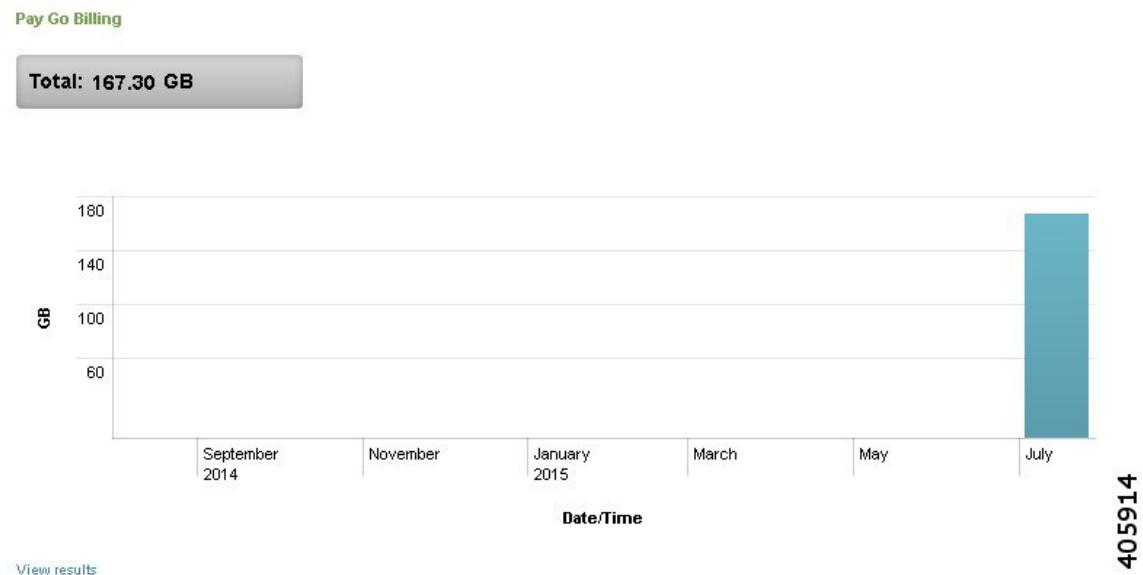
Detailed csv

Delivery_Service:<Delivery Service Name> FQDN:<fqdn> provider:<Provider Name> reseller:<Reseller Name> StartTime,EndTime,ClientIP,ServerIP,URL,MB_Bytes_Delivered,error_code

Summary csv

Date,Total_GB_Bytes_Delivered,Total_Session_Declined_due_to_quota_limits,Total_Sessions_Delivered

Pay Go Billing



405914

Detailed Pay Go Billing

Total: 167.31 GB

[View results](#)

405913

The following table describes the chart within this dashlet:

Table 74: Pay Go Billing Chart & Description

Chart	Description
Pay Go Billing	Illustrates the total bytes delivered on a monthly basis. This chart displays the data for the past twelve months till the previous month, by default You can drill down the data in the chart at granular level. Click on the column (particular month) to view the Detailed Pay Go Billing chart, displaying the total bytes delivered on a daily basis.
Chart Information	The information within this chart is a column graph with Date/Time along the X-axis and bytes delivered in GB along the Y-axis.
Formula	The formula used to derive this chart is: Sum of bytes delivered on a monthly or daily basis.
Chart Filters	This chart uses Delivery Service as filter.
Availability	This chart is available only to the CDN Operators.

Burst Billing

Burst Billing

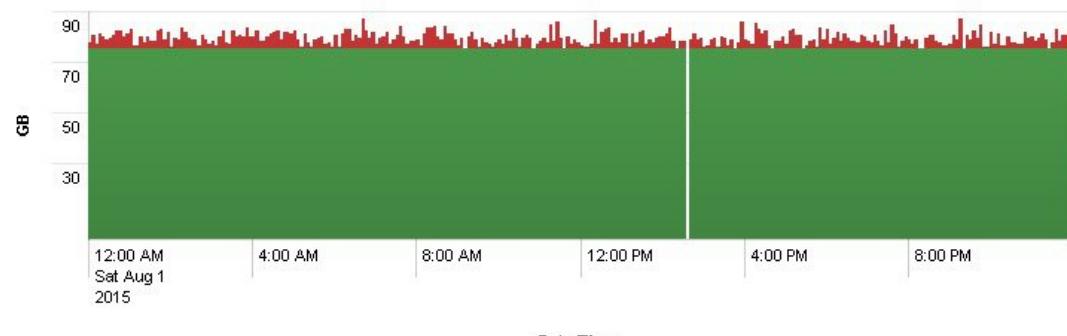
Total: 4826.55 GB



[View results](#)

Daily Burst Billing

Total: 1247.26 GB



[View results](#)

The following table describes the chart within this dashlet:

405912

405911

Table 75: Burst Billing Chart & Description

Chart	Description
Burst Billing	Illustrates the exceeding volume which is consumed over the configured flat throughput volume for the specified month. You can drill down the data in the chart at granular level. Click on the column to view the Daily Burst Billing chart, displaying the exceeded bandwidth for the selected day.
Chart Information	The information within this chart is a stacked column graph with Date/Time along the X-axis and bytes consumed in GB along the Y-axis. The legends representing the graph are: <ul style="list-style-type: none"> • Flat Throughput—Bandwidth configured for the user. • Burst Billing Volume—Exceeded bandwidth utilized by the user.
Formula	The formula used to derive this chart is: burst billing volume computed as trapezoid area over flat throughput in a five minute slot.
Chart Filters	This chart uses Month as filter.
Availability	This chart is available only to the CDN Operators.

Customizing Trends Dashboard

The Trends dashboard lists various categories of dashlets. By default, the CDN operator can view all the dashlets, but the wholesale users can view only limited dashlets. VDS-SM enables the CDN operator to customize the availability of various dashlets for the wholesale users.

To customize the Trends dashboard, follow these steps:

Step 1 Log in to the User Interface node using the following credentials:

User name: bnninet
Password: password

Step 2 Navigate to the following location:

/home/bnninet/jbossesb/server/default/conf/bni/

Step 3 Open the **CPAnalyticsTrends.xml** file.

The *CPAnalyticsTrends.xml* file contains the list of dashlets that are grouped under various categories of Trends.

Step 4 Set the "enabled" attribute of the menu item as either "**true**" or "**false**", corresponding to the required dashlet.

- **true**—Dashlet is available to the Wholesale users.
- **false**—Dashlet is not available to the Wholesale users.

Step 5 Save the file.

Reports

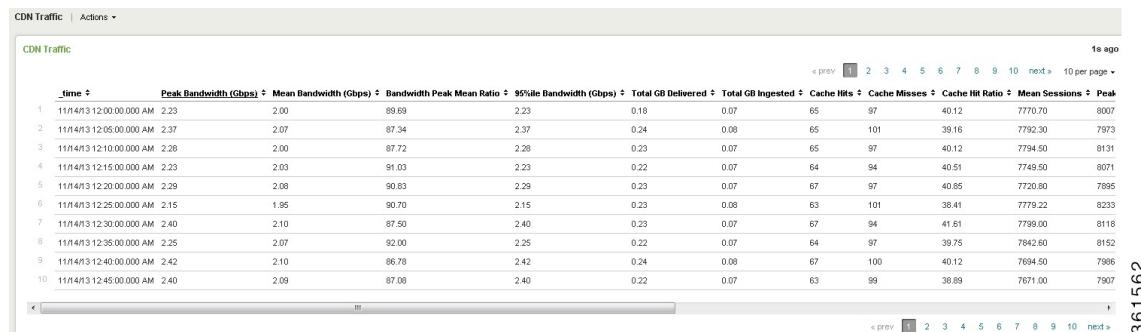
This feature allows you to view the daily, weekly, and monthly reports for CDN traffic, traffic summary by delivery servers, traffic summary by delivery services, delivery server traffic, delivery service traffic, all assets - video, and all assets - non-video.

To access this feature, from the main page, choose **Analytics > Reports**.

Daily

To view the daily reports, select **Daily** from the Reports main page.

CDN Traffic [5 min Intervals]

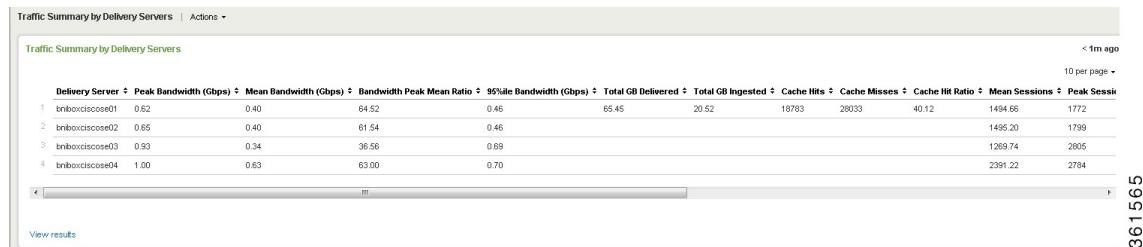


The screenshot shows a table titled 'CDN Traffic' with 10 rows of data. The columns include: _time, Peak Bandwidth (Gbps), Mean Bandwidth (Gbps), Bandwidth Peak Mean Ratio, 95%ile Bandwidth (Gbps), Total GB Delivered, Total GB Ingested, Cache Hits, Cache Misses, Cache Hit Ratio, Mean Sessions, and Peak. The data spans from 11/14/13 12:00:00 AM to 11/14/13 12:45:00 AM. The last column, 'Peak', contains values such as 2.23, 2.07, 2.00, etc. The table has a header row with sorting icons and a footer row with pagination links (1-10) and a 'per page' dropdown set to 10.

Table 76: CDN Traffic [5 min Intervals] Table & Description

Table	Description
CDN Traffic [5 min Intervals]	Illustrates CDN Traffic for the past day in 5 minute intervals.
Table Information	The information within this table is: _time, peak bandwidth, mean bandwidth, bandwidth peak mean ratio, 95%ile bandwidth, total GB delivered, total GB ingested, cache hits, cache misses, cache hit ratio, mean sessions, peak sessions, sessions peak mean ratio, 95%ile sessions, total requests, successful requests, unsuccessful requests, 4xx errors, 5xx errors, success %.

Traffic Summary by Delivery Servers



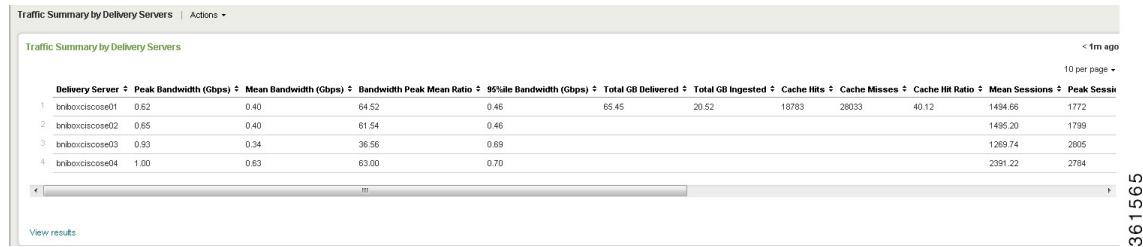
The screenshot shows a table titled "Traffic Summary by Delivery Servers" with the following data:

Delivery Server	Peak Bandwidth (Gbps)	Mean Bandwidth (Gbps)	Bandwidth Peak Mean Ratio	95%ile Bandwidth (Gbps)	Total GB Delivered	Total GB Ingested	Cache Hits	Cache Misses	Cache Hit Ratio	Mean Sessions	Peak Session
1 trboxxiscose01	0.62	0.40	64.52	0.46	65.45	20.52	18783	28033	40.12	1494.66	1772
2 trboxxiscose02	0.65	0.40	61.54	0.46						1495.20	1799
3 trboxxiscose03	0.93	0.34	36.56	0.69						1269.74	2805
4 trboxxiscose04	1.00	0.63	63.00	0.70						2391.22	2784

Table 77: Traffic Summary by Delivery Servers Table & Description

Table	Description
Traffic Summary by Delivery Servers	Illustrates the traffic summary for the past day for each delivery server.
Information	The information within this table is: delivery server, peak bandwidth, mean bandwidth, bandwidth peak mean ratio, 95%ile bandwidth, total GB delivered, total GB ingested, cache hits, cache misses, cache hit ratio, mean sessions, peak sessions, sessions peak mean ratio, 95%ile sessions, total requests, successful requests, unsuccessful requests, 4xx errors, 5xx errors, success %.

Traffic Summary by Delivery Services



The screenshot shows a table titled "Traffic Summary by Delivery Services" with the following data:

Delivery Service	Peak Bandwidth (Gbps)	Mean Bandwidth (Gbps)	Bandwidth Peak Mean Ratio	95%ile Bandwidth (Gbps)	Total GB Delivered	Total GB Ingested	Cache Hits	Cache Misses	Cache Hit Ratio	Mean Sessions	Peak Session
1 trboxxiscose01	0.62	0.40	64.52	0.46	65.45	20.52	18783	28033	40.12	1494.66	1772
2 trboxxiscose02	0.65	0.40	61.54	0.46						1495.20	1799
3 trboxxiscose03	0.93	0.34	36.56	0.69						1269.74	2805
4 trboxxiscose04	1.00	0.63	63.00	0.70						2391.22	2784

Table 78: Traffic Summary by Delivery Services Table & Description

Table	Description
Traffic Summary by Delivery Services	Illustrates the traffic summary for the past day for each delivery service.

Table	Description
Information	The information within this table is: delivery service, peak bandwidth, mean bandwidth, bandwidth peak mean ratio, 95%ile bandwidth, total GB delivered, total GB ingested, cache hits, cache misses, cache hit ratio, mean sessions, peak sessions, sessions peak mean ratio, 95%ile sessions, total requests, successful requests, unsuccessful requests, 4xx errors, 5xx errors, success %.

Delivery Server Traffic [5 min Intervals]

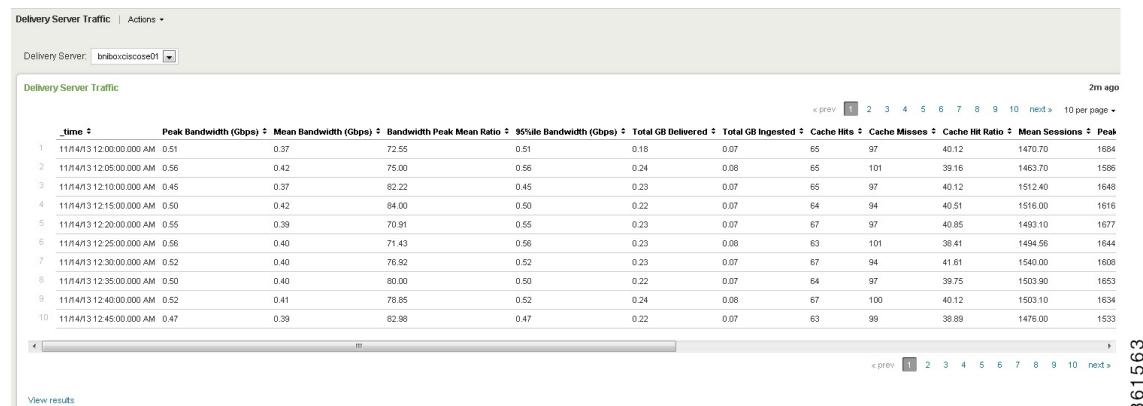


Table 79: Delivery Server Traffic [5 min Intervals] Table & Description

Table	Description
Delivery Server Traffic [5 min Intervals]	Illustrates the delivery server traffic details for a selected delivery server in 5 minute intervals
Information	The information within this table is: _time, peak bandwidth, mean bandwidth, bandwidth peak mean ratio, 95%ile bandwidth, total GB delivered, total GB ingested, cache hits, cache misses, cache hit ratio, mean sessions, peak sessions, sessions peak mean ratio, 95%ile sessions, total requests, successful requests, unsuccessful requests, 4xx errors, 5xx errors, success %.

Choose the required delivery server from the **Delivery Server** drop-down list located above the chart.

Delivery Service Traffic [5 min Intervals]

Delivery Service Traffic | Actions ▾

Delivery Service: ccp-ccp-images

Delivery Service Traffic

1s ago

10 per page ▾

_time	Peak Bandwidth (Gbps)	Mean Bandwidth (Gbps)	Bandwidth Peak Mean Ratio	95%ile Bandwidth (Gbps)	Total GB Delivered	Total GB Ingested	Cache Hits	Cache Misses	Cache Hit Ratio	Mean Sessions	Peak Sessions
1 11/14/13 12:00:00.000 AM 0.07	0.04	57.14	0.07	0.0012	0.0005	1	2	33.33	129.80	157.0	
2 11/14/13 12:05:00.000 AM 0.06	0.03	50.00	0.06	0.0138	0.0010	4	3	57.14	132.10	185.0	
3 11/14/13 12:10:00.000 AM 0.08	0.05	62.50	0.08	0.0033	0.0010	2	4	33.33	149.70	199.0	
4 11/14/13 12:15:00.000 AM 0.06	0.03	50.00	0.06	0.0029	0.0004	0	2	0.00	154.90	190.0	
5 11/14/13 12:20:00.000 AM 0.08	0.04	50.00	0.08	0.0134	0.0005	4	2	66.67	136.60	199.0	
6 11/14/13 12:25:00.000 AM 0.07	0.03	42.86	0.07	0.0033	0.0010	2	4	33.33	146.58	189.0	
7 11/14/13 12:30:00.000 AM 0.05	0.03	50.00	0.05	0.0029	0.0004	0	3	0.00	139.00	184.0	
8 11/14/13 12:35:00.000 AM 0.07	0.04	57.14	0.07	0.0134	0.0005	4	2	66.67	150.60	188.0	
9 11/14/13 12:40:00.000 AM 0.08	0.05	62.50	0.08	0.0058	0.0010	2	3	40.00	143.90	191.0	
10 11/14/13 12:45:00.000 AM 0.07	0.05	71.43	0.07	0.0113	0.0010	4	4	50.00	145.60	188.0	

View results

361564

Table 80: Delivery Service Traffic [5 min Intervals] Table & Description

Table	Description
Delivery Service Traffic [5 min Intervals]	Illustrates the delivery service traffic details for a selected delivery service in 5 minute intervals.
Information	The information within this table is: _time, peak bandwidth, mean bandwidth, bandwidth peak mean ratio, 95%ile bandwidth, total GB delivered, total GB ingested, cache hits, cache misses, cache hit ratio, mean sessions, peak sessions, sessions peak mean ratio, 95%ile sessions, total requests, successful requests, unsuccessful requests, 4xx errors, 5xx errors, success %.

Choose the required delivery service from the **Delivery Service** drop-down list located above the chart.

All Assets - Video

All Assets Report - Video | Actions ▾

Delivery Service: ccp-ccp-images

All Assets - Video

1s ago

10 per page ▾

URL	Plays	UniqueUsers	Bytes	Minutes	MinutesPerPlay	MinutesPerUser	PlaysPerUser
1 rtsp://anilboxciscose01.se ccp-ccp-images.cdn2.com BBC.wmv	84	72	205840000	113.8767	1.355675	1.581621	1.166667
2 rtsp://anilboxciscose01.se ccp-ccp-images.cdn2.com/sprint13/a/a1.mov	82	70	910938000	22.17007	0.2703667	0.3167153	1.171429
3 rtsp://ccp-ccp-images.cdn2.com BBC.wmv	20	19	49600000	27.43967	1.371984	1.444193	1.052632
4 rtsp://ccp-ccp-images.cdn2.com/sprint13/a/a1.mov	21	21	233289000	5.67770	0.270367	0.270367	1

View results

361561



To enable All Asset Reports set the **assetReportEnabled** option in indexsetting stanza to true in the **common.conf** file present in **/opt/splunk/etc/apps/appnormalize/bin** folder.

Table 81: All Assets - Video Table & Description

Table	Description
All Assets - Video	Illustrates various metrics for video assets for the past day.
Information	The information within this table is: URL, Plays, UniqueUsers, Bytes, Minutes, MinutesPerPlay, MinutesPerUser, and PlaysPerUser.

Choose the required delivery service from the **Delivery Service** drop-down list located above the chart.

All Assets - Non-Video

The screenshot shows a report titled "All Assets Report - Non-Video". At the top, there is a dropdown menu labeled "Delivery Service" set to "ccp-ccp-images". Below the header, the title "All Assets - Non-Video" is displayed. To the right, there are filters for "1s ago" and "10 per page". The main content is a table with three columns: "URI", "Bytes", and "UniqueUsers". Two rows of data are shown:

URI	Bytes	UniqueUsers
http://nibboxciscose01.se ccp-ccp-images.cdn2.com/vod	435754420	136
http://ccp-ccp-images.cdn2.com/vod	106933600	39

At the bottom left is a "View results" link, and on the far right, the number "361560" is visible.

Table 82: All Assets - Non-Video Table & Description

Table	Description
All Assets - Non-Video	Illustrates various metrics for non-video assets for the past day.
Information	The information within this table is: URL, Bytes, Requests, and UniqueUsers.

Choose the required delivery service from the **Delivery Service** drop-down list located above the chart.

Weekly

To view the daily reports, select **Weekly** from the Reports main page.

CDN Traffic [1 hour Intervals]

The screenshot shows a table titled "CDN Traffic" with 10 rows of data. The columns include: _time, Peak Bandwidth (Gbps), Mean Bandwidth (Gbps), Bandwidth Peak Mean Ratio, 95%ile Bandwidth (Gbps), Total GB Delivered, Total GB Ingested, Cache Hits, Cache Misses, Cache Hit Ratio, Mean Sessions, and Peak S. The data spans from 11/6/13 12:00:00 AM to 11/6/13 9:00:00 AM. The last column, "Peak S", contains the identifier "361576".

	_time	Peak Bandwidth (Gbps)	Mean Bandwidth (Gbps)	Bandwidth Peak Mean Ratio	95%ile Bandwidth (Gbps)	Total GB Delivered	Total GB Ingested	Cache Hits	Cache Misses	Cache Hit Ratio	Mean Sessions	Peak S	
1	11/6/13 12:00:00 AM	2.42	1.05	2.10	2.69	0.85	783	1168	40.13	3949.73	8233		
2	11/6/13 1:00:00 AM	2.56	1.06	2.41	2.13	2.74	0.86	782	1173	40.00	3949.91	8197	
3	11/6/13 2:00:00 AM	2.51	1.04	41.43	2.09	2.72	0.85	784	1166	40.21	3979.73	8253	
4	11/6/13 3:00:00 AM	2.45	1.06	43.27	2.13	2.74	0.86	784	1170	40.12	3959.34	8182	
5	11/6/13 4:00:00 AM	2.52	1.05	41.67	2.10	2.71	0.84	785	1167	40.22	3976.11	8239	
6	11/6/13 5:00:00 AM	2.47	1.06	42.91	2.14	2.74	0.86	782	1172	40.02	3961.35	8282	
7	11/6/13 6:00:00 AM	2.54	1.05	41.34	2.11	2.72	0.85	780	1166	40.08	3959.09	8262	
8	11/6/13 7:00:00 AM	2.69	1.05	39.03	2.17	2.72	0.85	783	1169	40.11	3959.94	8225	
9	11/6/13 8:00:00 AM	2.43	1.04	42.00	2.13	2.74	0.86	784	1171	40.10	3967.40	8175	
10	11/6/13 9:00:00 AM	2.57	1.05	40.86	2.12	2.72	0.85	782	1166	40.14	3966.05	8206	

Table 83: CDN Traffic [1 hour Intervals] Table & Description

Table	Description
CDN Traffic [1 hour Intervals]	Illustrates CDN Traffic for the past week in 1 hour intervals.
Information	The information within this table is: _time, peak bandwidth, mean bandwidth, bandwidth peak mean ratio, 95%ile bandwidth, total GB delivered, total GB ingested, cache hits, cache misses, cache hit ratio, mean sessions, peak sessions, sessions peak mean ratio, 95%ile sessions, total requests, successful requests, unsuccessful requests, 4xx errors, 5xx errors, success %.

Traffic Summary by Delivery Servers

The screenshot shows a table titled "Traffic Summary by Delivery Servers" with 4 rows of data. The columns include: Delivery Server, Peak Bandwidth (Gbps), Mean Bandwidth (Gbps), Bandwidth Peak Mean Ratio, 95%ile Bandwidth (Gbps), Total GB Delivered, Total GB Ingested, Cache Hits, Cache Misses, Cache Hit Ratio, Mean Sessions, and Peak Session. The last column, "Peak Session", contains the identifier "361579".

	Delivery Server	Peak Bandwidth (Gbps)	Mean Bandwidth (Gbps)	Bandwidth Peak Mean Ratio	95%ile Bandwidth (Gbps)	Total GB Delivered	Total GB Ingested	Cache Hits	Cache Misses	Cache Hit Ratio	Mean Sessions	Peak Session
1	bntoxoicose001	0.62	0.40	64.52	0.41	458.20	143.54	131550	186236	40.13	1494.51	1772
2	bntoxoicose002	0.65	0.40	61.54	0.41						1495.21	1791
3	bntoxoicose003	0.93	0.34	36.56	0.34						1269.74	2805
4	bntoxoicose004	1.00	0.63	63.00	0.64						2391.16	2784

Table 84: Traffic Summary by Delivery Servers Table & Description

Table	Description
Traffic Summary by Delivery Servers	Illustrates the traffic summary for the past week for each delivery server.

Table	Description
Information	The information within this table is: delivery server, peak bandwidth, mean bandwidth, bandwidth peak mean ratio, 95%ile bandwidth, total GB delivered, total GB ingested, cache hits, cache misses, cache hit ratio, mean sessions, peak sessions, sessions peak mean ratio, 95%ile sessions, total requests, successful requests, unsuccessful requests, 4xx errors, 5xx errors, success %.

Traffic Summary by Delivery Services

Traffic Summary by Delivery Services											
Traffic Summary by Delivery Services											
	Delivery Service	Peak Bandwidth (Gbps)	Mean Bandwidth (Gbps)	Bandwidth Peak Mean Ratio	95%ile Bandwidth (Gbps)	Total GB Delivered	Total GB Ingested	Cache Hits	Cache Misses	Cache Hit Ratio	Mean Sessions
1	ccp-cop-images	0.08	0.04	50.00	0.04	14.07	1.40	4321	5753	42.89	149.26
2	ccp-cmc-smooth-localpod01-linear	0.16	0.08	50.00	0.08	5.32	0.63	2153	714	75.10	298.44
3	ccp-cmc-smooth-localpod02-linear	0.08	0.04	50.00	0.04	12.68	0.00	5757	0	100.00	149.05
4	ccp-cmc-smooth-pod01live01	0.16	0.08	50.00	0.08	9.90	0.79	4317	2881	59.97	300.54
5	ccp-cmc-smooth-pod01live02	0.16	0.08	50.00	0.08	4.70	3.57	720	9361	7.14	299.13
6	ccp-woburn-smooth-live01	0.08	0.04	50.00	0.04	15.61	2.94	4320	8634	33.35	149.84
7	ccp-woburn-smooth-live02	0.16	0.08	50.00	0.08	6.74	2.04	721	6479	10.01	299.11
8	ccp-woburn-smooth-vod01	0.09	0.04	50.00	0.04	6.90	2.21	720	8477	10.00	150.16
9	ccp2-cop2-images	0.08	0.04	50.00	0.04	14.10	1.40	4320	5760	42.86	149.69
10	ccp2-cmc-smooth-localpod01-linear	0.08	0.04	50.00	0.04	5.33	0.63	2161	721	74.98	149.55

361580

Table 85: Traffic Summary by Delivery Services Table & Description

Chart	Description
Traffic Summary by Delivery Services	Illustrates the traffic summary for the past week for each delivery service.
Information	The information within this table is: delivery service, peak bandwidth, mean bandwidth, bandwidth peak mean ratio, 95%ile bandwidth, total GB delivered, total GB ingested, cache hits, cache misses, cache hit ratio, mean sessions, peak sessions, sessions peak mean ratio, 95%ile sessions, total requests, successful requests, unsuccessful requests, 4xx errors, 5xx errors, success %.

Delivery Server Traffic [1 hour Intervals]

The screenshot shows a table titled "Delivery Server Traffic" with 10 rows of data. The columns include: _time, Peak Bandwidth (Gbps), Mean Bandwidth (Gbps), Bandwidth Peak Mean Ratio, 95%ile Bandwidth (Gbps), Total GB Delivered, Total GB Ingested, Cache Hits, Cache Misses, Cache Hit Ratio, Mean Sessions, Peak Sessions, and Peak Success %. The data spans from 11/6/13 12:00:00 AM to 11/6/13 9:00:00 AM.

_time	Peak Bandwidth (Gbps)	Mean Bandwidth (Gbps)	Bandwidth Peak Mean Ratio	95%ile Bandwidth (Gbps)	Total GB Delivered	Total GB Ingested	Cache Hits	Cache Misses	Cache Hit Ratio	Mean Sessions	Peak Sessions	Peak Success %
1 11/6/13 12:00:00 AM	0.56	0.40	71.43	0.42	2.69	0.85	783	1168	40.13	1495.73	1684.00	
2 11/6/13 1:00:00 AM	0.58	0.41	70.69	0.46	2.74	0.85	782	1173	40.00	1500.33	1724.00	
3 11/6/13 2:00:00 AM	0.57	0.39	68.42	0.41	2.72	0.85	784	1166	40.21	1508.83	1760.00	
4 11/6/13 3:00:00 AM	0.55	0.40	72.73	0.43	2.74	0.86	784	1170	40.12	1494.88	1737.00	
5 11/6/13 4:00:00 AM	0.57	0.40	70.18	0.42	2.71	0.84	785	1167	40.22	1506.99	1713.00	
6 11/6/13 5:00:00 AM	0.54	0.41	75.93	0.46	2.74	0.86	782	1172	40.02	1488.83	1699.00	
7 11/6/13 6:00:00 AM	0.56	0.41	73.21	0.43	2.72	0.85	780	1166	40.08	1495.94	1676.00	
8 11/6/13 7:00:00 AM	0.57	0.40	70.18	0.43	2.72	0.85	783	1169	40.11	1489.30	1772.00	
9 11/6/13 8:00:00 AM	0.59	0.39	66.10	0.43	2.74	0.86	784	1171	40.10	1501.52	1724.00	
10 11/6/13 9:00:00 AM	0.57	0.39	68.42	0.41	2.72	0.85	782	1166	40.14	1494.73	1744.00	

361577

Table 86: Delivery Server Traffic [1 hour Intervals] Table & Description

Table	Description
Delivery Server Traffic [1 hour Intervals]	Illustrates the delivery server traffic details for a selected delivery server in 1 hour intervals
Information	The information within this table is: _time, peak bandwidth, mean bandwidth, bandwidth peak mean ratio, 95%ile bandwidth, total GB delivered, total GB ingested, cache hits, cache misses, cache hit ratio, mean sessions, peak sessions, sessions peak mean ratio, 95%ile sessions, total requests, successful requests, unsuccessful requests, 4xx errors, 5xx errors, success %.

Choose the required delivery server from the **Delivery Server** drop-down list located above the chart.

Delivery Service Traffic [1 hour Intervals]

The screenshot shows a table titled "Delivery Service Traffic" with 10 rows of data. The columns include: _time, Peak Bandwidth (Gbps), Mean Bandwidth (Gbps), Bandwidth Peak Mean Ratio, 95%ile Bandwidth (Gbps), Total GB Delivered, Total GB Ingested, Cache Hits, Cache Misses, Cache Hit Ratio, Mean Sessions, Peak Sessions, and Peak Success %. The data spans from 11/6/13 12:00:00 AM to 11/6/13 9:00:00 AM.

_time	Peak Bandwidth (Gbps)	Mean Bandwidth (Gbps)	Bandwidth Peak Mean Ratio	95%ile Bandwidth (Gbps)	Total GB Delivered	Total GB Ingested	Cache Hits	Cache Misses	Cache Hit Ratio	Mean Sessions	Peak Sessions	Peak Success %
1 11/6/13 12:00:00 AM	0.08	0.04	50.00	0.05	0.0795	0.0083	25	33	43.10	143.57	199.00	
2 11/6/13 1:00:00 AM	0.08	0.04	50.00	0.06	0.0897	0.0088	28	36	43.75	147.39	199.00	
3 11/6/13 2:00:00 AM	0.08	0.04	50.00	0.05	0.0808	0.0078	24	33	42.11	152.63	199.00	
4 11/6/13 3:00:00 AM	0.08	0.04	50.00	0.05	0.0816	0.0088	26	35	42.62	150.00	198.00	
5 11/6/13 4:00:00 AM	0.08	0.04	50.00	0.05	0.0813	0.0082	24	34	41.38	145.24	199.00	
6 11/6/13 5:00:00 AM	0.08	0.04	50.00	0.06	0.0917	0.0083	28	34	45.16	148.75	199.00	
7 11/6/13 6:00:00 AM	0.08	0.04	50.00	0.05	0.0805	0.0082	25	35	41.67	149.75	197.00	
8 11/6/13 7:00:00 AM	0.08	0.04	50.00	0.05	0.0820	0.0083	25	33	43.10	150.81	198.00	
9 11/6/13 8:00:00 AM	0.08	0.04	50.00	0.05	0.0897	0.0088	28	36	43.75	151.73	199.00	
10 11/6/13 9:00:00 AM	0.08	0.04	50.00	0.05	0.0808	0.0078	24	33	42.11	150.58	199.00	

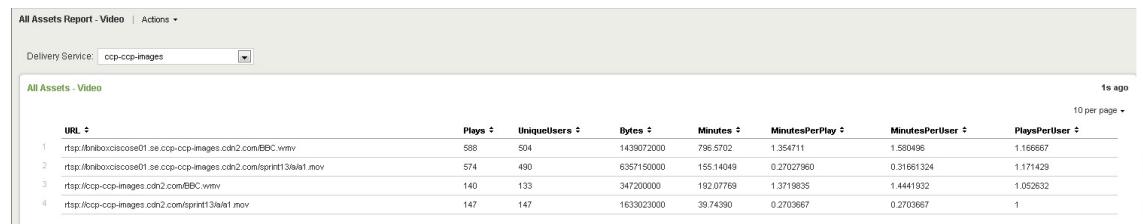
361578

Table 87: Delivery Service Traffic [1 hour Intervals] Table & Description

Table	Description
Delivery Service Traffic [1 hour Intervals]	Illustrates the delivery service traffic details for a selected delivery service in 1 hour intervals.
Information	The information within this table is: _time, peak bandwidth, mean bandwidth, bandwidth peak mean ratio, 95%ile bandwidth, total GB delivered, total GB ingested, cache hits, cache misses, cache hit ratio, mean sessions, peak sessions, sessions peak mean ratio, 95%ile sessions, total requests, successful requests, unsuccessful requests, 4xx errors, 5xx errors, success %.

Choose the required delivery service from the **Delivery Service** drop-down list located above the chart.

All Assets - Video



The screenshot shows the 'All Assets Report - Video' interface. At the top, there's a header bar with 'All Assets Report - Video' and 'Actions'. Below it is a dropdown labeled 'Delivery Service' set to 'ccp-ccp-images'. The main area is titled 'All Assets - Video' and contains a table of data. The table has columns: URL, Plays, UniqueUsers, Bytes, Minutes, MinutesPerPlay, MinutesPerUser, and PlaysPerUser. The data shows four rows of video assets with their respective metrics. At the bottom right of the table, there are filters for '1s ago' and '10 per page'.

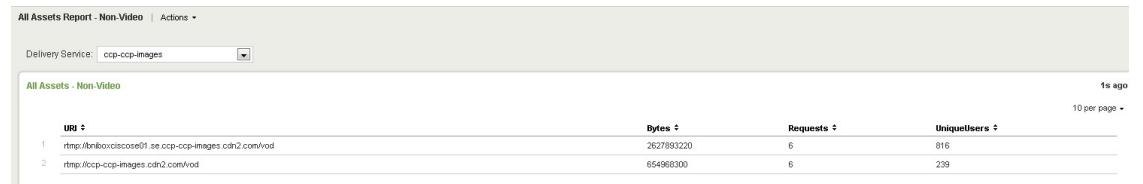
URL	Plays	UniqueUsers	Bytes	Minutes	MinutesPerPlay	MinutesPerUser	PlaysPerUser
1 rtsp://lnibox01ccose01.se.ccp-ccp-images.cdn2.com/BBC.wmv	588	504	143972000	798.5702	1.354711	1.580496	1.166687
2 rtsp://lnibox01ccose01.se.ccp-ccp-images.cdn2.com/sprint13/aef1.mov	574	490	635715000	155.14049	0.27027960	0.31661324	1.171429
3 rtsp://ccp-ccp-images.cdn2.com/BBC.wmv	140	133	347200000	192.07769	1.3719835	1.4441932	1.052632
4 rtsp://ccp-ccp-images.cdn2.com/sprint13/aef1.mov	147	147	1633020000	39.74390	0.2703667	0.2703667	1

Table 88: All Assets - Video Table & Description

Table	Description
All Assets - Video	Illustrates various metrics for video assets for the past week.
Information	The information within this table is: URL, Plays, UniqueUsers, Bytes, Minutes, MinutesPerPlay, MinutesPerUser, and PlaysPerUser.

Choose the required delivery service from the **Delivery Service** drop-down list located above the chart.

All Assets - Non-Video



The screenshot shows the 'All Assets Report - Non-Video' interface. At the top, there's a header bar with 'All Assets Report - Non-Video' and 'Actions'. Below it is a dropdown labeled 'Delivery Service' set to 'ccp-ccp-images'. The main area is titled 'All Assets - Non-Video' and contains a table of data. The table has columns: URL, Bytes, Requests, and UniqueUsers. The data shows two rows of non-video assets with their respective metrics. At the bottom right of the table, there are filters for '1s ago' and '10 per page'.

URL	Bytes	Requests	UniqueUsers
1 rtsp://lnibox01ccose01.se.ccp-ccp-images.cdn2.com/vod	2627893220	6	816
2 rtsp://ccp-ccp-images.cdn2.com/vod	654968300	6	239

361575

361574

Table 89: All Assets - Non-Video Table & Description

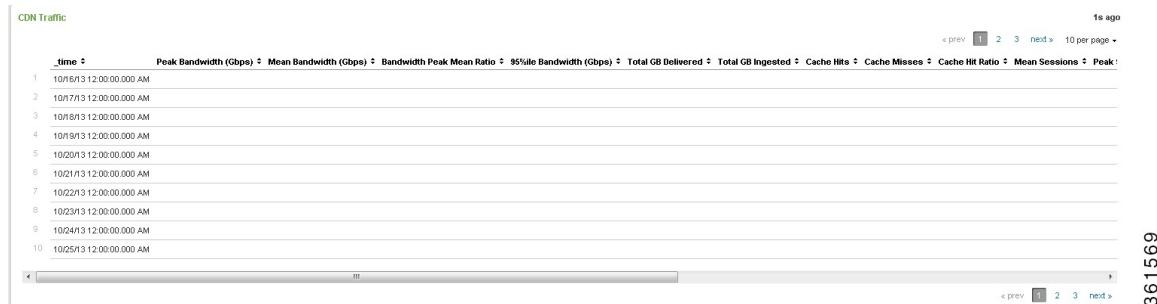
Table	Description
All Assets - Non-Video	Illustrates various metrics for non-video assets for the past week.
Information	The information within this table is: URL, Bytes, Requests, and UniqueUsers.

Choose the required delivery service from the **Delivery Service** drop-down list located above the chart.

Monthly

To view the daily reports, select **Monthly** from the Reports main page.

CDN Traffic [1 day Intervals]



The screenshot shows a table titled "CDN Traffic" with 10 rows of data. The columns include: _time, Peak Bandwidth (Gbps), Mean Bandwidth (Gbps), Bandwidth Peak Mean Ratio, 95%ile Bandwidth (Gbps), Total GB Delivered, Total GB Ingested, Cache Hits, Cache Misses, Cache Hit Ratio, Mean Sessions, Peak Sessions, and Peak. The data shows traffic for each day from October 16 to October 25, 2013, at 12:00:00 AM. The table has navigation links for previous, next, and page numbers.

_time	Peak Bandwidth (Gbps)	Mean Bandwidth (Gbps)	Bandwidth Peak Mean Ratio	95%ile Bandwidth (Gbps)	Total GB Delivered	Total GB Ingested	Cache Hits	Cache Misses	Cache Hit Ratio	Mean Sessions	Peak Sessions	Peak
10/16/13 12:00:00:000 AM												
10/17/13 12:00:00:000 AM												
10/18/13 12:00:00:000 AM												
10/19/13 12:00:00:000 AM												
10/20/13 12:00:00:000 AM												
10/21/13 12:00:00:000 AM												
10/22/13 12:00:00:000 AM												
10/23/13 12:00:00:000 AM												
10/24/13 12:00:00:000 AM												
10/25/13 12:00:00:000 AM												

Table 90: CDN Traffic [1 day Intervals] Table & Description

Table	Description
CDN Traffic [1 hour Intervals]	Illustrates CDN Traffic for the past month in 1 day intervals.
Information	The information within this table is: _time, peak bandwidth, mean bandwidth, bandwidth peak mean ratio, 95%ile bandwidth, total GB delivered, total GB ingested, cache hits, cache misses, cache hit ratio, mean sessions, peak sessions, sessions peak mean ratio, 95%ile sessions, total requests, successful requests, unsuccessful requests, 4xx errors, 5xx errors, success %.

Traffic Summary by Delivery Servers

Traffic Summary by Delivery Servers											1s ago	
	Delivery Server	Peak Bandwidth (Gbps)	Mean Bandwidth (Gbps)	Bandwidth Peak Mean Ratio	95%ile Bandwidth (Gbps)	Total GB Delivered	Total GB Ingested	Cache Hits	Cache Misses	Cache Hit Ratio	Mean Sessions	Peak Session
1	tnboxxiscose01	0.62	0.40	64.52	0.41	488.82	153.11	140335	209336	40.13	1494.38	1772
2	tnboxxiscose02	0.65	0.40	61.54	0.41						1495.91	1799
3	tnboxxiscose03	0.93	0.34	36.56	0.34						1269.67	2805
4	tnboxxiscose04	1.00	0.63	63.00	0.65						2390.63	2784

Table 91: Traffic Summary by Delivery Servers Table & Description

Table	Description
Traffic Summary by Delivery Servers	Illustrates the traffic summary for the past month for each delivery server.
Information	The information within this table is: delivery server, peak bandwidth, mean bandwidth, bandwidth peak mean ratio, 95%ile bandwidth, total GB delivered, total GB ingested, cache hits, cache misses, cache hit ratio, mean sessions, peak sessions, sessions peak mean ratio, 95%ile sessions, total requests, successful requests, unsuccessful requests, 4xx errors, 5xx errors, success %.

Traffic Summary by Delivery Services

Traffic Summary by Delivery Services													1s ago
	Delivery Service	Peak Bandwidth (Gbps)	Mean Bandwidth (Gbps)	Bandwidth Peak Mean Ratio	95%ile Bandwidth (Gbps)	Total GB Delivered	Total GB Ingested	Cache Hits	Cache Misses	Cache Hit Ratio	Mean Sessions	Peak Session	
1	csp-csp-Images	0.08	0.04	50.00	0.04	15.01	1.49	4610	6139	42.89	149.29		
2	csp-cmc-smooth-localpool01-linear	0.16	0.08	50.00	0.09	5.68	0.67	2297	762	75.09	298.33		
3	csp-cmc-smooth-localpool02-linear	0.08	0.04	50.00	0.04	13.53	0.00	6142	0	100.00	149.14		
4	csp-cmc-smooth-pool01is01	0.16	0.08	50.00	0.08	10.56	0.84	4605	3074	59.97	300.57		
5	csp-cmc-smooth-pool01is02	0.16	0.08	50.00	0.08	5.01	3.81	768	9987	7.14	299.17		
6	csp-woburn-smooth-live01	0.08	0.04	50.00	0.04	16.65	3.13	4607	9212	33.34	149.80		
7	csp-woburn-smooth-live02	0.16	0.08	50.00	0.08	7.19	2.17	769	8913	10.01	299.32		
8	csp-woburn-smooth-vod01	0.08	0.04	50.00	0.05	7.36	2.35	768	6909	10.00	150.09		
9	csp2-csp2-images	0.08	0.04	50.00	0.04	15.04	1.50	4608	6144	42.88	148.74		
10	csp2-cmc-smooth-localpool01-linear	0.08	0.04	50.00	0.04	5.69	0.88	2305	769	74.98	149.55		

Table 92: Traffic Summary by Delivery Services Table & Description

Table	Description
Traffic Summary by Delivery Services	Illustrates the traffic summary for the past month for each delivery service.

Table	Description
Information	The information within this table is: delivery service, peak bandwidth, mean bandwidth, bandwidth peak mean ratio, 95%ile bandwidth, total GB delivered, total GB ingested, cache hits, cache misses, cache hit ratio, mean sessions, peak sessions, sessions peak mean ratio, 95%ile sessions, total requests, successful requests, unsuccessful requests, 4xx errors, 5xx errors, success %.

Delivery Server Traffic [1 day Intervals]

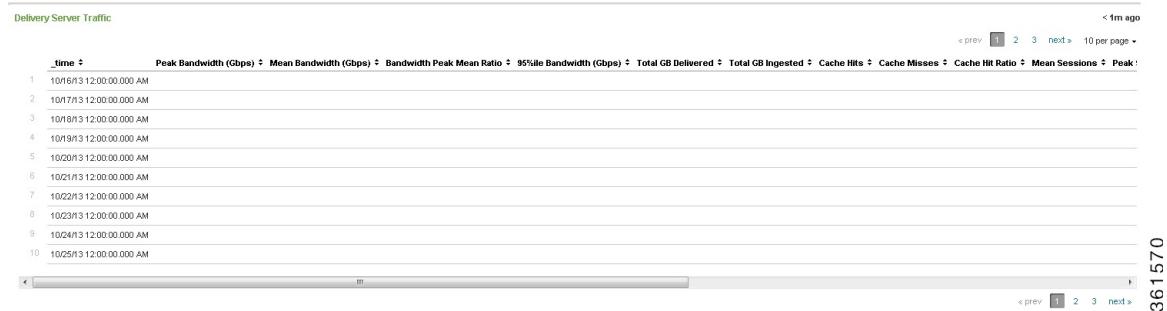


Table 93: Delivery Server Traffic [1 day Intervals] Table & Description

Table	Description
Delivery Server Traffic [1 hour Intervals]	Illustrates the delivery server traffic details for a selected delivery server in 1 day intervals
Information	The information within this table is: _time, peak bandwidth, mean bandwidth, bandwidth peak mean ratio, 95%ile bandwidth, total GB delivered, total GB ingested, cache hits, cache misses, cache hit ratio, mean sessions, peak sessions, sessions peak mean ratio, 95%ile sessions, total requests, successful requests, unsuccessful requests, 4xx errors, 5xx errors, success %.

Choose the required delivery server from the **Delivery Server** drop-down located above the chart.

Delivery Service Traffic [1 day Intervals]

Delivery Service Traffic | Actions ▾

Delivery Service: ccp-ccp-images

Delivery Service Traffic

1s ago

	_time	Peak Bandwidth (Gbps)	Mean Bandwidth (Gbps)	Bandwidth Peak Mean Ratio	95%ile Bandwidth (Gbps)	Total GB Delivered	Total GB Ingested	Cache Hits	Cache Misses	Cache Hit Ratio	Mean Sessions	Peak Sessions	Peak Requests
1	10/16/13 12:00:00:000 AM												
2	10/17/13 12:00:00:000 AM												
3	10/18/13 12:00:00:000 AM												
4	10/19/13 12:00:00:000 AM												
5	10/20/13 12:00:00:000 AM												
6	10/21/13 12:00:00:000 AM												
7	10/22/13 12:00:00:000 AM												
8	10/23/13 12:00:00:000 AM												
9	10/24/13 12:00:00:000 AM												
10	10/25/13 12:00:00:000 AM												

361571

Table 94: Delivery Service Traffic [1 day Intervals] Table & Description

Table	Description
Delivery Service Traffic [1 hour Intervals]	Illustrates the delivery service traffic details for a selected delivery service in 1 day intervals.
Information	The information within this table is: _time, peak bandwidth, mean bandwidth, bandwidth peak mean ratio, 95%ile bandwidth, total GB delivered, total GB ingested, cache hits, cache misses, cache hit ratio, mean sessions, peak sessions, sessions peak mean ratio, 95%ile sessions, total requests, successful requests, unsuccessful requests, 4xx errors, 5xx errors, success %.

Choose the required delivery service from the **Delivery Service** drop-down list located above the chart.

All Assets - Video

All Assets Report - Video | Actions ▾

Delivery Service: ccp-ccp-images

All Assets - Video

1s ago

	URL	Plays	UniqueUsers	Bytes	Minutes	MinutesPerPlay	MinutesPerUser	PlaysPerUser
1	rtmp://anboxccp01.se.ccp-ccp-imagescdn2.com@BC.wmv	588	504	1439072000	796.5702	1.354711	1.580496	1.166687
2	rtmp://anboxccp01.se.ccp-ccp-imagescdn2.com@sprint13/a/1.mov	574	490	635715000	155.14049	0.27027960	0.31681324	1.171429
3	rtmp://ccp-ccp-imagescdn2.com@BC.wmv	140	133	94720000	192.07769	1.3719835	1.4441932	1.052632
4	rtmp://ccp-ccp-imagescdn2.com@sprint13/a/1.mov	147	147	1633023000	39.74398	0.2703667	0.2703667	1

361568

Table 95: All Assets - Video Table & Description

Table	Description
All Assets - Video	Illustrates various metrics for video assets for the past month.

Table	Description
Information	The information within this table is: URL, Plays, UniqueUsers, Bytes, Minutes, MinutesPerPlay, MinutesPerUser, and PlaysPerUser.

Choose the required delivery service from the **Delivery Service** drop-down list located above the chart.

All Assets - Non-Video

The screenshot shows a web-based reporting interface titled "All Assets Report - Non-Video". At the top, there is a dropdown menu labeled "Delivery Service" with the value "cdn-cdp-images" selected. Below the header, the title "All Assets - Non-Video" is displayed. A table follows, with columns for URL, Bytes, Requests, and UniqueUsers. The table contains two rows of data:

URL	Bytes	Requests	UniqueUsers
1 rtmp://bnibox01se.cdp-images.cdn2.com/vod	2627983220	6	816
2 rtmp://cdn-cdp-images.cdn2.com/vod	654968300	6	239

At the bottom right of the table area, there is a timestamp "1s ago" and a link "10 per page ▾". On the far right edge of the screenshot, the number "361567" is visible.

Table 96: All Assets - Non-Video Table & Description

Table	Description
All Assets - Non-Video	Illustrates various metrics for non-video assets for the past month.
Information	The information within this table is: URL, Bytes, Requests, and UniqueUsers.

Choose the required delivery service from the **Delivery Service** drop-down list located above the chart.

Custom Searches and Reports

This feature displays all the custom saved searches and reports created by users. You can view both, public and private reports created by you. However, you cannot view the private reports saved by another user. In this feature, only the Delete and Refresh options are available. You will not be able to modify any saved reports. To view custom reports, perform the following:

From the main page, choose **Analytics** > **Custom Searches and Reports**.

The screenshot shows the "Analytics / Custom Search and Reports" interface. On the left, there is a sidebar with a search bar containing "cdn" and a tree panel showing "My Searches and Reports" with items "cdn" and "cdntran". The main area has a search bar with placeholder "enter search here..." and a timestamp "All time". Below the search bar, there are sections for "How to Search" (with links to "Documentation" and "Tutorial") and "What to Search" (showing statistics: 787,136 Events INDEXED, 13 days ago EARLIEST EVENT, 2 minutes ago LATEST EVENT). There is also a "Data Summary" button.

**Note**

- If you upgrade VDS-SM from version 3.3 to 3.4 or 3.2 to 3.4, then the public custom reports created in earlier version will not be migrated to the upgraded version.
- The CustomSearches app upgrade should not be performed along with the system upgrade. It should be upgraded separately.

Creating a Custom Report

To create custom reports, perform the following steps:

Step 1 Choose **Analytics > Custom Searches and Reports**.

Step 2 In the **Search** field, enter the query for which you want to generate a report and click in the right pane.

Step 3 Choose **Save As > Report**.

The dialog box is titled "Save As Report". It contains fields for "Title" (empty), "Description" (optional), "Visualization" (Map selected), and "Time Range Picker" (Yes selected). At the bottom are "Cancel" and "Save" buttons.

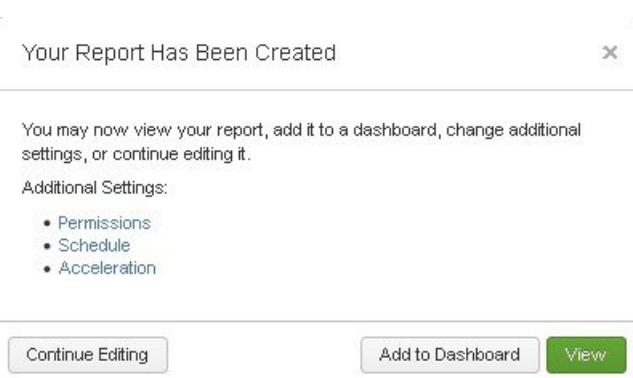
The **Save As Report** panel appears.

Step 4 Provide the report Title, and Description (optional).

Step 5 Click the preferred Visualization button on how you want the report to appear.

Step 6 Click Yes to add Time Range Picker, and click No to create a report without time range picker.

Step 7 Click Save.



The **Your Report Has Been Created** panel appears.

Step 8

Click **View** to see the created report.

Click **Add to Dashboard** to create a custom dashboard for given search query (see Adding a Custom Dashboard topic in [Custom Dashboards, on page 130](#)), or click **Continue Editing** to navigate to the search page.

Remember

Created custom report will be added to the tree view only after clicking  in the left pane.

Deleting a Custom Report

To delete a custom report, perform the following steps:

Step 1

Choose **Analytics > Custom Searches and Reports**.

Step 2

From the left pane, select the custom report, which you want to delete and click . The delete confirmation dialog box appears.

Step 3

Click **Yes** to permanently delete the custom report, or click **No** to cancel the deletion.

Custom Dashboards

This feature allows the CDN operators to create and save custom dashboards using the search application. You can view the list of all custom dashboards created by you and the public dashboards of other users.

To access this feature, from the main page, choose **Analytics > Custom Dashboards**. You can view the custom dashboards in the left pane. Click the arrow next to **My Dashboards** and select the custom dashboard, which you want to view. The details will be displayed in the right pane.

This feature allows you to create, delete, and refresh custom dashboards. By default, the custom dashboards are grouped by username.

**Note**

- If you manually modify the savedsearches.conf file in the JS node, the savedsearches.conf file under the SH node will be updated and thereby, all the searches will be deleted.
- The CustomSearches app upgrade should not be performed along with the system upgrade. It should be upgraded separately.

Adding a Custom Dashboard

To add a custom dashboard, perform the following steps:

Step 1 Choose Analytics > Custom Dashboards.

Step 2 Click .

Step 3 In the right pane, enter the query in the Search field and click .

Step 4 Choose Save As > Dashboard Panel.

Save As Dashboard Panel ×

Dashboard	<input type="button" value="New"/>	<input type="button" value="Existing"/>
Dashboard Title	optional	
Dashboard ID		
Can only contain letters, numbers and underscores.		
Dashboard Description	optional	
Dashboard Permissions	<input type="button" value="Private"/>	<input type="button" value="Shared in App"/>
Panel Title	optional	
Panel Powered By	<input type="text" value="Inline Search"/>	
Panel Content	<input type="button" value="Statistics"/>	<input type="button" value="Column"/>
<input type="button" value="Cancel"/> <input style="background-color: #0070C0; color: white; font-weight: bold; border: 1px solid #0070C0; border-radius: 5px; padding: 2px 10px; margin-left: 10px;" type="button" value="Save"/>		

The **Save As Dashboard Panel** appears.

Step 5 To create a new custom dashboard, perform the following:

- a) Click **New**.
- b) Dashboard Title (Optional)—Enter the custom dashboard title.

Note We recommend that you always start the custom dashboard names with the word Custom (or any word other than dashboard). The usage of Custom helps the users to add panels to existing custom dashboard.

- c) Dashboard ID—Enter the custom dashboard ID.

Note The custom dashboard ID can contain only alpha numeric characters and underscores.

- d) Dashboard Description (Optional)—Enter the custom dashboard description.

- e) Dashboard Permissions—Select the custom dashboard permissions as **Private** or **Shared in App**.

- **Private**—Only you can view and edit the custom dashboard.

- **Shared in App**—All users can view the created custom dashboard.

Note You can edit the custom dashboard based on the role.

The following table provides the role and permission details:

Table 97: Permission Details

Role¹	Role based Permissions				
	Admin	User	Power	Can_delete	Splunk_System_Role
Admin	Edit, Delete, Edit Permissions and Clone	Clone	Edit, Delete and Clone	No	Edit, Delete , Edit Permissions and Clone
User	Sharing option is not available				
Power	Edit, Delete , Edit Permissions and Clone	Clone	Edit, Delete , Edit Permissions and Clone	No	Edit, Delete , Edit Permissions and Clone
Can_delete	Search is not possible				
Splunk_System_Role	Edit, Delete , Edit Permissions and Clone	Clone	Edit, Delete and Clone	No	Edit, Delete , Edit Permissions and Clone

¹ Refers to the role of the user who created the custom dashboard.

- f) Panel Title (Optional)—Enter the panel title.

- g) Panel Content—Select the panel content as **Statistics** or **Column**.

- **Statistics**—Displays data in table format.

- **Column**—Displays data as column chart.

- h) Click **Save**.

Step 6 To add a panel in an existing custom dashboard, in the **Save As Dashboard Panel** dialog box perform the following:

- a) Click **Existing**.

- b) From the drop-down list, choose the required custom dashboard.

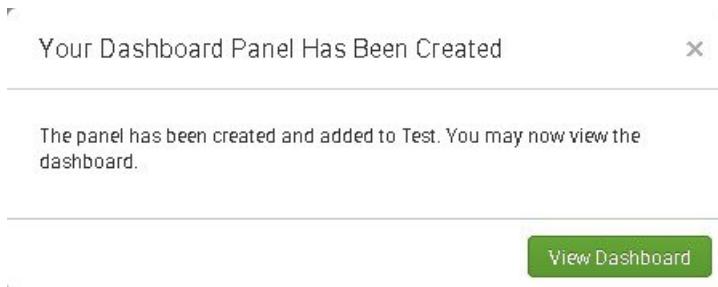
Note You can only add panels to the custom dashboards that are created using the custom dashboard interface.

c) Panel Content—Select the panel content as **Statistics** or **Column**.

- **Statistics**—Displays data in table format.
- **Column**—Displays data as column chart.

d) Click **Save**.

Your Dashboard Panel Has Been Created dialog box appears.



Step 7 Click View Dashboard.

Remember Refresh the custom dashboards by clicking in the left pane to view the created custom dashboard name in the tree view.

Note The respective searches will be saved under Custom Searches and Reports.

Deleting a Custom Dashboard

To delete a custom dashboard, perform the following steps:

Step 1 Choose Analytics > Custom Dashboards.

Step 2 From the left pane, select the custom dashboard, which you want to delete.

Step 3 Choose **Delete** from the **Edit** drop-down list.

The Delete confirmation dialog box appears.

Step 4 Click **Delete**.

Note If you are deleting one or more searches that is being used by one or more custom dashboards, then those custom dashboards will not work. Also, the search saved as part of custom dashboards will have to be deleted manually.

Remember Deleted custom dashboard will be removed from the tree view only after clicking in the left pane.

Content

In this feature, the users will be able to analyze the data, based on the content title. They can also generate viewership report, based on various dimensions.

Analyze by Content Title

This feature provides a platform for the users to analyze individual asset (content title), based on various metrics such as Usage, Audience, QoS, and Errors.

To analyze the content title, perform the following steps:

Step 1

From the main page, choose **Analytics > Content > Analyze by Content Title**.

Title	Genre	Resolution
wmtest2.cdn2.net:BigBuckBunny.ism	-	-
wmt-test2.cdn2.net:BigBuckBunny.ism	-	-
lisor032.cmc.co.ndcwest.net:BigBuckBunny.ism	-	-
cim3-test-is-02.cdn2.net:BigBuckBunny.ism	-	-
cim3-cim3-smooth.cdn2.net:BigBuckBunny.ism	-	-

Step 2

Choose the desired delivery service and the time range from the respective drop-down lists, and enter the search asset name in the Search Asset name field. Then, click **Search**.

Note Entering certain search asset name values such as space and individual characters in the **Search Asset Name** text box will display large results. This may impact the system's performance.

Title	Genre	Resolution
wmtest2.cdn2.net:BigBuckBunny.ism	-	-
wmt-test2.cdn2.net:BigBuckBunny.ism	-	-
lisor032.cmc.co.ndcwest.net:BigBuckBunny.ism	-	-
cim3-test-is-02.cdn2.net:BigBuckBunny.ism	-	-
cim3-cim3-smooth.cdn2.net:BigBuckBunny.ism	-	-
wmtest2.cdn2.net:BigBuckBunny.ism	-	-
wmt-test2.cdn2.net:BigBuckBunny.ism	-	-
lisor032.cmc.co.ndcwest.net:BigBuckBunny.ism	-	-
cim3-test-is-02.cdn2.net:BigBuckBunny.ism	-	-
cim3-cim3-smooth.cdn2.net:BigBuckBunny.ism	-	-

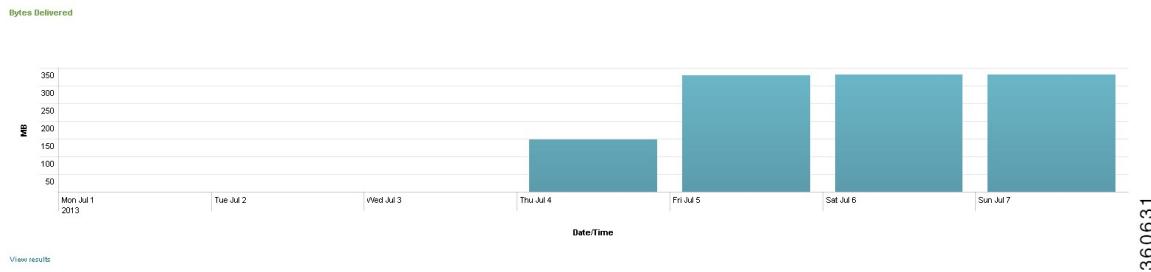
Step 3

From the list of unique content titles that are displayed in a tabular format, choose the desired Title. Different tabs such as Usage, Audience, QoS, and Errors for that particular title are displayed. Click the respective tabs to view the corresponding charts.

The different charts are explained in detail here.

Usage

Bytes Delivered



The following table describes the information in the chart:

Table 98: Bytes Delivered Chart & Description

Chart	Description
Bytes Delivered	Illustrates the bytes delivered (MB) over time for the given content title.
Chart Information	The information within this chart is shown in a column graph with the Date/Time along the X-axis and the bytes delivered in MB along the Y-axis.
Formula	The formula used to derive this graph is: the total bytes delivered for the given content title plotted over time.
Filters	This chart uses Delivery Service, and Time Range (Previous day and Last 7 days), as filters.

Bytes Delivered by Delivery Server

Bytes Delivered by Delivery Server

Delivery Server	MB
CDS3-SE	347.05

[View results](#)

The following table describes the information in the tabular column:

Table 99: Bytes Delivered by Delivery Server Table & Description

Table	Description
Bytes Delivered by Delivery Server	Illustrates the bytes delivered (MB) per delivery server for the given content title.
Information	The information within this table are Delivery Server and MB.

Table	Description
Formula	The formula used is: total bytes delivered for the given content title in each delivery server.
Filters	This table uses Delivery Service, and Time Range (Previous day and Last 7 days), as filters.

Bytes Delivered by City

Bytes Delivered by City

City	MB	View results	360628
1 Beijing	569.64		
2 Mountain View	570.38		

The following table describes the information in the tabular column:

Table 100: Bytes Delivered by City Table & Description

Table	Description
Bytes Delivered by City	Illustrates the bytes delivered (MB) per city for the given content title.
Information	The information within this table are City and MB.
Formula	The formula used is: total bytes delivered for the given content title in each city.
Filters	This table uses Delivery Service, and Time Range (Previous day and Last 7 days), as filters.

Note The city will be resolved only for public IPs. IPs which cannot be resolved by MaxMind will not be displayed.

Bytes Delivered by ISP and Net Speed

Bytes Delivered by ISP and Net Speed

ISP	MB	View results	360630
1 Data Communication Division	569.64		
2 Google	570.38		

The following table describes the information in the tabular column:

Table 101: Bytes Delivered by ISP and Net Speed Table & Description

Table	Description
Bytes Delivered by ISP and Net Speed	Illustrates the bytes delivered (MB), grouped by ISP or Net Speed for the given content title.
Table Information	The information within this table are ISP or Net Speed and MB.
Formula	The formula used is: total bytes delivered for the given content title grouped by the client ISP or Net Speed.
Filters	This table uses Delivery Service, and Time Range (Previous day and Last 7 days), as filters.

Note For the Client IPs which are not public, unknown value will be displayed.

Bytes Delivered by Client Type



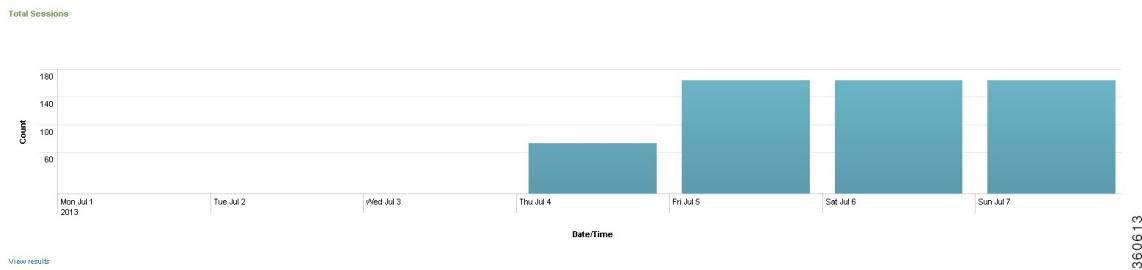
The following table describes the information in the tabular column:

Table 102: Bytes Delivered by Client Type Table & Description

Table	Description
Bytes Delivered by Client Type	Illustrates the bytes delivered (MB) per client type for the given content title.
Table Information	The information within this table are Client Type and MB.
Formula	The formula used is: total bytes delivered for the given content title grouped by the client type.
Filters	This table uses Delivery Service, and Time Range (Previous day and Last 7 days), as filters.

Audience

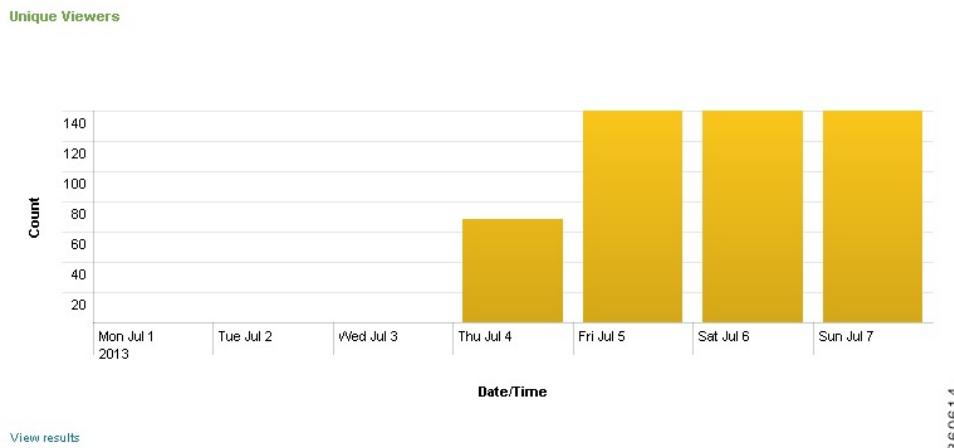
Total Sessions

Content

The following table describes the information in the chart:

Table 103: Total Sessions Chart & Description

Chart	Description
Total Sessions	Illustrates the number of sessions over time for the given content title.
Chart Information	The information within this chart is shown in a column graph with the Date/Time along the X-axis and the Total Sessions Count along the Y-axis.
Formula	The formula used to derive this graph is: the total number of sessions for a given content title plotted over time.
Filters	This chart uses Delivery Service, and Time Range (Previous day and Last 7 days), as filters.

Unique Viewers

The following table describes the information in the chart:

Table 104: Unique Viewers Chart & Description

Chart	Description
Unique Viewers	Illustrates the number of unique viewers over time for the given content title.
Chart Information	The information within this chart is shown in a column graph with the Date/Time along the X-axis and the Unique Viewers count along the Y-axis.
Formula	The formula used to derive this graph is: the number of unique viewers for the given content title plotted over time.
Filters	This chart uses Delivery Service, and Time Range (Previous day and Last 7 days), as filters.

Viewers by Download Size and Session Duration



The following table describes the information in the tabular column:

Table 105: Viewers by Download Size and Session Duration Table & Description

Table	Description
Viewers by Download Size and Session Duration	Illustrates the number of sessions grouped by download size or duration for the given content title.
Table Information	The information within this table are Download Size, Session Duration, and Count.
Formula	The formula used is: the number of viewers bucketed by the download size in MB, for the given content title. The formula used for Duration is: the number of viewers bucketed by the average session duration for the given content title.
Filters	This table uses Delivery Service, and Time Range (Previous day and Last 7 days), as filters.

Viewers by ISP and Net Speed

Viewers by ISP and Net Speed

ISP Net Speed

	ISP	Count
1	Data Communication Division	72
2	Google	68

[View results](#)

360617

The following table describes the information in the tabular column:

Table 106: Viewers by ISP and Net Speed Table & Description

Table	Description
Viewers by ISP and Net Speed	Illustrates the number of sessions grouped by ISP and Net Speed for the given content title.
Table Information	The information within this table are ISP, Net Speed and the Viewer count.
Formula	The formula used is: the number of viewers grouped by client ISP/Net Speed for the given content title.
Filters	This table uses Delivery Service, and Time Range (Previous day and Last 7 days), as filters.

Note Other than public IPs, "unknown" value will be displayed.

Viewers by City

Viewers by City

	City	Count
1	Beijing	72
2	Mountain View	68

[View results](#)

360615

The following table describes the information in the tabular column:

Table 107: Viewers by City Table & Description

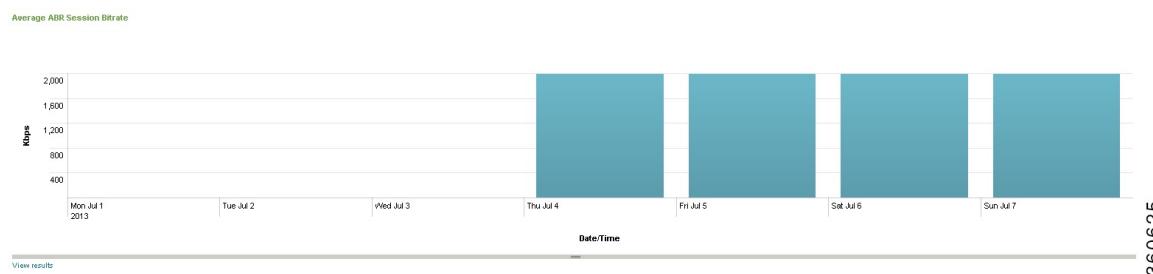
Table	Description
Viewers by City	Illustrates the number of viewers per city for the given content title.
Table Information	The information within this table are City and Count.
Formula	The formula used is: the number of viewers in each city for the given content title.

Table	Description
Filters	This table uses Delivery Service, and Time Range (Previous day and Last 7 days), as filters.

Note The city will be resolved only for public IPs. IPs which cannot be resolved by MaxMind will not be displayed.

QoS

Average ABR Session Bitrate



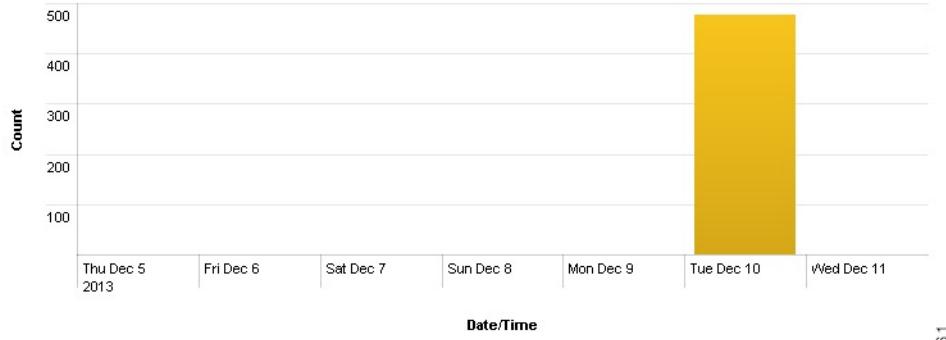
The following table describes the information in the chart:

Table 108: Average ABR Session Bitrate Chart & Description

Chart	Description
Average ABR Session Bitrate	Illustrates the average ABR session bitrate (Kbps) over time for the given content title.
Chart Information	The information within this chart is shown in a column graph with the Date/Time along the X-axis and the ABR Session Bitrate (Kbps) along the Y-axis.
Formula	The formula used to derive this graph is: the average bitrate plotted over time for the given content title.
Filters	This chart uses Delivery Service, and Time Range (Previous day and Last 7 days), as filters.

Bitrate Oscillations

Bitrate Oscillations

[View results](#)

361761

The following table describes the information in the chart:

Table 109: Bitrate Oscillations Chart & Description

Chart	Description
Bitrate Oscillations	Illustrates the number of bitrate oscillations for the given content title over time.
Chart Information	The information within this chart is shown in a column graph with the Date/Time along the X-axis and oscillation Count along the Y-axis.
Formula	The formula used to derive this graph is: the number of bitrate shift events for a given content title.
Filters	This chart uses Delivery Service, and Time Range (Previous day and Last 7 days), as filters.

Average ABR Session Bitrate by Client Type

Average ABR Session Bitrate by Client Type

Client Type	Bitrate (Kbps)
Internet Explorer 7	1987.94

[View results](#)

360623

The following table describes the information in the tabular column:

Table 110: Average ABR Session Bitrate by Client Type Table & Description

Table	Description
Average ABR Session Bitrate by Client Type	Illustrates the average ABR session bitrate (Kbps) per client type for the given content title.
Table Information	The information within this table are Client Type and Bitrate.
Formula	The formula used is: average ABR session bitrate (Kbps) for the given content title, grouped by the client type.
Filters	This table uses Delivery Service, and Time Range (Previous day and Last 7 days), as filters.

Average ABR Session Bitrate by City

Average ABR Session Bitrate by City

City	Bitrate (Kbps)
1 Beijing	1988.28
2 Mountain View	1987.59

[View results](#) 360622

The following table describes the information in the tabular column:

Table 111: Average ABR Session Bitrate by City Table & Description

Table	Description
Average ABR Session Bitrate by City	Illustrates the average ABR session bitrate (Kbps) per city for the given content title.
Table Information	The information within this table are City and Bitrate.
Formula	The formula used is: average ABR session bitrate (Kbps) for the given content title in each city.
Filters	This table uses Delivery Service, and Time Range (Previous day and Last 7 days), as filters.

Note The city will be resolved only for public IPs. IPs which cannot be resolved by MaxMind will not be displayed.

Average ABR Session Bitrate by ISP and Net Speed

Average ABR Session Bitrate by ISP and Net Speed

ISP Net Speed

ClientISP	Bitrate (Kbps)
1 Data Communication Division	1988.28
2 Google	1987.59

[View results](#)

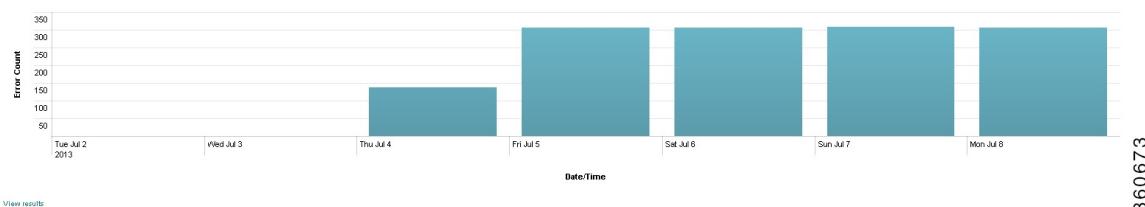
360624

The following table describes the information in the tabular column:

Table 112: Average ABR Session Bitrate by ISP and Net Speed Table & Description

Table	Description
Average ABR Session Bitrate by ISP and Net Speed	Illustrates the average ABR session bitrate (Kbps) grouped by ISP and Net Speed for the given content title.
Table Information	The information within this table are Client ISP/Net Speed and Bitrate.
Formula	The formula used is: average ABR session bitrate (Kbps) for the given content title grouped by the client ISP and Net Speed.
Filters	This table uses Delivery Service, and Time Range (Previous day and Last 7 days), as filters.

Note Other than public IPs, "unknown" value will be displayed.

Errors**4xx and 5xx Errors****4xx and 5xx Errors**

The following table describes the information in the chart:

Table 113: 4xx and 5xx Errors Chart & Description

Chart	Description
4xx and 5xx Errors	Illustrates the number of 4xx and 5xx (client and server) errors over time for the given content title.

Chart	Description
Chart Information	The information within this chart is shown in a column graph with the Date/Time along the X-axis and the Error count along the Y-axis.
Formula	The formula used to derive this graph is: the number of 4xx and 5xx errors plotted over time for the given content title.
Filters	This chart uses Delivery Service, and Time Range (Previous day and Last 7 days), as filters.

4xx and 5xx Errors

4xx and 5xx Errors

4xx Errors	5xx Errors
1 307	0

[View results](#)

The following table describes the information in the tabular column:

Table 114: 4xx and 5xx Errors Table & Description

Table	Description
4xx and 5xx Errors	Illustrates the number of 4xx and 5xx (client and server) errors for the given content title.
Table Information	The information within this table are 4xx Errors, and 5xx Errors.
Formula	The formula used is: the number of 4xx and 5xx errors occurred for the given content title.
Filters	This chart uses Delivery Service, and Time Range (Previous day and Last 7 days), as filters.

4xx and 5xx Errors by Device

4xx and 5xx Errors by Device

Device Name	4xx	5xx	
1 bniboxocisose01	0	0	360620

[View results](#)

The following table describes the information in the tabular column:

Table 115: 4xx and 5xx Errors by Device Table & Description

Table	Description
4xx and 5xx Errors by Device	Illustrates the number of 4xx and 5xx (client and server) errors per device (delivery servers and service routers) for the given content title.
Table Information	The information within this table are Device Name, 4xx, and 5xx Errors.
Formula	The formula used is: the number of 4xx and 5xx errors occurring in each device (delivery servers and service routers) for the given content title.
Filters	This table uses Delivery Service, and Time Range (Previous day and Last 7 days), as filters.

4xx and 5xx Errors by City

4xx and 5xx Errors by City

City	4xx	5xx
Addison	0	0
Alvordton	0	0
Hefei	0	0
Waldron	0	0

[View results](#)

360818

The following table describes the information in the tabular column:

Table 116: 4xx and 5xx Errors by City Table & Description

Table	Description
4xx and 5xx Errors by City	Illustrates the number of 4xx and 5xx (client and server) errors per city for the given content title.
Table Information	The information within this table are City, 4xx, and 5xx errors.
Formula	The formula used is: the number of 4xx and 5xx errors occurring in each city for the given content title.
Filters	This table uses Delivery Service, and Time Range (Previous day and Last 7 days), as filters.

4xx and 5xx Errors by Client Type

4xx and 5xx Errors by Client Type

Client Type	4xx	5xx
Firefox 4	0	0

[View results](#)

360619

The following table describes the information in the tabular column:

Table 117: 4xx and 5xx Errors by Client Type Table & Description

Table	Description
4xx and 5xx Errors by Client Type	Illustrates the number of 4xx and 5xx (client and server) errors grouped by client type for the given content title.
Table Information	The information within this table are Client Type, 4xx, and 5xx errors.
Formula	The formula used is: the number of 4xx and 5xx errors occurring in each client type for the given content title.
Filters	This table uses Delivery Service, and Time Range (Previous day and Last 7 days), as filters.

Viewership Report

This feature provides a platform for the users to generate viewership reports, based on various dimensions such as Delivery Server Group, Delivery Server, Provider, Delivery Service, Resolution, and Genre.

To generate viewership report, perform the following steps:

Step 1

From the main page, choose **Analytics > Content > Viewership Report**.

Step 2

Choose the Delivery Server Group, Delivery Server, Provider, Service Type, Delivery Service, Resolution, Genre, and Time Range Picker from the respective drop-down lists and click **Filter**.

The viewership report is displayed.

By clicking an asset name in the Viewership report, you will be navigated to the Analyze by Content Title page with the selected asset name pre-populated in the search Asset Name field.

Sessions

The screenshot shows a 'Viewership Report' section with various filters at the top. Below is a table of video titles and their counts:

Title	Count
wmttest2cdn2.net/content/kmVGrammy	4224
wmttest2cdn2.net/SmoothBunny Video	1430
wmttest2cdn2.net/Slumdog Millionaire	1226
cim-cim-progcdn2.net/content/kmVGrammy	1133
cim3-cim2-progcdn2.net/content/kmVGrammy	1122
cim2-cim2-progcdn2.net/content/kmVGrammy	1121
wmttest2cdn2.net/BBC Video	1094
wmttest2cdn2.net/splitt3/ahMission Impossible	1051
cim-cim-smoothcdn2.net/SmoothBunny Video	726
cop-cmc-smoothcdn2.net/SmoothBunny Video	725

At the bottom right, the number '360632' is displayed.

Sessions

In this feature, the users will be able to analyze the data, based on the Client IP. They can also generate session report, based on various parameters.

Analyze by Client IP

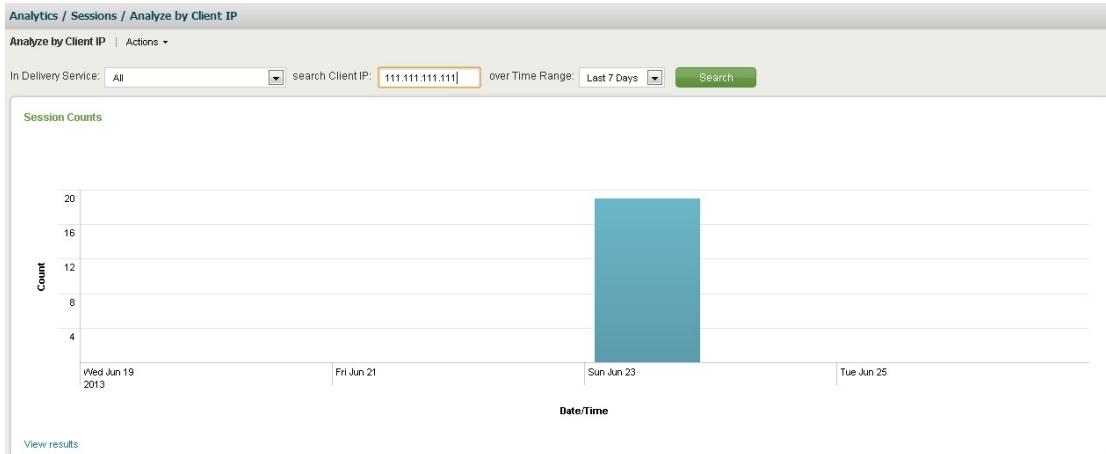
This feature provides a platform for users to analyze the individual client IP, based on various metrics such as sessions created for the IP, session duration, protocol used to serve the content, and title viewed during the session.

To access this feature, perform the following steps:

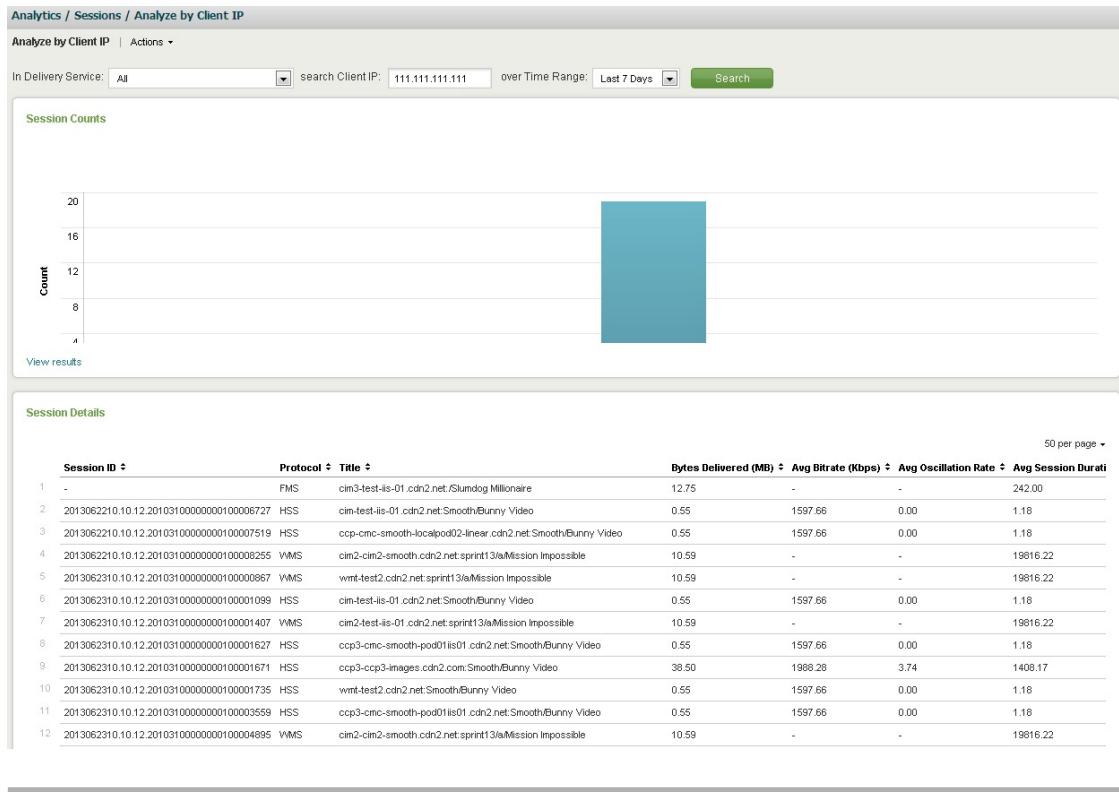
Step 1 From the main page, choose **Analytics > Sessions > Analyze by Client IP**.

Step 2 Choose the desired delivery service, select the time range from the respective drop-down lists, and enter the client IP in the search Client IP field. Click **Search**.

Note In the search Client IP field, enter the exact client IP.



- Step 3** From the sessions counts chart that is displayed, click the desired column. The session details will be displayed below the session count chart.



360582

Session Report

This feature provides a platform for the users to generate session reports, based on various parameters such as Delivery Server Group, Delivery Server, Provider, and Delivery Service.

To access this feature, perform the following steps:

- Step 1** From the main page, choose **Analytics > Sessions > Session Report**.

Step 2 Choose the Delivery Server Group, Delivery Server, Provider, Delivery Service, and Time Range Picker from the respective drop-down lists and click **Filter**.

The session report is displayed.

By clicking the client IP in the session report, you will be navigated to the Analyze by Client IP page with the selected client IP pre-populated in the search Client IP field.

Geo Analysis

Client IP	Session Count
1 10.75.224.36	443
2 10.77.246.211	52

Geo Analysis

This feature allows to analyze some core CDN metrics over geographic dimension.

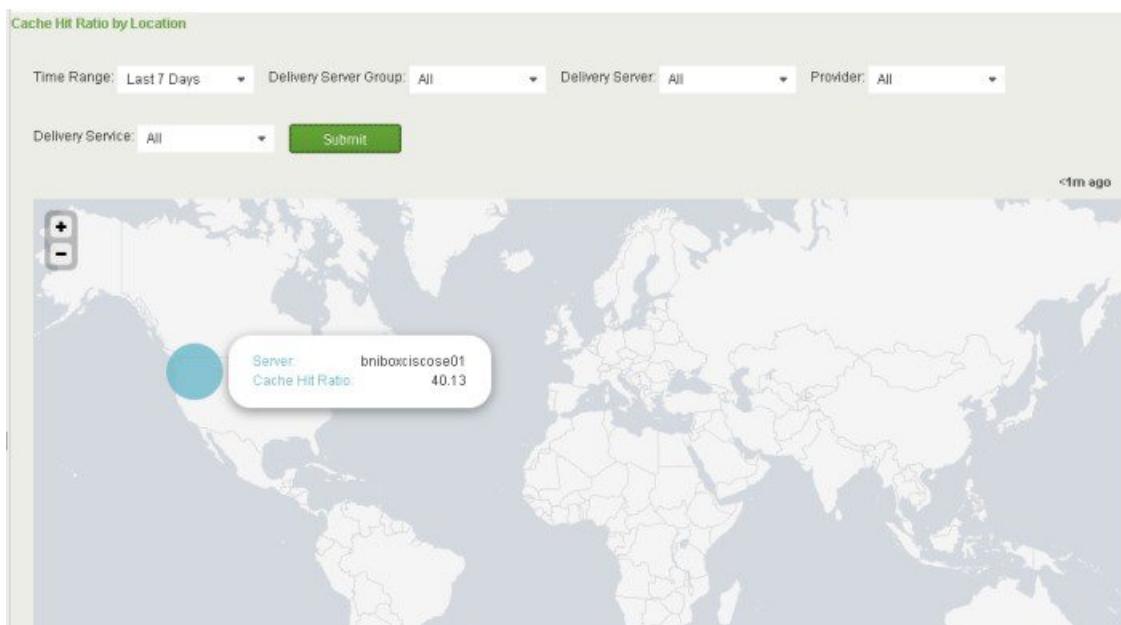
To access this feature, from the main page, choose **Analytics > Geo Analysis**. You can view Geo Analysis in the left pane. Click the arrow next to **Geo Analysis** and select the required map you want to view. The details will be displayed in the right pane.

By default, the Cache Hit Ratio by Location map is displayed.

Cache Hit Ratio by Location

The Cache Hit Ratio by Location map displays the delivery server location as points. When you mouse over a point (server location), the server name and its cache hit ratio will be displayed.

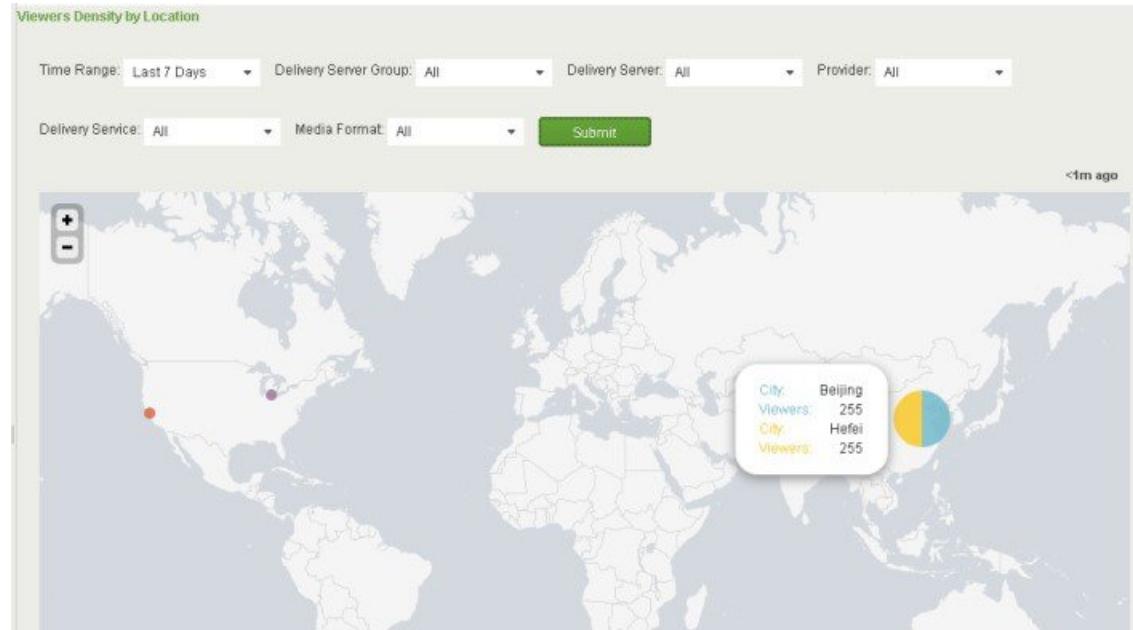
The Cache Hit Ratio by Location map uses Time Range, Delivery Server Group, Delivery Server, Provider, and Delivery Service as filters.



Viewers Density by Location

The Viewers Density by Location map displays the client locations as points. When you mouse over a point (client location), the city name and the number of viewers from that particular city will be displayed.

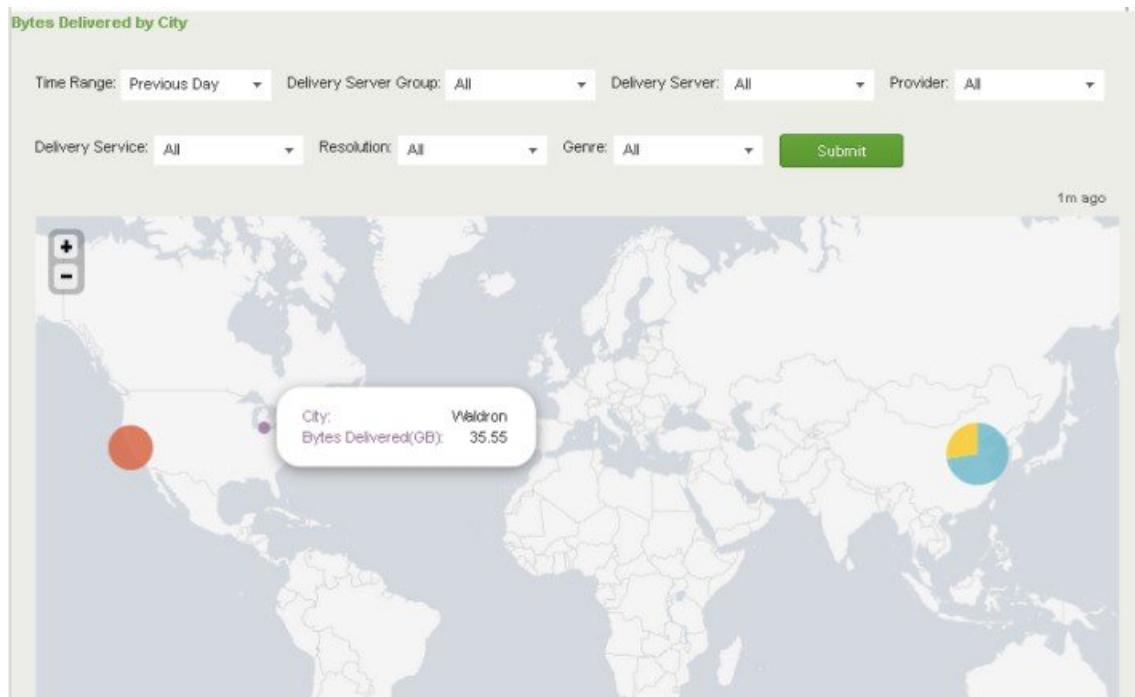
The Viewers Density by Location map uses Time Range, Delivery Server Group, Delivery Server, Provider, Delivery Service, and Media Format as filters.



Bytes Delivered by City

The Bytes Delivered by City map displays the client locations as points. When you mouse over a point (client location), the city name and the number of bytes delivered (GB) to that particular city will be displayed.

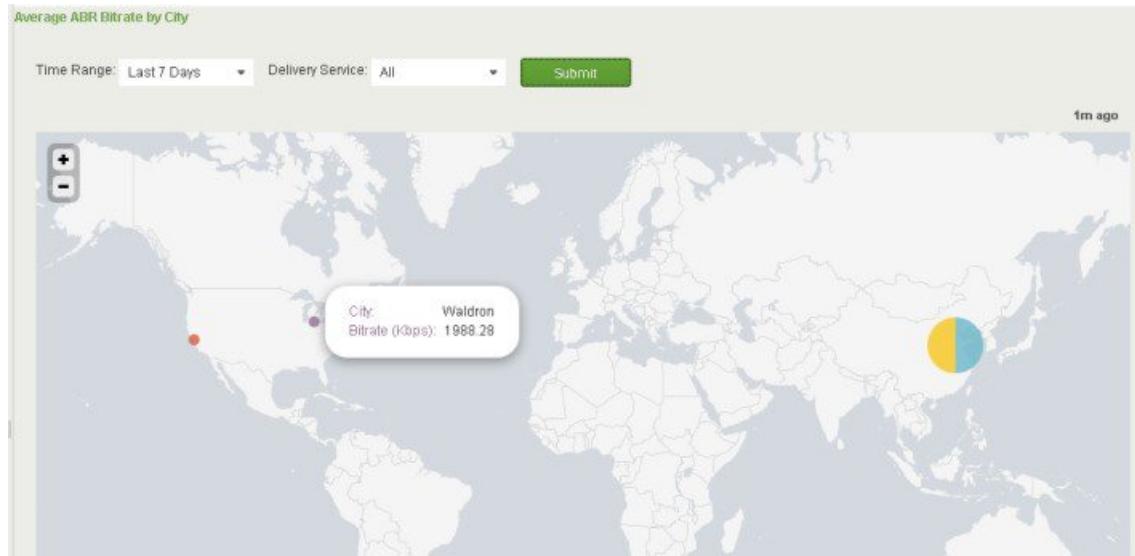
The Bytes Delivered by City map uses Time Range, Delivery Server Group, Delivery Server, Provider, Delivery Service, Resolution, and Genre as filters.



Average ABR Bitrate by City

The Average ABR Bitrate by City map displays the client locations as points. When you mouse over a point (client location), the city name and the average ABR bitrate (Kbps) in that particular city will be displayed.

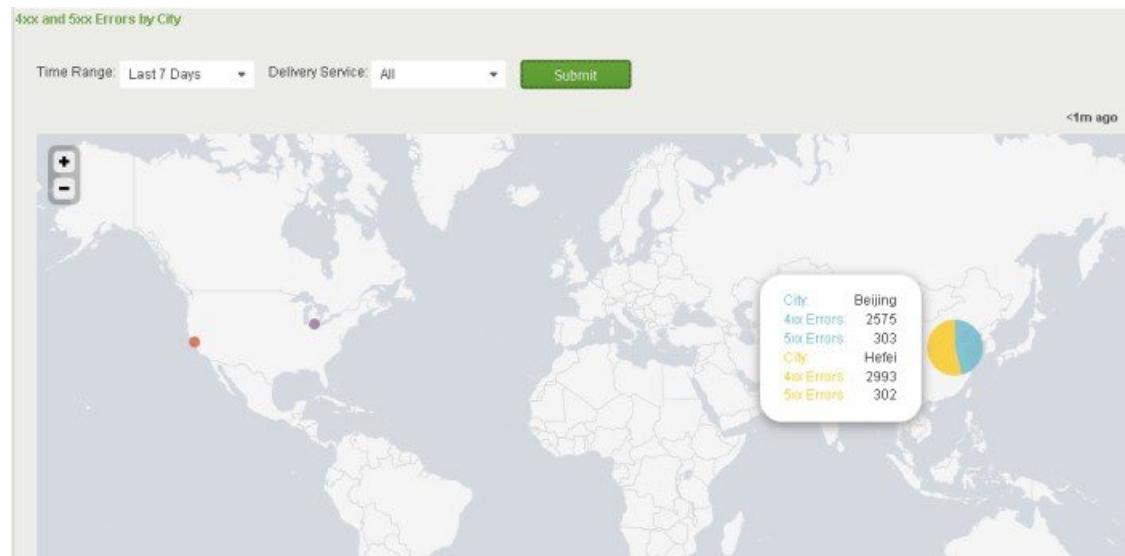
The Average ABR Bitrate by City map uses Time Range, and Delivery Service as filters.



4xx and 5xx Errors by City

The 4xx and 5xx Errors by City map displays locations of the viewers who are receiving 4xx and 5xx errors. When you mouse over a point (client location), the city name, count of 4xx (client) errors, and count of 5xx (server) errors in that particular city will be displayed.

The 4xx and 5xx Errors by City map uses Time Range, and Delivery Service as filters.



North Bound Application Programming Interface

North Bound Application Programming Interface (NB API) is a programming interface for north bound analytics systems to integrate with VDS-SM and leverage the data maintained in VDS-SM for higher level aggregation and analysis. VDS-SM provides a RESTful Web Services API to query data from VDS-SM for analytics. VDS-SM supports predefined queries/searches to query data corresponding to reports. Each predefined query/search is identified by a name, which corresponds to a particular dashboard. You can query the data by specifying the search name alone.

For example, in the CDN Traffic report, the search name is cdntraffic_daily.

To obtain the result for a query, you need to perform the HTTPS GET request using the following URL:

With Delivery Service Name

```
https://< UI  
Node IP >:8443/bnimgmt/api/analytics/search/systemdefined/< searchname >?delsvc=<delivery  
service name>
```

With Delivery Server Name

```
https://< UI  
Node IP >:8443/bnimgmt/api/analytics/search/systemdefined/< searchname >?host=<delivery  
server name>
```

Without Delivery Service or Delivery Server Name

```
https://< UI Node IP >:8443/bnimgmt/api/analytics/search/systemdefined/<searchName>
```

For example, to execute the search “cdntraffic_daily”, you need to perform GET request using the following URL:

https://<UI Node IP>:8443/bnimgmt/api/analytics/search/systemdefined/cdntraffic_daily

You need to specify the Username and Password (CDN Operator Admin or CDN Viewer) for authentication in the “Authorization” header fields of the HTTPS GET request. For example, in command line tools such as curl, provide the following command with credentials:

```
curl -k -u bniadmin:admin --request GET 'https://<UI Node IP>:8443/bnimgmt/api/analytics/search/systemdefined/cdntraffic daily'
```

In the URL, you need to pass the delivery service name or delivery server name for a search and not any special characters or space.



- Note** The URL should be exactly the same as mentioned here and they should be entered in a single line. Also, HTTPS is authenticated through self-signed OpenSSL certificate for NB API and NB API does not support HTTP.

Result Format

Analytics API provides the results in CSV format. The first line is the header line with fields, followed by the data. Following is an example of Console Output.

```
curl -k -u bniadmin:admin --request GET
```

'https://10.77.246.184:8443/bnimgmt/api/analytics/search/systemdefined/cdntraffic weekly'

Supported Predefined Searches

Table 118: Search Name & Mandatory Parameters

Sl. No.	Search Name	Mandatory Parameters
1	cdntraffic_daily	
2	cdntraffic_weekly	

Sl. No.	Search Name	Mandatory Parameters
3	cdntraffic_monthly	
4	trafficsummary_by_deliveryservers_daily	
5	trafficsummary_by_deliveryservers_weekly	
6	trafficsummary_by_deliveryservers_monthly	
7	trafficsummary_by_deliveryservices_daily	
8	trafficsummary_by_deliveryservices_weekly	
9	trafficsummary_by_deliveryservices_monthly	
10	deliveryserver_traffic_daily	delivery_server_name
11	deliveryserver_traffic_weekly	delivery_server_name
12	deliveryserver_traffic_monthly	delivery_server_name
13	deliveryservice_traffic_daily	delivery_service_name
14	deliveryservice_traffic_weekly	delivery_service_name
15	deliveryservice_traffic_monthly	delivery_service_name

Generating CSV Files from Search Results (Gencsvfromsearch)

VDS-SM provides the capability to generate CSV files from search results. Specific dashboard searches with default configurations and the search results are exported securely in CSV format through FTP, SFTP password-based authentication, and SFTP key-based authentication.

Users can define multiple FTP/SFTP destination servers. If the server is the same, but has different destination directories, then the user needs to define separate SFTP server configuration blocks in the configuration files.

To generate CSV files from search results, perform the following steps:

-
- Step 1** Configure the search file (search_spec.conf) based on the respective protocol (FTP\SFTP) parameters.
Step 2 Run either the shell script (gencsvfromsearch.sh) or python script (gencsvfromsearch.py).
-

Configuring Search File

The search_spec.conf file specifies the searches for which the results will be exported to the server. The search_spec.conf file must be updated for the respective protocol (FTP\SFTP) parameters.

The following table lists the parameters that need to be configured in search_spec.conf for FTP or SFTP export:

Table 119: Protocol Parameters

Parameter	Description
SFTPServer.SFTP.ip =	Defines the SFTP export server IP address.
SFTPServer.SFTP.port =	Defines the SFTP port number for exports. SFTP=22 (default port usage).
SFTPServer.SFTP.username =	Defines the SFTP export server username.
SFTPServer.SFTP.password =	Defines the SFTP export server password.
SFTPServer.SFTP.directory =	Defines the SFTP export location of the CSV files.
SFTPServer.SFTP.keyfile.location =	Defines the path to the private key file of the server.
SFTPServer.SFTP.keyfile.passcode =	Defines the password of the public key file (if required).
SFTPServer.SFTP.keyfile.type =	Defines the type of the public key file, that is, RSA or DSS.
FTPServer.FTP.ip =	Defines the FTP export server IP address.
FTPServer.FTP.port =	Defines the FTP port number for exports. FTP=21 (default port usage).
FTPServer.FTP.username =	Defines the FTP export server username.
FTPServer.FTP.password =	Defines the FTP export server password.
FTPServer.FTP.directory =	Defines the FTP export location of the CSV files.

To configure the search file, perform the following steps:

Step 1 Log in to Job scheduler node using the following credentials:

Username: bnisplunk

Password: <password>

Step 2 Navigate to the following location:

/opt/splunk/etc/deployment-apps/Gencsvfromsearch/bin/search_spec.conf

Step 3 Edit the search configuration file.

Note Host can be host name or IP address.

a) Add the values to the following parameters if you want to enable *SFTP key-based authentication*:

- SFTPServer.SFTP.ip =

- SFTPServer.SFTP.port =
- SFTPServer.SFTP.username =
- SFTPServer.SFTP.directory =
- SFTPServer.SFTP.keyfile.location =
- SFTPServer.SFTP.keyfile.passcode =
- SFTPServer.SFTP.keyfile.type =

Note When both options are specified (key-based parameter and password-based parameter), key-based authentication is attempted. There will be no fall back to password-based authentication, if the key-based authentication fails.

b) Add the values to the following parameters if you want to enable *SFTP password-based authentication*:

- SFTPServer.SFTP.ip =
- SFTPServer.SFTP.username =
- SFTPServer.SFTP.password =
- SFTPServer.SFTP.directory =

Note The key file parameters must be empty for password-based authentication.

c) Add the values to the following parameters if you want to enable *FTP authentication*:

- [ftpserver]
- FTPServer.FTP.ip =
- FTPServer.FTP.port =
- FTPServer.FTP.username =
- FTPServer.FTP.password =
- FTPServer.FTP.directory =

Note You must ensure that the same parameter values are available in the Secondary Job Scheduler's search_spec.conf in case of ESX failover.

The results are exported for the following searches:

- HSSBitRate
- MobitvBitRate
- ABRNumberOfRequestPerSecond
- ErrorRateonDeliveryServers
- ResponseCodebyDeliveryServer
- RealtimeEdgeBandwidthUsage

- ConcurrentClientSessions
- ClientDensitybyNumberofRequestsForLastDay
- ABROscillationRateForLastDay

Run Shell Script

The gencsvfromsearch.sh is a wrapper script which is used to execute gencsvfromsearch.py. You must execute gencsvfromsearch.sh script from the Forwarder node.

Step 1 Log in to the Forwarder node using the following credentials:

Username: bnisplunk
Password: <password>

Step 2 Navigate to the following location:

/opt/splunkforwarder/etc/apps/Gencsvfromsearch/bin

Step 3 Execute the script using the following command:

sh gencsvfromsearch.sh <Searchname> <Protocol> <FTP/SFTPname>

Description of parameters in the above command are:

- Search name—This parameter is specified in search section of the *search_spec.conf* file.
- Protocol—This parameter sets the export protocol as FTP/SFTP.
- FTP/SFTP name—FTP name is specified in FTP server section and SFTP name is specified in SFTP server section of the *search_spec.conf* file.

Note Depending on the protocol that will be used, you need to provide values for the respective section or stanza in the conf file.

Example

./gencsvfromsearch.sh HSSBitRate SFTP SFTP1

Run Python Script

The gencsvfromsearch.py script searches from Splunk using the specified search query, generates the CSV file, and then uploads the CSV to the specified SFTP server. You should execute gencsvfromsearch.py script from the Forwarder node.

Step 1 Log in to the Forwarder node using the following credentials:

Username: bnisplunk
Password: <password>

Step 2 Navigate to the following location:

cd /opt/splunkforwarder/etc/apps/Gencsvfromsearch/bin

Step 3 Execute the script using the following command:

```
/opt/splunk/bin/splunk cmd python gencsvfromsearch.py <Searchname> <Protocol> <FTP/SFTPname>
```

Description of parameters in the above command are:

- Search name—This parameter is specified in search section of the *search_spec.conf* file.
- Protocol—This parameter sets the export protocol as FTP/SFTP.
- FTP/SFTP name—FTP name is specified in FTP server section and SFTP name is specified in SFTP server section of the *search_spec.conf* file.

Example

```
/opt/splunk/bin/splunk cmd python gencsvfromsearch.py HSSBitRate SFTP SFTP1
```



CHAPTER 5

Monitor

- [Monitor Overview, page 161](#)

Monitor Overview

CDN hosts different content, such as live and archived, to viewers around the world. For the CDN Operators to quickly check the performance of the network, real-time monitoring is performed on Throughput, Cache Hit Ratio, Concurrent Active Sessions, and Responses.



Note

Only Throughput, Cache Hit Ratio, Concurrent Active Sessions, and Responses charts are refreshed in real-time (with minimum delay).

To access this feature, click **Monitor** from the main page.

The following categories are displayed in Monitor:

- CDN Overview
- Throughput
- Cache Hit Ratio
- Concurrent Active Sessions
- Responses
- Bitrates

These categories are explained in detail here.

CDN Overview

Displays the number of delivery services, delivery servers, and edge locations. These values are refreshed every eight minutes.

CDN Overview:

Delivery Services: 46

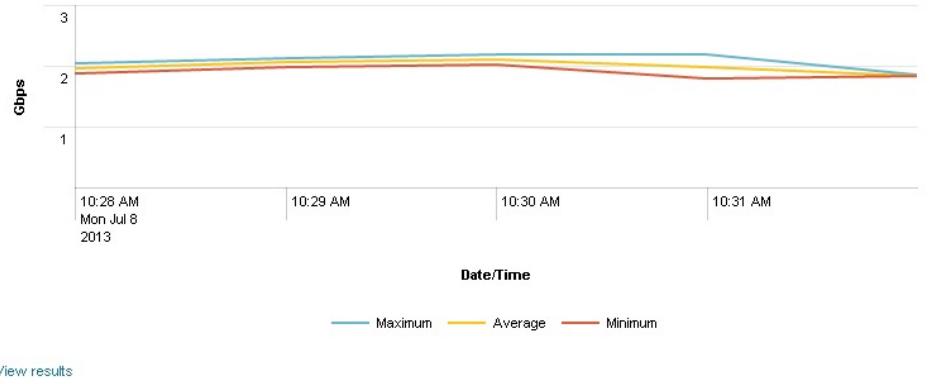
Delivery Servers: 7

Edge Locations: 3

Throughput (Gbps)

Throughput (Gbps)

refreshed: real-time



360665

The following table describes the Throughput chart:

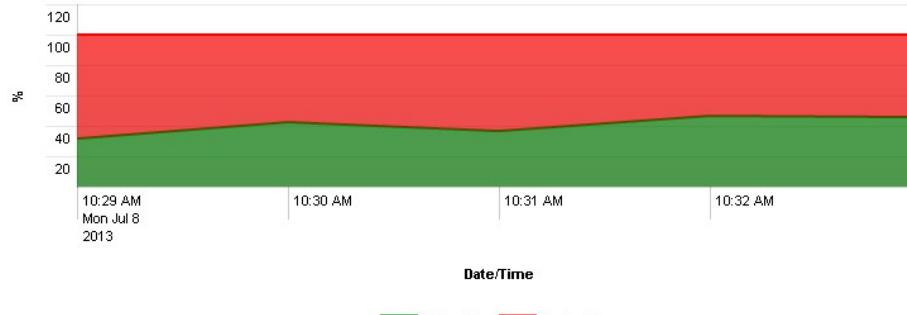
Table 120: Throughput Chart & Description

Chart	Description
Throughput	Illustrates the rate of data delivery by the network at real-time.
Chart Information	The information within this chart is shown in a line graph with Date/Time along the X-axis and the throughput in Gbps along the Y-axis. The legends representing the graph are maximum, minimum, and average.
Chart Filters	This chart uses Delivery Server, and Delivery Service as filters.

Cache Hit Ratio

Cache Hit Ratio

refreshed: real-time

[View results](#)

360663

The following table describes the Cache Hit Ratio chart:

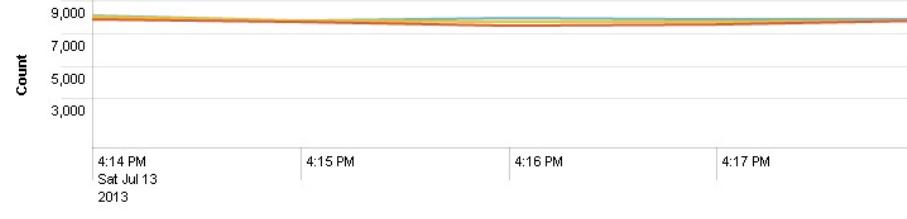
Table 121: Cache Hit Ratio Chart & Description

Chart	Description
Cache Hit Ratio	Provides client request cache hit and miss percentage at real-time.
Chart Information	The information within this chart is shown in a stacked area graph with Date/Time along the X-axis and the cache hit/miss percentage in the Y-axis. The legends representing the graph are Cache Hit and Cache Miss.
Chart Filters	This chart uses Delivery Server, and Delivery Service as filters.

Concurrent Active Sessions

Concurrent Active Sessions

refreshed: real-time

[View results](#)

360805

The following table describes the Concurrent Active Sessions chart:

Table 122: Concurrent Active Sessions Chart & Description

Chart	Description
Concurrent Active Sessions	Illustrates the concurrent client sessions at real-time.
Chart Information	The information within this chart is a line graph with Date/Time along the X-axis and Maximum, Minimum and Average count along the Y-axis. The legends representing the graph are maximum, average, and minimum.
Chart Filters	This chart uses Delivery Server, and Delivery Service as filters.

Responses

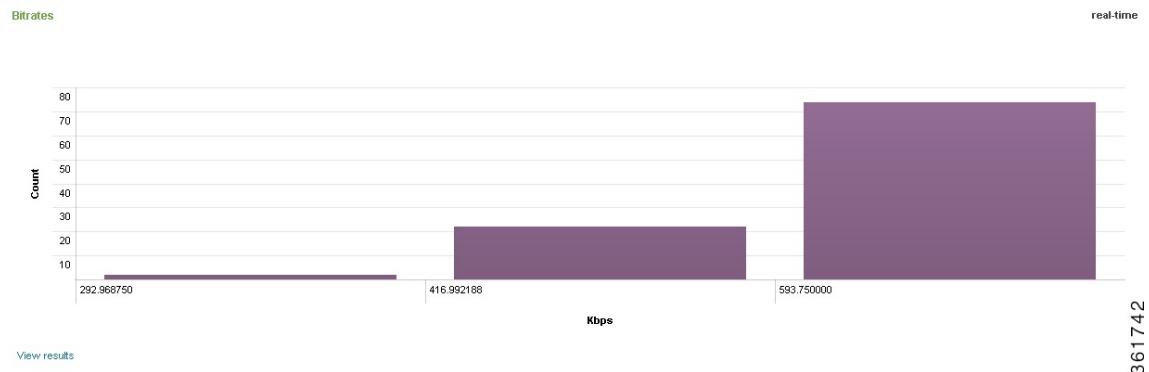


The following table describes the Responses chart:

Table 123: Responses Chart & Description

Chart	Description
Responses	Provides response codes count or percentage at real-time.
Chart Information	The information within this chart is shown in stacked area with Date/Time along the X-axis with the response count or percentage along the Y-axis. The legends representing the graph are 2xx, 3xx, 4xx, and 5xx.
Chart Filters	This chart uses Delivery Server, and Delivery Service as filters.

Bitrates



The following table describes the Bitrates chart:

Table 124: Bitrates Chart & Description

Chart	Description
Bitrates	Illustrates the bitrate used to serve the content through CDN.
Chart Information	The information within this chart is shown in a column graph with Bitrate along the X-axis and Count along the Y-axis. The bitrate values in the chart are refreshed every minute.
Chart Filters	This chart uses Delivery Server, and Delivery Service as filters.



CHAPTER 6

Alerts

- [Alerts Overview, page 167](#)
- [Adding a Threshold Alert, page 167](#)
- [Deleting a Threshold Alert, page 169](#)
- [Customizing Threshold Metrics, page 169](#)
- [Quota Violations, page 170](#)

Alerts Overview

Alerts are sent in the form of emails and are designed based on the results of your scheduled searches. Alerts highlight the exceptions that occur as a result of exceeding the configured threshold criteria.

Adding a Threshold Alert

To add a threshold alert, perform the following steps:

Step 1 From the Home page, choose **Alerts > Thresholds**.

Adding a Threshold Alert

The Thresholds page appears.

Figure 1: Thresholds page

The screenshot shows the 'Thresholds' page under the 'Alerts / Thresholds' tab. At the top, there is a table with columns: Metrics, Alert Condition *, Alert Name *, Email Id *, and Frequency *. Below this table, there is a section titled 'Threshold Alerts' with a timestamp '5m ago'. A single row is listed in this table, showing 'Peak Throughput' as the metric, 'Overflow' as the alert name, 'Equals To 100' as the condition, and 'sashwakh@cisco.com' as the email ID. The row also includes a 'Delete' action button and a timestamp '403068'.

- Step 2** Enter the following details in the Thresholds table:

Table 125: Adding a Threshold Alert–Field and Description

Field	Description
Alert Condition	Choose the condition for which the alert is to be triggered and specify the value.
Alert Name	Enter the alert name.
Email Id	Enter the email ID(s) to which the alerts are to be sent. Multiple email IDs can be added separated by commas.
Frequency	Specify the frequency for triggering the alert emails. The alert will be sent at regular intervals based on the value that you configure in the Frequency field.

- Step 3**

Click **Create**.

The newly added alert appears in the **Threshold Alerts** table and **admin** folder in the Custom Search and Reports.

Deleting a Threshold Alert

To delete a threshold alert, perform the following steps:

-
- Step 1** From the Home page, choose **Alerts > Thresholds**.
The Thresholds page appears.
- Step 2** In the Threshold Alerts table, click the **Delete** button next to the threshold alert that you want to delete.
- Step 3** Click **OK** to permanently delete the threshold alert in the confirmation dialog box.
- Step 4** Close the Success dialog box.
-

Customizing Threshold Metrics

VDS-SM provides an option to configure the list of threshold metrics. By default, the Thresholds page lists five metrics such as Peak Throughput, Concurrent Active Sessions, Average Dynamic Storage, 4XX Errors, and 5XX Errors. The CDN Operator can create a new metric and add scheduled alerts for that metric.



-
- Note** All the alerts related changes are saved under
`/opt/splunk/etc/apps/CustomSearches/local/savedsearches.conf` file and related
metadata information are stored under
`/opt/splunk/etc/apps/CustomSearches/metadata/local.meta` file.
Before making any changes to the CustomSearches app, take backup of
`/opt/splunk/etc/apps/CustomSearches/local/savedsearches.conf` and
`/opt/splunk/etc/apps/CustomSearches/metadata/local.meta` files.
-

To create a Threshold metric, perform the following steps:

-
- Step 1** Log in to the Search Head node using the following credentials:
Username: bnisplunk
Password: <password>
- Step 2** Navigate to the following location:
`/opt/splunk/etc/apps/CustomSearches/local/`
- Step 3** Open the **thresholds_Alerts.conf** file.
thresholds_Alerts.conf file contains a list of codes as stanzas corresponding to the metrics listed in the Thresholds page.
- Step 4** Add the search query.
Provide the appropriate attributes such as *alert_condition*, *search_15mnts*, *search_1hr* and *search_1day* in the query.

Quota Violations

- Note**
- In the search query, use the pattern "\$%operator%" instead of comparison operator and "\$%thresholdValue%" instead of comparison value.
 - You can add footer to the alert mails by replacing ". ." with the custom message for footer_Text option, in *thresholds_alerts.conf* file.

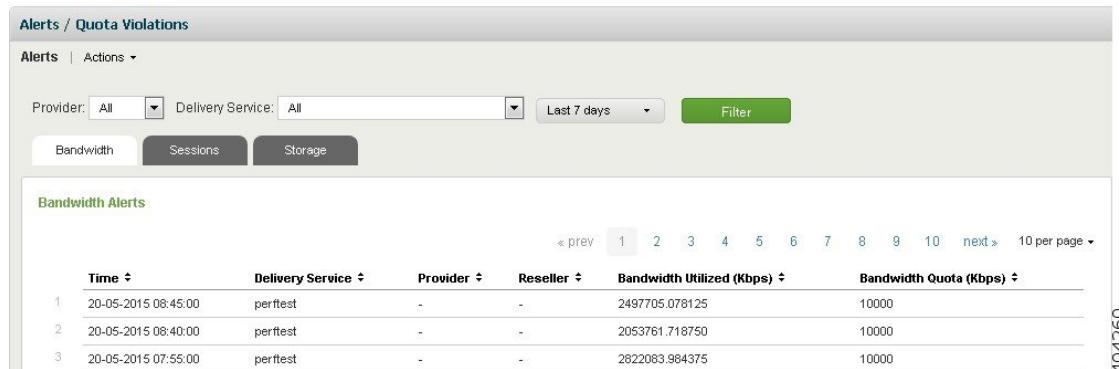
The newly added metric appears in the Thresholds page.

Quota Violations

VDS-IS allows the Operator to set quota limits for Bandwidth, Storage, and Sessions at the delivery service level. The CDN still caters the service to the providers when they exceed the quota limit (depending on buffer). When the quota limit is exceeded, alerts are triggered.

From the main page, choose **Alerts > Quota Violations**. This displays the Bandwidth, Session, and Storage alerts.

Bandwidth Alerts



The screenshot shows the 'Bandwidth Alerts' section of the VDS-IS interface. At the top, there are filters for 'Provider' (All), 'Delivery Service' (All), and a 'Last 7 days' time range, with a 'Filter' button. Below the filters are three tabs: 'Bandwidth' (selected), 'Sessions', and 'Storage'. The main area is titled 'Bandwidth Alerts' and contains a table with the following data:

Time	Delivery Service	Provider	Reseller	Bandwidth Utilized (Kbps)	Bandwidth Quota (Kbps)
20-05-2015 08:45:00	peritest	-	-	2497705.078125	10000
20-05-2015 08:40:00	peritest	-	-	2053761.718750	10000
20-05-2015 07:55:00	peritest	-	-	2822083.984375	10000

Chart	Description
Bandwidth Alerts	Illustrates all bandwidth alerts that are triggered.
Filter	This chart uses Provider, Delivery Service, and the Time Range Picker as filters.

Session Alerts

Alerts / Quota Violations

Alerts | Actions ▾

Provider: All Delivery Service: All Last 7 days Filter

Bandwidth Sessions Storage

Sessions Alerts

Time	Delivery Service	Provider	Reseller	Active Sessions	Session Quota
20-05-2015 08:35:00	perftest	-	-	437	100
20-05-2015 08:30:00	perftest	-	-	448	100
20-05-2015 07:55:00	perftest	-	-	399	100

404261

Chart	Description
Session Alerts	Illustrates all session alerts that are triggered.
Filter	This chart uses Provider, Delivery Service, and the Time Range Picker as filters.

Storage Alerts

Alerts / Quota Violations

Alerts | Actions ▾

Provider: All Delivery Service: All Last 7 days Filter

Bandwidth Sessions Storage

Storage Alerts

Time	Delivery Service	Provider	Reseller	Prepositioned Storage (MB)	Storage Quota (MB)
20-05-2015 11:10:00	cim-test-iis-01	Master_contentProvider2	r2	76.552086	45
20-05-2015 11:10:00	cim-test-iis-01	Master_contentProvider2	r2	70.013252	45
20-05-2015 11:10:00	wmt-test-new1	Master_contentProvider2	r2	80.955666	75

404266

Chart	Description
Storage Alerts	Illustrates all storage alerts that are triggered.
Filter	This chart uses Provider, Delivery Service, and the Time Range Picker as filters.

The Storage alert is disabled. If you want to enable this, perform the following steps:

- 1 Login to the JS node.

- 2 Navigate to **/opt/splunk/etc/deployment-apps/CDNSummarization/local**.
- 3 Open the **savedsearches.conf** file.
- 4 Find the stanza with name : **Do Not Click - Summary Index - Storage Alert**.
- 5 Change the disabled option to 0 (zero).
- 6 In the search query, add the threshold in GB in place of "XXX", and wait for the changes to take effect, if the changes does not reflect, restart splunk on JS node.



Configuration

- [VDS Manager Configuration, page 173](#)
- [Adding a CDN, page 174](#)
- [Managing a VDS-IS CDN, page 175](#)
- [Distribution Hierarchy Function Overview, page 177](#)
- [Delivery Servers, page 179](#)
- [URL Signing, page 179](#)
- [Delivery Services, page 184](#)
- [Reseller Function Overview, page 187](#)
- [Content Provider Function Overview, page 190](#)
- [Services, page 194](#)
- [Geo Fencing, page 196](#)
- [Content Purging, page 198](#)

VDS Manager Configuration

VDS Manager enables CDN Operators to deploy and manage the VDS-IS configuration such as delivery services.

Multi-Tiered and Multi-Tenancy

The Operator can manage the simple profile (name, contact info, and quota) users for content providers (CP) and Resellers. Recently created user can log in and view their own dashboards when a CP or Reseller user is created. The VDS Operator can manage the hierarchical relationship among CDN, CP, and Services. The CP or Reseller user can view dashboards at the Delivery Service level for all Delivery Services under its domain.

Services (1-to-1 with Delivery Service) are synchronized from the Content Delivery Service Manager (CDSM) periodically. All Delivery Services should be synchronized from the CDSM to the VDS Manager, including both live and VOD Content Delivery Services.

Adding a CDN

To deploy VDS-SM, you must configure CDN. CDN enables VDS-SM to gather topology information from the Service and allows the service to be controlled by the VDS-SM solution.

To add a CDN, perform the following steps:

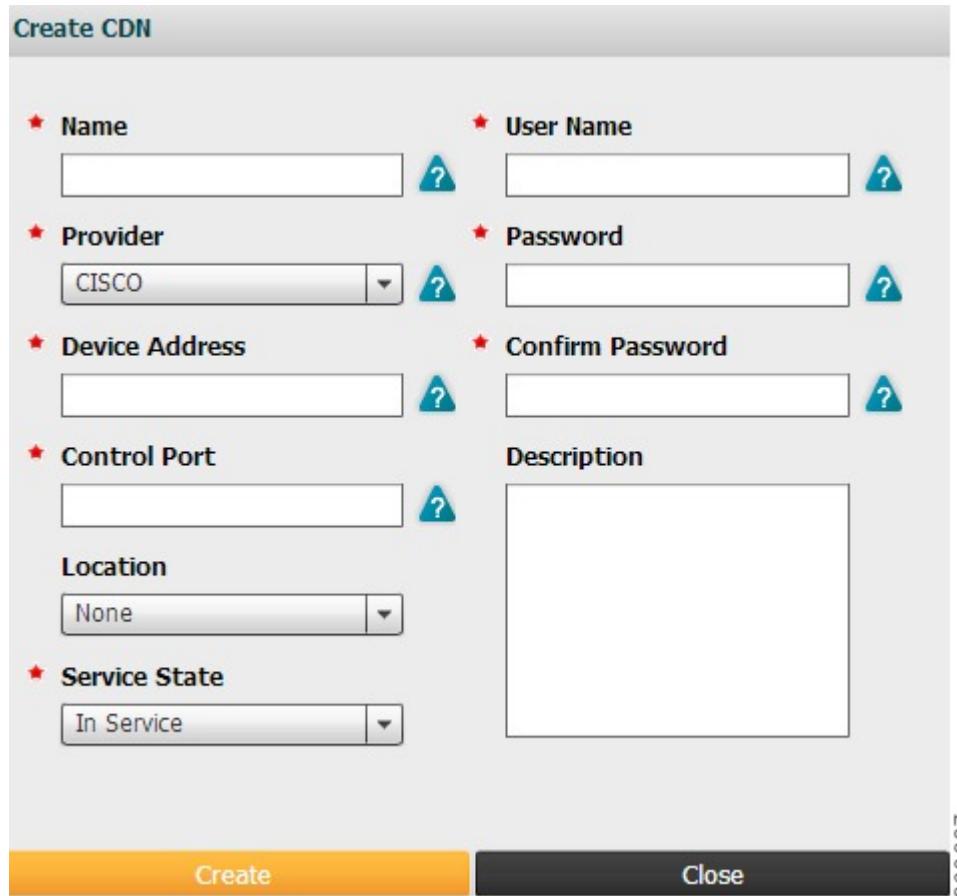
Step 1

From the main page, choose **Configuration > CDN**.

The CDN page, listing all configured CDN devices and their status is displayed.

Step 2

Click  to create a new CDN.



Create CDN

Name	User Name
<input type="text"/>	<input type="text"/>
Provider	Password
CISCO	<input type="password"/>
Device Address	Confirm Password
<input type="text"/>	<input type="password"/>
Control Port	Description
<input type="text"/>	<input type="text"/>
Location	
None	
Service State	
In Service	

Create **Close**

In the Create CDN popup, enter the appropriate CDN information for the VDS-IS CDSM as mentioned here.

Table 126: Create CDN Field & Description

Field	Description
Name	A unique name for the device.
Provider	From the drop-down list, choose the content provider for the CDN.

Field	Description
Device Address	The IP address or Fully Qualified Domain Name (FQDN) of this device.
Control Port	A pre-existing port number specified for this device. Contact your System Administrator for this information.
Location	The location to which this device is associated.
Service State	<p>The service state of the service:</p> <ul style="list-style-type: none"> • In Service: Enables the service. When a device is in this state, all read and write operations to this device are allowed. • Out of Service: Disables the service. When a device is in this state, all write operations are not allowed. However, the read operation is still allowed, whereby the periodic sync, operational state check, and manual sync will still happen.
Username	The user name associated with the device.
Password/Confirm Password	The password associated with the username for this CDN service.
Description	Optional. User defined description for the CDN service.

Step 3 On completion, click **Create**. The CDN is created and a validation message is displayed.

Step 4 Click **Close**.

Step 5 From within the CDN screen, click **Refresh** to view the newly added CDN service. Note that the CDN synchronization will take a few minutes.

Managing a VDS-IS CDN

To manage a VDS-IS CDN, perform the following steps:

Step 1 From the main page, choose **Configuration > CDN**.

Step 2 Click the arrow next to the name of the CDN you want to manage. The Distribution Hierarchy maps to the CDSM location.

The screenshot shows the configuration interface for a CDN device named 'cdn1'. The 'Basic Information' panel contains fields for Name, Provider (CISCO), Device Address (10.77.246.88), Control Port (6443), Location (None), Service State (In Service), Managed (Yes), User Name (bniadmin), Password, Confirm Password, and Description. The 'State' panel shows the operational state as 'DOWN' with reason 'UNAVAILABLE'. The 'Distribution Hierarchy' table is empty. Navigation links for Service Routers, Delivery Servers, and Delivery Services are present at the bottom.

360830

The following table provides a description of the key elements contained within the selected CDN page.

Table 127: CDN - Field & Description

Element	Description
Distribution Hierarchy	The Distribution Hierarchy maps to CDSM locations (see Distribution Hierarchy Function Overview, on page 177).
Service Routers	The VDS-SM Service Routers map to the CDSM devices (SRs).
Delivery Servers	The VDS-SM Delivery Servers map to the CDSM devices (SEs) (see Delivery Servers, on page 179).
Delivery Services	The VDS-SM Delivery Services map to the CDSM Delivery Services (see Delivery Services, on page 184).

Distribution Hierarchy Function Overview

Adding a Distribution Hierarchy

To add a Distribution Hierarchy, perform the following steps:

-
- Step 1** From the main page, choose **Configuration > CDN**.
 - Step 2** Select the CDN to which you want to add Distribution Hierarchy and click .
 - Step 3** In the Distribution Hierarchy tab, click .
 - Step 4** In the dialog box that appears in the right pane, enter the following details:

Table 128: Adding Distribution Hierarchy - Field & Description

Field	Description
Name	Specify the Server Group name.
Parent Server Group	Specify the Parent Server Group.
Topology Location	Specify the Topology Location.
Level	Specify the level to which the Delivery Server belongs.
Description	Optional. Additional information about the Distribution Hierarchy.

- Step 5** Click **OK**.
 - Step 6** Click **Save**.
-

Modifying a Distribution Hierarchy

To modify a Distribution Hierarchy, perform the following steps:

-
- Step 1** From the main page, choose **Configuration > CDN**.
- Step 2** Select the CDN that you want to modify and click .
- Step 3** From the Distribution Hierarchy tab, select the Distribution Hierarchy that you want to modify and click .
- Step 4** Edit the details in the dialog box that appears on the right pane and click **OK**.
- Step 5** Click **Save**.
-

Cloning a Distribution Hierarchy

This feature helps you to replicate an existing Distribution Hierarchy. Cloning is helpful when you want to create the same Distribution Hierarchy again.

To clone a distribution hierarchy, perform the following steps:

-
- Step 1** From the main page, choose **Configuration > CDN**.
- Step 2** Select the CDN that you want to clone and click .
- Step 3** From the Distribution Hierarchy tab, select the Distribution Hierarchy, which you want to clone and click .
- Step 4** Click  and then click **OK**.
- Step 5** Click **Save**.
-

Deleting a Distribution Hierarchy

To delete a Distribution Hierarchy, perform the following steps:

-
- Step 1** From the main page, choose **Configuration > CDN**.
- Step 2** Select the CDN that you want to clone and click .
- Step 3** From the Distribution Hierarchy tab, select the Distribution Hierarchy that you want to delete and click .

You can also undo a task that you have just performed. This option is not feasible for an existing Delivery Hierarchy. For example, you can undo a Distribution Hierarchy, immediately after it has been added. For this, select the task that you want to undo (the task that you just performed), and click .

Delivery Servers

Modifying a Delivery Server

To modify a Delivery Server, perform the following steps:

Step 1 From the main page, choose **Configuration > CDN**.

Step 2 Select the CDN that you want to modify and click .

Step 3

In the Delivery Servers tab, select the Delivery Server that you want to modify and click .

Step 4 Edit the details and click **OK**.

Step 5 Click **Save**.

Note You can only edit the Description and Server Group fields.

URL Signing

Cisco Internet Streamer CDS provides the option for signing and validating content URLs, thus restricting access to some users and limiting the viewing time. For signing and validating the URL, the CDS rely on a set of one or more secret keys shared among the portal and the devices within CDS. This information needs to be configured on the participating Service Engines by the CDN Operator.

To access this feature, perform the following steps:

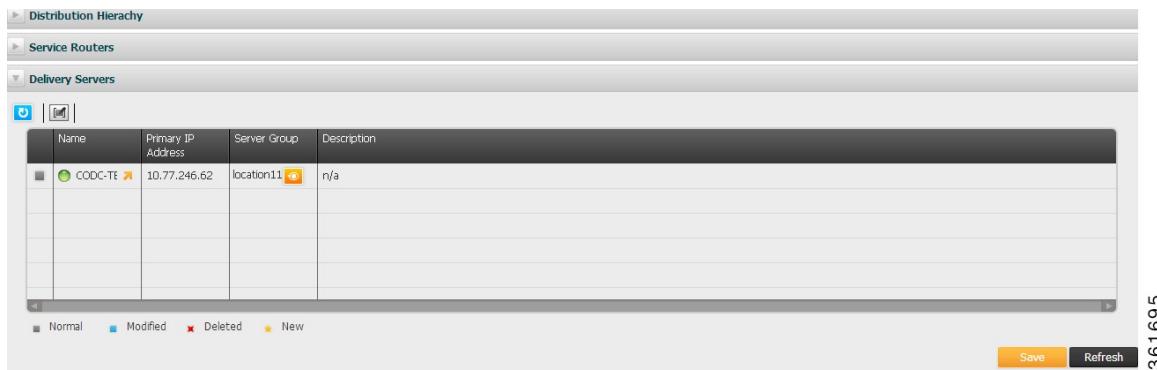
Step 1 From the main page, choose **Configuration > CDN**. The CDN page is displayed.

Step 2 Click , which is located next to the CDN.

Configuration / CDN							
Name	Device Address	Provider	Service State	Reason	Location	Description	Synchronization
CDN	10.77.246.61	CISCO	In Service	OK			 Synchronization is successful at Tue Dec 03 10:27

361693

Step 3 In the Delivery Servers tab, click .

URL Signing

361695

Step 4

The following URL Signing page is displayed.

The screenshot shows a table titled "URL Signing" with columns: Key Id Owner, Key Id Number, Key, Public Key URL, Private Key URL, and Symmetric Key. The table contains 12 rows of data. The "Public Key URL" and "Private Key URL" columns show URLs for rows 12 and 13: "http://10.78.232.67:8080/public2.p" and "http://10.78.232.67:8080/public2.p". Buttons for "Save" and "Refresh" are at the bottom.

361701

Table 129: URL Signing Parameters

Column Name	Description
Key Id Owner	Specify the ID number for the owner of this encryption key. Valid entries are from 1 to 32.
Key Id Number	Specify the encryption key ID number. Valid entries are from 1 to 16.

Column Name	Description
Key	<p>Field for Symmetric Key only. Enter a unique URL signature key with up to 16 characters (excluding double quotes at the beginning and end of the string). This field accepts only 7-bit printable ASCII characters (alphabetic, numerics, and others) and does not support a space or the following special characters: pipe (), question mark (?), double quotes ("), and apostrophe ('). The following special characters are allowed: {}!#\$%&()*+,-./;:<=>@[^[]_</p> <p>Quoted and unquoted strings are allowed. Double quotes ("") are allowed at the beginning and end of the string only. If you do not surround the key string with double quotes, quotes are added when you click Submit.</p>
Public Key URL	<p>Field for Asymmetric Key only. The location of the public key file. Only HTTP, HTTPS, or FTP addresses are supported. The public/private key pair is stored in Privacy Enhanced Mail (PEM) format.</p> <p>Note During Validation, the public key file is checked if the file size exceeds 2000 bytes and if the file starts with "----BEGIN PUBLIC KEY----" and contains "----END PUBLIC KEY----" line</p>
Private Key URL	<p>Field for Asymmetric Key only. The location of the private key file. Only HTTP, HTTPS, or FTP addresses are supported. The public/private key pair is stored in Privacy Enhanced Mail (PEM) format.</p> <p>Note During Validation, the private key file is checked if the file size exceeds 2000 bytes and if the file starts with "----BEGIN EC PRIVATE KEY----" and contains "----END EC PRIVATE KEY----" line</p>
Symmetric Key	<p>Field for Asymmetric Key only. A 16-byte American Encryption Standard (AES) key used for AES encryption of the signed URL.</p>

Creating URL Signature

To create a URL Signature, perform the following steps:

Step 1

From the main page, choose **Configuration > CDN**. The CDN page is displayed.

Step 2

After navigating to the URL Signing page, click .



361699

Step 3

Enter the details as mentioned in the following table:

Field	Description
Cryptographic Algorithm	Choose either Symmetric Key or Asymmetric Key .

Note For all other field information, refer to the [Table 129: URL Signing Parameters, on page 180](#).

Step 4

Click **Submit**.

Editing URL Signature

To edit a URL Signature, perform the following steps:

Step 1

From the main page, choose **Configuration > CDN**. The CDN page is displayed.

Step 2

After navigating to the URL Signing page, select the URL Signature information, which you want to edit.

Basic Information

Name	CODEC-TEST-SE-QA
Primary IP Address	10.77.246.62
Server Group	location111
Description	n/a

URL Signing

Key Id Owner	Key Id Number	Key	Public Key URL	Private Key URL	Symmetric Key
1	3	'das'			
7	7	'fffsfd'			
5	5	'abc''			
2	2	'f'			
1	12	'test1'			
20	11	'123456'			
11	12	'test'			
12	1		http://10.78.232.67:8080/public2.p	http://10.78.232.67:8080/public2.p	
11	1				
3	3	'qwert'			

Save Refresh

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Step 3Click .**Step 4**Enter the required changes and click **Submit**.

Note For Asymmetric Key, only **Private Key URL** and **Symmetric Key** fields can be edited. For Symmetric Key, only the **Key** field can be edited.

Deleting URL Signature

To delete a URL Signature, perform the following steps:

Step 1From the main page, choose **Configuration > CDN**. The CDN page is displayed.**Step 2**

After navigating to the URL Signing page, select the URL Signature information, which you want to delete.

Step 3Click .**Step 4**Click **Yes** in the **Confirmation** dialog box.

361700

Delivery Services

Adding a Delivery Service

To add a Delivery Service, perform the following steps:

Step 1 From the main page, choose Configuration > CDN.

Step 2 Select the CDN to which you want to add a Delivery Service and click .

Step 3 On the Delivery Services tab, click .

Create Delivery Service

Name	Service Routing Domain
<input type="text"/>	<input type="text"/>
Origin FQDN	Bandwidth Quota Augment ...
<input type="text"/>	<input type="text" value="10"/>
Preposition Storage Quota (...)	Is Live
<input type="text" value="0"/>	<input type="text" value="No"/>
Skip Encryption For Distributi...	Storage Priority Class
<input type="text" value="No"/>	<input type="text"/>
Session Quota	Content Provider
<input type="text" value="0"/>	<input type="text"/>
Session Quota Augment Buff...	Description
<input type="text" value="10"/>	<input type="text"/>
Bandwidth Quota (kbps)	
<input type="text" value="0"/>	
Content Delivery QoS	
DEFAULT	
Create	
Close	

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Step 4 Enter the following details in the Create Delivery Service dialog box:

Table 130: Adding Delivery Service - Field & Description

Field	Description
Name	Specify the Delivery Service name.
Origin FQDN	Specify the FQDN of the Content Provider.

Field	Description
Preposition Storage Quota (MB)	<p>Maximum content disk storage size for each SE, in megabytes, for pre-fetched content and metadata, and hybrid metadata for this delivery service. The default value is zero, which means unlimited storage can be done for this delivery service.</p> <p>Note The configured Preposition Storage Quota does not affect cache content quota size; it only restricts pre-fetched content storage for each SE. If the total pre-fetched content storage size is less than the configured quota, then the extra storage is used for dynamic cache files.</p>
Skip Encryption for Distribution	<p>Specify whether you need to skip encryption for distribution. Select No for encryption and Yes to skip encryption.</p>
Session Quota	<p>Maximum number of concurrent sessions allowed for this delivery service. The default value is zero, which means unlimited sessions can be set for this delivery service.</p>
Session Quota Augment Buffer (%)	<p>Buffer, as a percentage, of the maximum number of concurrent sessions allowed over the Session Quota. If this threshold is exceeded, no new sessions are created until the number of concurrent sessions is below this threshold. The range is from 0 to 1000. The default is 10.</p>
Bandwidth Quota (kbps)	<p>Maximum bandwidth allowed for this delivery service. The default value is zero, which means unlimited bandwidth can be set for this delivery service.</p>
Content Delivery QoS	<p>This is automatically set as default.</p>
Service Routing Domain	<p>Specify the Service Routing Domain Name.</p>
Bandwidth Quota Augment Buffer (%)	<p>Buffer, as a percentage, of the maximum bandwidth allowed over the Bandwidth Quota. If this threshold is exceeded, no new sessions are created until the bandwidth used is below this threshold. The range is from 0 to 1000. The default is 10.</p>

Adding a Delivery Service

Field	Description
Is Live	When checked, creates a live program to distribute live or scheduled programs to the SEs associated with this delivery service and with the live program. This delivery service does not have a related Manifest file and cannot be used to distribute file-based content as regular delivery services do. The live program learns about a live stream through a program file that describes the attributes of the program. Checking this check box disables the Delivery Service Quota field and fields in the Acquisition and Distribution Properties section.
Storage Priority Class	Choose the correct option from the drop-down list. Note This is configured in VDS-IS and is synced automatically.
Content Provider	Associate the delivery service with the content provider.
Description	Optional. Additional information about the Delivery Service.

Step 5 Click **Create**.

Step 6 Verify that the Delivery Service has been created successfully by selecting **Delivery Services** within the CDN page and then verifying that the newly created Delivery Service is present.

Step 7 Click  next to the newly created delivery service to associate delivery servers to it.

Step 8

Display a list of available delivery servers by clicking .

Step 9 Select one or multiple delivery servers that will be associated to the delivery service. Then, select the delivery server, which will be the Content Acquirer, from the drop-down list and then click **OK**.

The Content Acquirer can be changed at any time from the main Delivery Service configuration page, using the **Assign Content Acquirer** icon.

Deleting a Delivery Service

To delete a delivery service, perform the following steps:

-
- Step 1** From the main page, choose **Configuration > CDN**.
 - Step 2** Select the CDN that you want to delete and click .
 - Step 3** In the Delivery Services tab, select the Delivery Service that you want to delete.
 - Step 4** Click  and in the confirmation dialog box, click **Yes** to permanently delete the Delivery Service, and click **No** to cancel the deletion.
-

Reseller Function Overview

A reseller is a user who buys delivery services from CDN and sells to the content providers. A reseller is allocated a specific session bandwidth storage quota.

Adding a Reseller

To add a reseller, perform the following steps:

-
- Step 1** From the main page, choose **Configuration > Customers > Reseller**.
 - Step 2** Click  to open the **Create Reseller** dialog box.
-

Adding a Reseller

Create Reseller

Basic Information	
★ Reseller Name	★ Preposition Storage Quota (MB)
<input type="text"/>	<input type="text"/> 0
Reseller Id	★ Session Quota
<input type="text"/>	<input type="text"/> 0
Address	★ Bandwidth Quota (kbps)
<input type="text"/>	<input type="text"/> 0
Phone	Admin Account
<input type="text"/>	★ User Name
Email	<input type="text"/>
<input type="text"/>	★ Password
Website	<input type="text"/>
<input type="text"/>	★ Confirm Password
Description	<input type="text"/>
<input type="button" value="Create"/> <input type="button" value="Close"/> 360829	

Adding a Reseller involves configuring or modifying the following fields:

Table 131: Adding a Reseller - Field & Description

Field	Description
Reseller Name	Specify a unique name for the reseller.
Reseller Id	Specify the ID for the reseller.
Address	Specify the IP address or FQDN of this reseller.
Phone	Specify the phone number for the reseller.
Email	Specify the email address for the reseller.
Website	Specify the web site URL for the reseller.
Description	Optional. Additional information about the reseller.
Preposition Storage Quota (MB)	Specify the maximum data in MB that can be prepositioned for the reseller. The default value is zero, which means unlimited storage can be done for this reseller.

Field	Description
Session Quota	Specify the maximum number of sessions that can be active for the reseller. The default value is zero, which means unlimited sessions can be set for this reseller.
Bandwidth Quota (Kbps)	Specify the maximum bandwidth allowed for the reseller. The default value is zero, which means unlimited bandwidth can be set for this reseller.
User Name	Specify a user name associated with the reseller.
Password	Specify the user's password associated with this reseller.
Confirm Password	Re-enter the user's password associated with this reseller.

- Step 3** Click **Create** to add the Reseller.
-

Modifying a Reseller

To modify a Reseller, perform the following steps:

-
- Step 1** From the main page, choose **Configuration > Customers > Reseller**.

- Step 2** Select the Reseller that you want to modify and click .

- Step 3** On the left pane, edit the details and click **Save**.
-

Deleting a Reseller

To delete a Reseller, perform the following steps:

-
- Step 1** From the main page, choose **Configuration > Customers > Reseller**.

- Step 2** Select the Reseller that you want to delete and click .

- Step 3** Click **Yes** to permanently delete the Reseller, and click **No** to cancel the deletion.

- Note**
- Ensure that you have deleted the Content Provider(s) associated with the Reseller before deleting the Reseller.
 - When you delete a Reseller, its corresponding user(s) will also be deleted.
-

Content Provider Function Overview

A content provider is a user who buys delivery services from CDN or reseller and serves the content.

Adding a Content Provider

To add a content provider, perform the following steps:

Step 1 From the main page, choose Configuration > Customers > Content Provider.

Step 2 Click  to open the Create Content Provider dialog box.

Create Content Provider

Basic Information		Admin Account	
<input checked="" type="checkbox"/> Global Content Provider	Provider Name	Preposition Storage Quota (MB)	<input type="text" value="0"/>
<input type="text"/>	<input type="text"/>	Session Quota	<input type="text" value="0"/>
Provider Id	<input type="text"/>	Bandwidth Quota (kbps)	<input type="text" value="0"/>
Address	<input type="text"/>	Admin Account	
Phone	<input type="text"/>	User Name	<input type="text"/>
Email	<input type="text"/>	Password	<input type="text"/>
Website	<input type="text"/>	Confirm Password	<input type="text"/>
Description	<input type="text"/>		
Create		Close	

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Adding a Content Provider involves configuring or modifying the following fields:

Table 132: Adding a Content Provider - Field & Description

Field	Description
Provider Name	Specify a unique name for the content provider.
Provider Id	Optional. Specify the ID for the content provider.
Address	Optional. Specify the IP address or FQDN of this content provider.
Phone	Optional. Specify the phone number for this content provider.
Email	Optional. Specify the email address for this content provider.
Website	Optional. Specify the web site URL for this content provider.
Description	Optional. Additional information about the content provider.
Preposition Storage Quota (MB)	Specify the maximum data in MB that can be prepositioned for the reseller. The default value is zero, which means unlimited storage can be done for this content provider.
Session Quota	Specify the maximum number of sessions that can be active for the reseller. The default value is zero, which means unlimited sessions can be set for this content provider.
Bandwidth Quota (Kbps)	Specify the maximum bandwidth allowed for the reseller. The default value is zero, which means unlimited bandwidth can be set for this content provider.
User Name	Specify a user name associated with the content provider.
Password	Specify the user's password associated with this content provider.
Confirm Password	Re-enter the user's password associated with this content provider.

A Content Provider that is not a global Content Provider, will be available under the Reseller option. To view the Reseller option, uncheck Global Content Provider. From the Reseller drop-down, choose the Reseller, which you want to associate the Content Provider to.

- Step 3** Click **Create** to add the Content Provider.
-

Mapping a Content Provider and Delivery Service

To map a Content Provider and Delivery Service, perform the following steps:

Before You Begin

Before you map a Content Provider and Delivery Service, you need to first create the Delivery Service in CDN. For this, you need to add a CDN (see [Adding a CDN, on page 174](#)). After you add a CDN, you need to add a Delivery Service (see [Adding a Delivery Service, on page 184](#)).

Step 1 From the main page, choose **Configuration > Customers > Content Provider**.

Step 2 Select the Content Provider that you want to assign Delivery Service, and click .

Step 3 Click  and select the Delivery Service that you need to map.

Step 4 Select the CDN that you want to map and click .

Step 5 Click **Save**.

If you want to assign multiple Content Providers to a single Delivery Service, you must not map Content Provider and Delivery Service.

Assigning Multiple Content Providers to a Single Delivery Service

This feature enables the user to set up multiple Content Providers to a single Delivery Service. This is feasible by providing a custom Regex option, wherein the CDN Operator can provide the Regex for new field CP_ID. This custom regex is used to extract CP_ID from the URL and then perform a lookup to get a meaningful CP name. If the CDN Operator needs to use Asset ID to obtain meaningful CP name, then the Asset ID and CP_ID will have the same Regex for token extraction from the URL. CDN Operators can either create or update Regex for CP_ID extraction. Regex is maintained in props.conf, a Splunk configuration file.

To create or update Regex for CP_ID, perform the following steps:

Step 1 Log in to the analytics JS node using the following credentials:

Username: **bniplunk**

Password: **password**

Step 2 Execute the script configure_regex.py using the following command to add/update:

```
$SPLUNK_HOME/bin/splunk cmd python $SPLUNK_HOME/etc/apps/CDN_JS/bin/configure_regex.py add
<sourcetype> <fieldname> "<regex>"
```

Where, <sourcetype> is the sourcetype for which the regex is provided.

The valid source types are: fms_disconnect, wmt_logplaystats, we_access, abr_session and sr_transaction

<regex>—regex to extract the Content Provider information from the log data

<fieldname>—the valid field names are CP_ID and Asset

Example:

For the following log file entry:

```
[28/Nov/2012:23:54:42.315+0000] 1799 74.126.71.217 TCP_HIT/206 2458 GET http://ccp-cmc-smooth-localpod02-linear.cdn2.net/content/CP1/hls/file0/file_500.m3u8 application/x-mpegURL - hls 0 - 20121129100000000100000001 [29/Nov/2012:00:00:02.317+0000] External -
```

Case1: If you want to extract content/CP1 as CP_ID, then the Regex is:

```
(?i)^(?:[^ ]*( {1,2})) {6} (?:[a-z]+://) (?:[^ :]+[^ /]+) (?P<CP_ID>[^ /]+/[ ^ /]+)
```

Case 2: If you want to extract CP1 as CP_ID, then the Regex is:

```
(?i)^(?:[^ ]*( {1,2})) {6} (?:[a-z]+://) (?:[^ :]+[^ /]+/[ ^ /]+) (?P<CP_ID>[^ /]+)
```

Case 3: If you want to extract file_500.m3u8 as Asset, then the Regex is:

```
(?i)^(?:[^ ]*( {1,2})) {6} (?:[a-z]+://) (?:[^ :]+[^ /]+/[ ^ /]+/[ ^ /]+/[ ^ /]+) (?P<Asset>[^ ]+)
```

Once this script is executed, redeployment of the server is initiated automatically.

To delete Regex for CP_ID, use the following command:

```
#$SPLUNK_HOME/bin/splunk cmd python configure_regex.py <remove> <sourcetype> <fieldname>
```

Modifying a Content Provider

To modify a Content Provider, perform the following steps:

Step 1 From the main page, choose **Configuration > Customers > Content Provider**.

Step 2 Select the Content Provider that you want to modify and click .

Step 3 In the left pane, edit the details and click **Save**.

Deleting a Content Provider

To delete a Content Provider, perform the following steps:

Step 1 From the main page, choose **Configuration > Customers > Content Provider**.

Step 2 Select the Content Provider that you want to delete and click .

Step 3 Click **Yes** to permanently delete the Content Provider, and click **No** to cancel deletion.

Note When you delete a Content Provider, its corresponding user(s) will also be deleted.

Services

This feature provides a quick overview of the bandwidth, session, and storage quota for each reseller, content provider, and delivery service in the CDN to the CDN Operator. These quotas need to be specified when you create delivery service, content provider, and reseller.

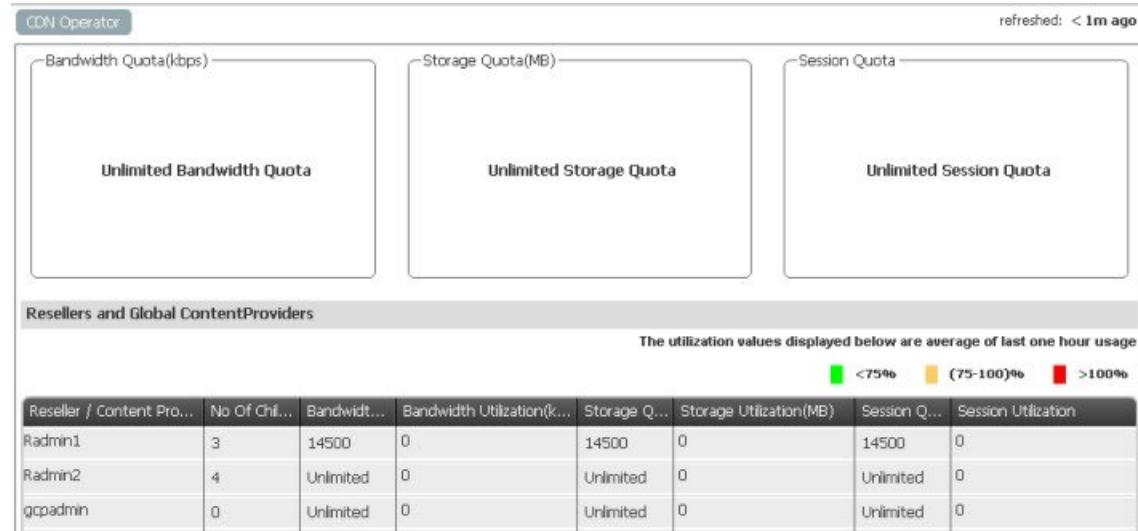
To access this feature, from the main page, click **Configuration > Services**.

On the right pane, the overall CDN Operator allocation is displayed as a pie chart.

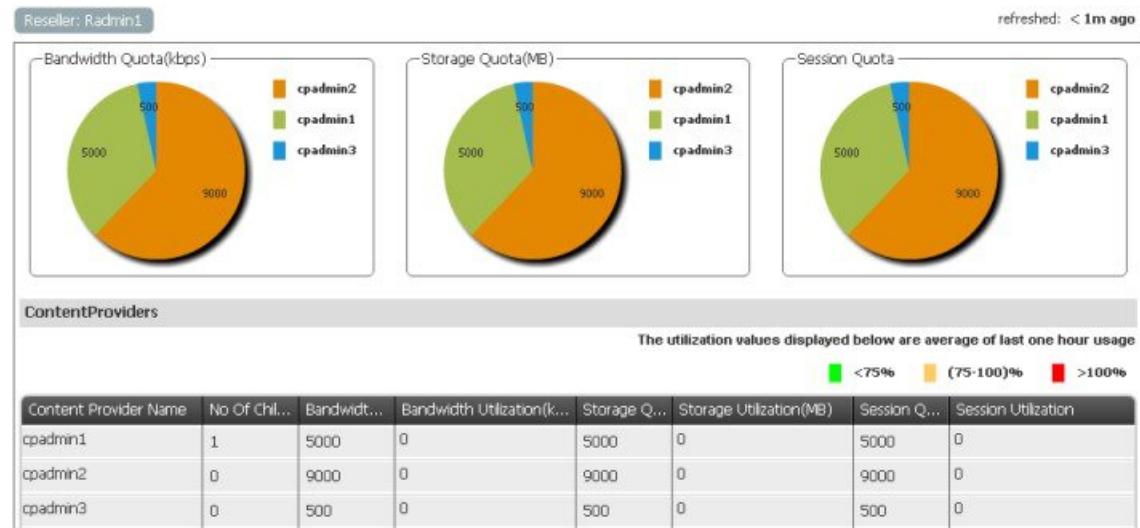
To view the bandwidth, session, and storage quota for each reseller, on the left pane, click the arrow next to the CDN Operator. The resellers and providers under the CDN Operator are displayed. Select a specific reseller to view the allocation.


Note

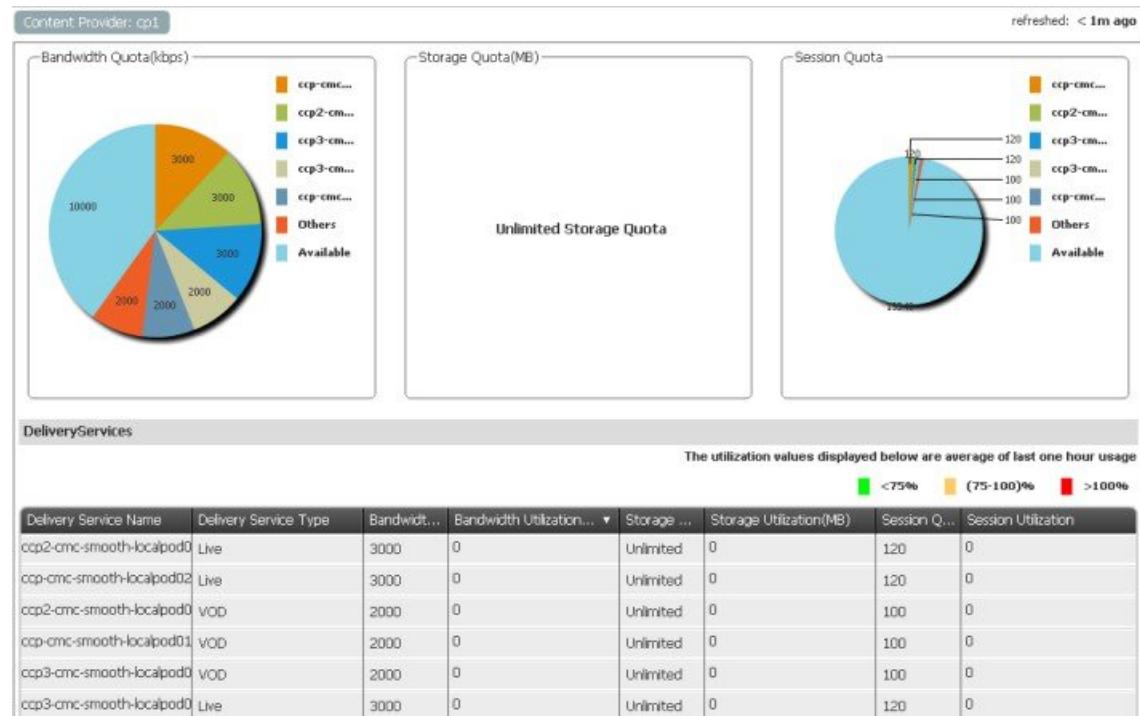
For unlimited bandwidth, session, or storage quota, the pie chart will not be displayed.



To view the bandwidth, session, and storage quota of each content provider, on the left pane, click the arrow next to the respective reseller. The content providers under the resellers are displayed. Select a specific content provider to view the allocation.



To view the delivery services of each content provider, on the left pane, click the arrow next to the respective content provider. The delivery services under the content providers are displayed.



Note Utilization shown in the data grid is the actual CDN utilization.

Geo Fencing

A Geo/IP file is an XML file that configures the delivery service to allow or deny client requests, based on the client's IP address or client's geographic locations (country, state, city). Each Service Engine participating in the Authorization Service must have Authorization Service enabled and the IP address and port of the Geo-Location server specified. VDS-IS provides an option to apply Geo/IP file and restrict access to the content, based on location. Geo Fencing enables the Content Providers and CDN Operators to assign a Geo IP file to a delivery service or to disassociate a Geo IP file from a delivery service.

Assigning a Geo/IP file to a Delivery Service

To assign a Geo IP file to a delivery service, perform the following steps:

- Step 1** From the main page, choose Configuration > Geo Fencing.

The screenshot shows the 'Configuration/Geo Fencing' dialog box. It contains four sections with red asterisks indicating required fields:

- Select CDN:** A dropdown menu currently set to "Test_CDN".
- Geo/IP File Upload:** A text input field showing "No File Selected", with "Browse" and "Validate" buttons next to it.
- Destination File Name:** An empty text input field.
- Apply to Delivery Service:** A dropdown menu set to "ajittestds", with a "Delete" button next to it.

At the bottom of the dialog are "Submit" and "Cancel" buttons. On the right side of the dialog, there is a vertical reference number "361614".

- Step 2** Choose the CDN from the **Select CDN** drop-down list.

- Step 3** Click **Browse** next to **Geo/IP File Upload** text box to select the Geo IP file. The Geo IP file is an XML file.

- Step 4** Click **Validate** to validate the selected Geo IP file. This displays the details on the right pane.

File Type:	Geo/IP File
Result:	Valid file
File Content:	<pre><CDSAuthorization xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:noNamespaceSchemaLocation="schema\CDSAuthorization.xsd"> <Revision>1.0</Revision> <CustomerName>Wholesale Content Connect Basic</CustomerName> <Allow> <Pattern>*</Pattern> <Geo> <Country name="ALL"/> </Geo> </Allow> <Deny> <Pattern>*</Pattern> <Geo> <Country name="India"/> </Geo> </Deny> <Order>Deny</Order> </CDSAuthorization></pre>

361756

- Step 5** The **Destination File Name** is auto populated when you select a Geo IP file. If the users want to edit, they can edit as desired.
- Step 6** Choose the delivery service from the **Apply to Delivery Service** drop-down list to which the file needs to be assigned to.
- Step 7** Click **Submit**. The Geo IP file will be associated with the delivery service successfully.

Disassociating a Geo/IP file from a Delivery Service

To disassociate a Geo IP file associated with a delivery service, perform the following steps:

- Step 1** From the main page, choose **Configuration > Geo Fencing**.
- Step 2** Choose the delivery service from the **Apply to Delivery Service** drop-down list.
- Step 3** Click **Delete**. This will disassociate the Geo IP file from the selected delivery service and this deletes the file from the system.
- Note** To delete a Geo IP file, the file should not be associated with any delivery services.

Content Purging

Content purging enables the wholesale users (both the Resellers and Content Providers) to delete the dynamically cached content from the delivery servers that deliver content through the delivery services assigned to them.

By default, all content deletion requests will be sent as synchronous requests. To send requests that have wildcard characters in a URL as asynchronous, add the following configuration in Global Configurations after choosing cdnmanager from the **Property View** drop-down list



Deleting Content

To delete the content, perform the following steps:

Step 1

From the main page, choose **Configuration > Content Purging**. This shows the deletion tasks table where the tasks for deletion requests are created.

Configuration / Content Purging					
Created Date	Type	Total SEs	Completed SEs	Status	Comment
Mon Nov 4 15:24:40 GMT+0530 2013	CDSM GUI	1	0	Delete Successfully	*
Mon Nov 4 15:17:55 GMT+0530 2013	CDSM GUI	1	0	Delete Successfully	*
Mon Nov 4 15:12:12 GMT+0530 2013	CDSM GUI	1	0	Delete Successfully	
Mon Nov 4 15:08:39 GMT+0530 2013	CDSM GUI	1	0	Delete Successfully	
Mon Nov 4 15:07:02 GMT+0530 2013	CDSM GUI	1	0	Delete Successfully	
Mon Nov 4 14:58:06 GMT+0530 2013	CDSM GUI	1	0	Delete Successfully	
Mon Nov 4 14:49:30 GMT+0530 2013	CDSM GUI	1	0	Delete Successfully	
Mon Nov 4 14:40:58 GMT+0530 2013	CDSM GUI	1	0	Delete Successfully	
Fri Nov 1 14:40:20 GMT+0530 2013	API	1	0	Delete Successfully	test
Fri Nov 1 14:40:08 GMT+0530 2013	API	1	0	Delete Successfully	test
Fri Nov 1 14:39:47 GMT+0530 2013	API	1	0	Delete Successfully	test
Fri Nov 1 12:41:56 GMT+0530 2013	API	1	0	Delete Successfully	test
Fri Nov 1 12:31:34 GMT+0530 2013	API	1	0	Delete Successfully	test

361612

Table 133: Deletion Tasks Table

Column Name	Description
Created Date	Date on which content deletion request is created on VDS-IS.
Type	<p>Two types namely API and GUI.</p> <ul style="list-style-type: none"> API—Tasks created through VDS-SM by using REST APIs that are exposed by VDS-IS. CDSM GUI—Tasks created through VDS-IS GUI.
Total SEs	Total number of Service Engines to which the deletion request is sent.

Completed SEs	Number of Service Engines in which the deletion request is completed.
Status	Status of deletion task.
Comment	Comments given at the time of deletion request.

When you click , the Task Result page is displayed. This displays the content deletion request details.



The screenshot shows the 'Content Deletion Task' page with the following details:

- Created Date:** Mon Nov 18 18:05:16 GMT+0530 2013
- Type:** API
- Total SEs:** 1
- Completed SEs:** 0
- Status:** Delete Failed
- Comment:** 2 URLs

Below this, two tables provide more detailed information:

Deletion Request Sending Status			
Name	IP Address	Status	Reason
CODC-TEST-SE-QA	10.77.246.62		

Content Deletion Status in SE(s)			
Content URL	Delivery Server	Status Code	Status
http://10.79.232.173/*	CODC-TEST-SE-QA	901	

361613

Step 2

Click  to open the **Content Deletion** dialog box.

Content Deletion

★ **Select CDN**

★ **Content URL**

Comments

Delivery Server(s)

Submit **Close**

361611

- Step 3** Choose the CDN from the **Select CDN** drop-down list.
- Step 4** Enter the content URL in the **Content URL** text box. By entering the content URL, the **Delivery Server(s)** field will be populated with the delivery servers associated with the delivery services that serve the given content URL.
- Step 5** Enter the comments in the **Comments** text box.
- Step 6** Select the desired delivery server(s) from the **Delivery Server(s)** field from which the content needs to be deleted. If no delivery servers are selected, then the content will be deleted from all delivery servers that are associated with the delivery services that serve the given content.
- Step 7** Click **Submit**. The content from the selected delivery server(s) will be deleted successfully and the deletion details will be included in the deletion tasks table.
By clicking the **Refresh** icon, the content deletion task table is refreshed.



CHAPTER 8

Administration

- [System Load Dashboard, page 201](#)
- [License Usage , page 203](#)
- [Managing Users and Roles Overview, page 205](#)
- [About User Accounts, page 205](#)
- [Roles, page 205](#)
- [Global Configurations, page 207](#)
- [CDN Health, page 208](#)
- [Log Event Discrepancies, page 231](#)

System Load Dashboard

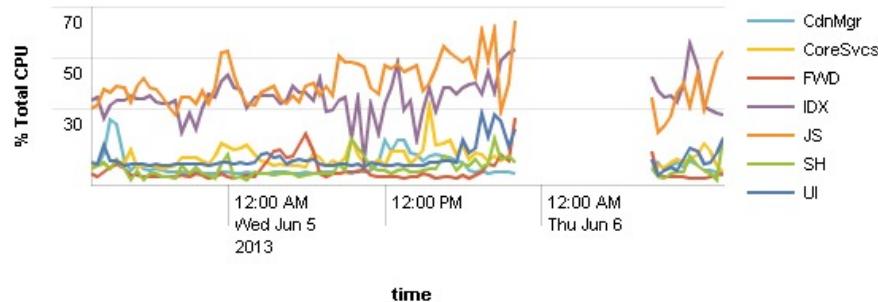
Displays charts that represents Percent Load by Host, Percent Memory Used by Host , Disk Used by Host and Volume, and Interface Throughput, across the nodes in the system.

To access System Load Dashboard, from the main page, choose **Administration > System Load Dashboard**.

Percent Load by Host

Percent Load by Host

refreshed: 1s ago

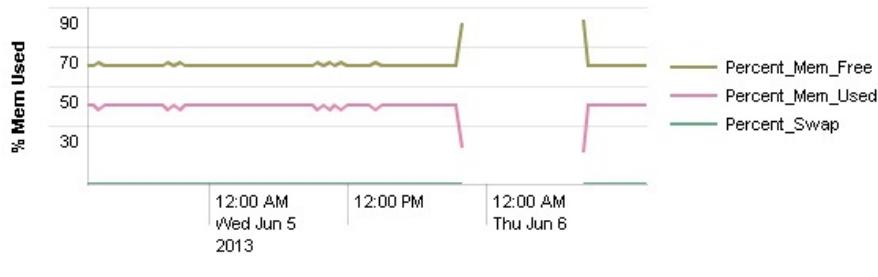
[View results](#)

360204

Percent Memory Used by Host

Percent Memory Used by Host

refreshed: 1s ago

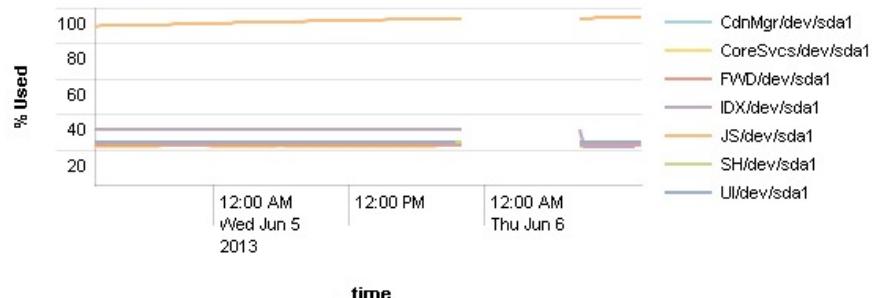
[View results](#)

360205

Disk Used by Host and Volume

Disk Used by Host and Volume

refreshed: < 1m ago

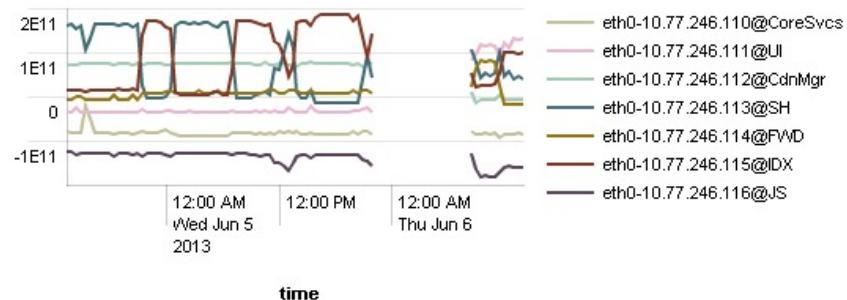
[View results](#)

360202

Interface Throughput

Interface Throughput

refreshed: 1s ago

[View results](#)

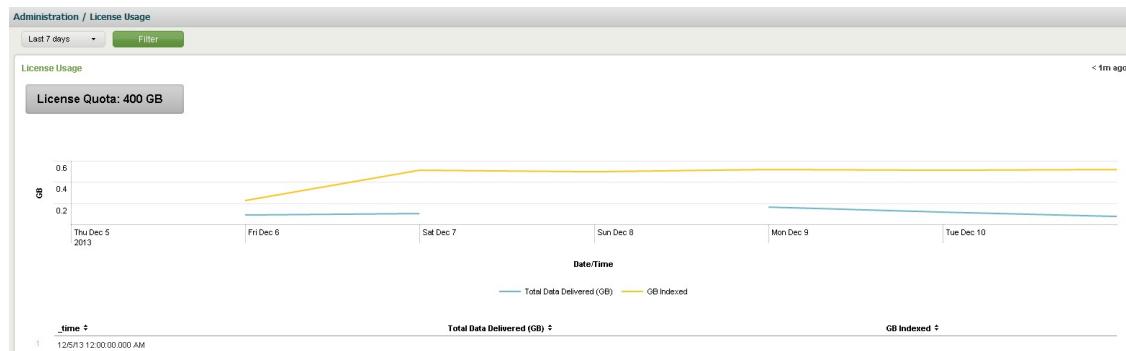
360203

License Usage

The License Usage dashboard displays the amount of logs indexed in the system.

To access the License Usage dashboard, from the main page, choose **Administration > License Usage**.

Configuring License Usage



361762

The following table describes the chart available within this dashboard.

Table 134: License Usage Chart & Description

Chart	Description
License Usage	Illustrates the amount of logs indexed in the system. The license quota value is the sum of multiple license stacks available in the Job Scheduler node.
Chart Information	The information within this chart is shown as a line graph with the Date/Time along the X-axis and the License Usage in GB along the Y-axis. The legends representing the graph are total data delivered, and data indexed in GB.
Chart Formula	The formula used to derive the graph is: The total log files indexed in the system vs the total data delivered within the CDN.
Chart Filters	This chart uses Time Range Picker - Last 7 days, Last 30 days, Last 90 days, Last 365 days, and Custom time, as filters.

You can configure the license usage chart based on your splunk license. For more information, see [Configuring License Usage, on page 204](#).

Configuring License Usage

To configure the license usage chart, perform the following steps:

-
- Step 1** Log in to the Job Scheduler node.
 - Step 2** Navigate to the following location:
`/opt/splunk/etc/deployment-apps/appnormalize/bin`
 - Step 3** Open the **common.conf** file.
 - Step 4** Specify the **groupId** and **label** of the splunk license.
You can add multiple splunk licenses by specifying groupIds and labels separated by comma.
 - Note** **groupId** and **label** must be specified in same order.
 - Step 5** Save the file and restart the Job Scheduler node.

Depending on the configuration made in the common.conf file, the License Quota value varies.

Managing Users and Roles Overview

Administrators can create specific users and set their roles from the **User Management** page.

To access User Management, from the main page, choose **Administration > User Management**. In this feature, you can add and delete a user.

About User Accounts

User accounts define user roles and access privileges to system configuration and management functional areas.

The CDN Manager includes a default user profile with Cisco Administrator access privileges, to provide the Network Administrator first-time access to the CDN Manager system.

Administrator privileges provide full rights to all system functions. You must have Administrator privileges to define roles and grant access permissions to system functions.

**Note**

For added security, we recommend that you replace the Cisco Administrator account with a new Administrator user account, specific to only your network management.

Roles

A user's role dictates the functional area and level of access that is granted to the user.

Following is a list of the supported roles:

- CDN Operator Administrator
- CDN Operator Viewer
- Reseller Administrator
- Reseller Viewer
- Content Provider Administrator
- Content Provider Viewer

Adding a User

Adding a user involves:

- Creating the user

Deleting a User

- Defining the user's role



Note You must have Administrator rights to add a user.

To add a user, perform the following steps:

Step 1

From the main page, choose **Administration > User Management**.

Administration / User Management						
User Name	First Name	Last Name	Status	System Administrat	Description	
bniadmin	bni	video	Enabled	Yes	bni administrator	
opradmin			Enabled	Yes		
opr			Enabled	No		
rsladmin			Enabled	No		
rsl			Enabled	No		
cpadmin			Enabled	No		
cp			Enabled	No		
cdnviewer	cdnOperator	Viewer	Enabled	No		

360206

Step 2

Click to add the user and define the user's role.

Step 3

In the Create New User dialog, type the values in the fields or select an option from the drop-down list.

Step 4

Add the user's name and password. By default, the role is set to Admin.

Note Do not create an user with user name as "admin".

Step 5

Click **Create**.

Deleting a User

To delete a user, perform the following steps:

Step 1

From the main page, choose **Administration > User Management**.

Step 2

From the User Management page, select the user you want to delete.

Step 3

Click .

Step 4

Click **Yes** in the confirmation dialog box.

The user will be deleted.

Global Configurations

Configuration includes any settings that exist on an *Appliance*, which an end-user might modify in the following ways:

- Using the Appliance Agent (rAPA) User Interface (UI) or Manager User Interface
- A manual edit to a specific file using a documented procedure; for example, file system modification of jboss-log4j.xml or workflows
- By copying a modified file onto the appliance from elsewhere

Important! Modifying a Global Configuration can have a major impact on the running system. A parameter change should only be made by a System Administrator who has a detailed understanding about the impact of the change on the running system.

A baseline configuration is established at the conclusion of installing each appliance. Any parameters not mentioned in this document (for example, tty device definitions) should be considered non-modifiable.

The following lists the configuration parameter elements:

- **Configuration Elements:** Kinds of configuration settings used by the system; for example, topology or configuration database, workflow, and so on.
- **Appliance Configuration Parameters:** Summary of all parameters used in configuring appliances with description, value type, and so on.
- **Solution Node Settings:** Settings recorded on each node, which define that node's specific role in the overall solution.
- **Global Configuration Settings:** Globally visible configuration sections, each containing a description of all parameters in the section, including the product defaults.
- **System Topology:** Topology data and its usage, import/export operations and the export schema.
- **Configuration Files:** Essential files for each appliance that contain the configuration for the appliance.

To access Global Configurations, choose **Administration > Global Configurations**.

Adding Global Configurations

To add global configurations, perform the following steps:

Step 1 From the main page, choose **Administration > Global Configurations**.

Step 2 Click  to add global configurations.

Step 3 Enter the details and click **OK** and then click **Save**.

Deleting Global Configurations

To delete global configurations, perform the following steps:

-
- Step 1** From the main page, choose **Administration > Global Configurations**.
- Step 2** Select the Global configuration you want to delete.
- Step 3** Click .
- Step 4** Click **OK** and then click **Save**.
-

CDN Health

Monitoring the health of CDN network can help prevent the CDN network from getting to a state in which your users cannot access the network or the data on it. VDS-SM provides an option to monitor the health of the CDN network resources in real-time and as trends.

The following categories are displayed in CDN Health:

- Monitor
- Trend

Enabling Service Monitor Transaction Log

CDN Health charts will be displayed only when the Service Monitor transaction log is forwarded from VDS-IS to VDS-SM.

Enabling Service Monitor (SE) Transaction Log

To enable and export Service Engine transaction log, perform the following steps:

**Note**

You can perform the below steps only if you have installed VDS-IS version that supports Service Monitor functionality.

Step 1 Login to the CDSM UI.

Step 2 Click **Devices** and select the required Service Engine.

Step 3 In the right pane, choose **Service Control > Transaction Logging**.

Step 4 From Monitors table, check the **Service Monitor** check box.

Step 5 Click **Submit**.

Enabling Service Monitor (SR) Transaction Log

To enable and export Service Router transaction log, perform the following steps:

**Note**

You can perform the below steps only if you have installed VDS-IS version that supports Service Monitor functionality.

Step 1 Login to the CDSM UI.

Step 2 Click **Devices** and select the required Service Router.

Step 3 In the right pane, choose **General Settings > Notification and Tracking > Transaction Logging**.

Step 4 From Monitors table, check the **Service Monitor** check box.

Step 5 Click **Submit**.

Monitor

Monitor dashboard displays metrics indicating the health of system resources in real-time.

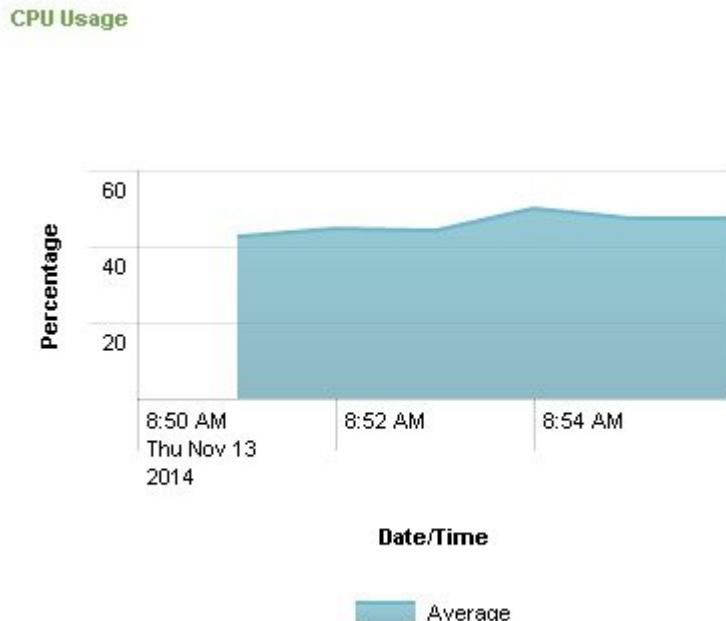
To access the Monitor dashboard, from the Home page, choose **Administration > CDN Health > Monitor**.

The following parameters are displayed in the Monitor dashboard:

- CPU Usage
- Memory Usage
- Disk Usage
- CPU Usage by Protocol Engines
- Memory Usage by Protocol Engines

- Stopped Protocol Engines
- Threshold Exceeded Protocol Engines

CPU Usage

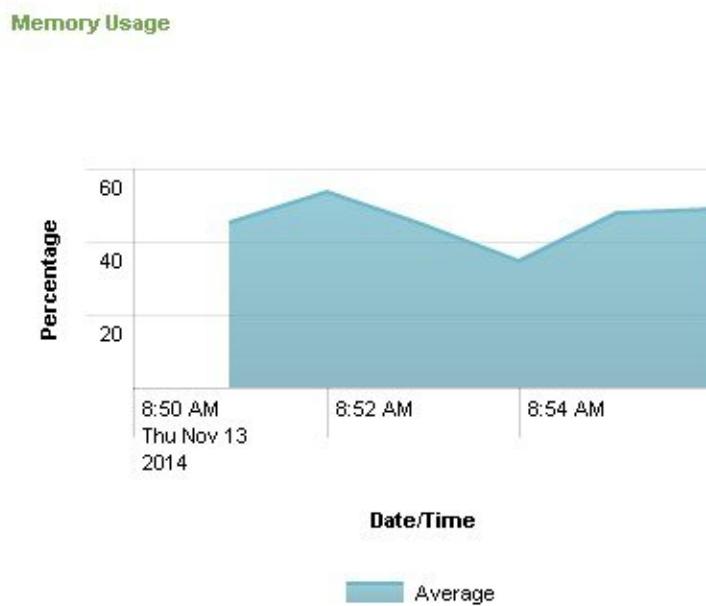


The following table describes the CPU Usage chart:

Table 135: CPU Usage Chart & Description

Chart	Description
CPU Usage	Illustrates the percentage of CPU consumed by a delivery server in real-time.
Chart Information	The information within this chart is shown in an area graph with Date/Time along the X-axis and the CPU usage as Percentage along the Y-axis. The legend representing the graph is Average.
Chart Filters	This chart uses Delivery Server as a filter.

Memory Usage



[View results](#)

The following table describes the Memory Usage chart:

Table 136: Memory Usage Chart & Description

Chart	Description
Memory Usage	Illustrates the percentage of memory consumed by a delivery server in real-time.
Chart Information	The information within this chart is shown in an area graph with Date/Time along the X-axis and the memory usage as Percentage along the Y-axis. The legend representing the graph is Average.
Chart Filters	This chart uses Delivery Server as a filter.

Disk Usage



[View results](#)

The following table describes the Disk Usage chart:

Table 137: Disk Usage Chart & Description

Chart	Description
Disk Usage	Illustrates the percentage of disk consumed by a delivery server in real-time.
Chart Information	The information within this chart is shown in an area graph with Date/Time along the X-axis and the disk usage as Percentage along the Y-axis. The legend representing the graph is Average.
Chart Filters	This chart uses Delivery Server as a filter.

CPU Usage by Protocol Engines

CPU Usage by Protocol Engines


[View results](#)

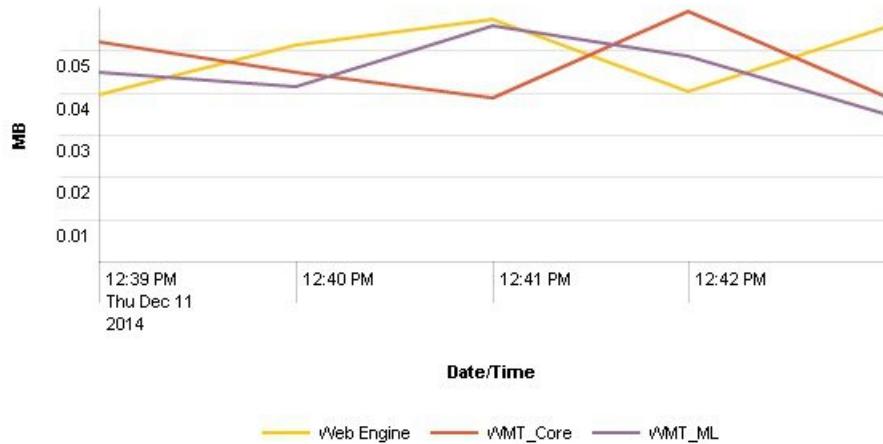
The following table describes the CPU Usage by Protocol Engines chart:

Table 138: CPU Usage by Protocol Engines Chart & Description

Chart	Description
CPU Usage by Protocol Engines	Illustrates the percentage of CPU consumed by the protocol engines of a delivery server in real-time.
Chart Information	The information within this chart is shown in a line graph with Date/Time along the X-axis and the CPU usage as Percentage along the Y-axis. The legends representing the graph are protocol engines.
Chart Filters	This chart uses Delivery Server as a filter.

Memory Usage by Protocol Engines

[Memory Usage by Protocol Engines](#)



[View results](#)

The following table describes the Memory Usage by Protocol Engines chart:

Table 139: Memory Usage by Protocol Engines Chart & Description

Chart	Description
Memory Usage by Protocol Engines	Illustrates the memory consumed by the protocol engines of a delivery server in real-time.
Chart Information	The information within this chart is shown in a line graph with Date/Time along the X-axis and the memory usage as MB along the Y-axis. The legends representing the graph are protocol engines.
Chart Filters	This chart uses Delivery Server as a filter.

Stopped Protocol Engines

Stopped Protocol Engines				real-time
	_time	Web Engine	FMS	WMT
1	1/5/15 12:15:00.000 PM	✗	✗	✗
2	1/5/15 12:16:00.000 PM	✗	✗	✗
3	1/5/15 12:17:00.000 PM	✗	✗	✗
4	1/5/15 12:18:00.000 PM	✗	✗	✗
5	1/5/15 12:19:00.000 PM	✗	✗	✗

[View results](#)

The following table describes the information in the table:

Table	Description
Stopped Protocol Engines	<p>Illustrates whether the protocol engines were fully functional without any stoppages in a given minute.</p> <ul style="list-style-type: none"> Red—Protocol Engine stopped at least once. Green—Protocol Engine was fully functional.
Table Information	The information within this table are -time, and protocol engines.
Table Filters	This table uses Delivery Server as a filter.

Threshold Exceeded Protocol Engines

Threshold Exceeded Protocol Engines				real-time
_time	Web Engine	FMS	WMT	
1 1/5/15 12:15:00.000 PM	✗	✗	✗	
2 1/5/15 12:16:00.000 PM	✗	✗	✗	
3 1/5/15 12:17:00.000 PM	✗	✗	✗	
4 1/5/15 12:18:00.000 PM	✗	✗	✗	
5 1/5/15 12:19:00.000 PM	✗	✗	✗	

[View results](#)

The following table describes the information in the table:

Table	Description
Threshold Exceeded Protocol Engines	Indicates whether the protocol engines exceeded the thresholds in a given minute. <ul style="list-style-type: none"> Red—Threshold exceeded at least once. Green—Below the threshold.
Table Information	The information within this table are -time, and protocol engines.
Table Filters	This table uses Delivery Server as a filter.

Trend

This features allows you to view the health of system resources based on the historical data (up to seven days) gathered. The following tabs are displayed in Trend:

- Service Engine
- Service Router

Service Engine

This tab displays charts that indicates the health of system resources at service engine level.

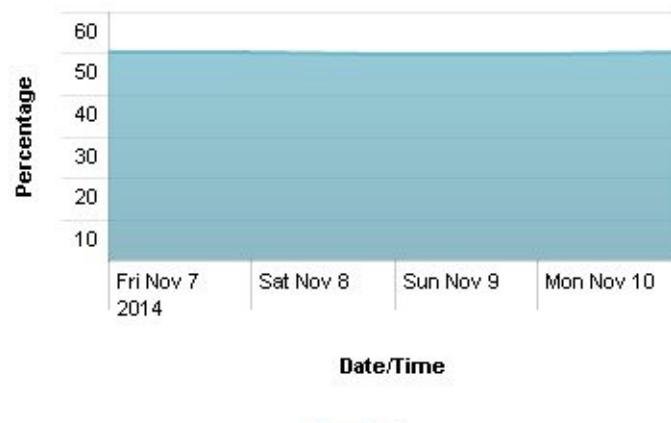
To access this tab, from the Home page, choose **Administration > CDN Health > Trend > Service Engine**.

The following metrics are displayed here:

- CPU Usage
- Memory Usage
- Disk Usage
- CPU Usage by Protocol Engines
- Memory Usage by Protocol Engines
- TCP Server Connections
- TCP Client Connections

CPU Usage

CPU Usage



[View results](#)

The following table describes the CPU Usage chart:

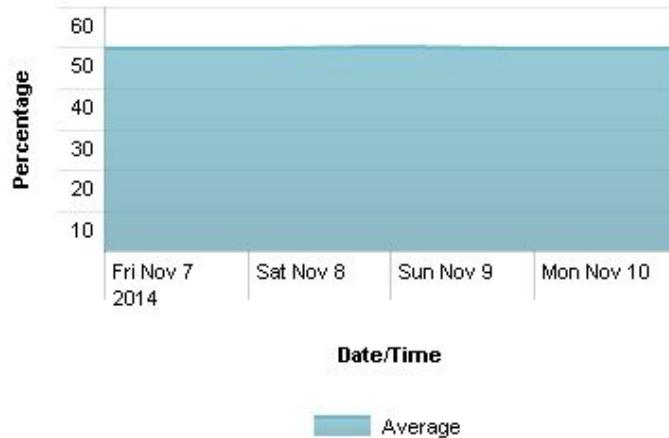
Table 140: CPU Usage Chart & Description

Chart	Description
CPU Usage	Illustrates the percentage of CPU consumed by a delivery server for the specified time range.
Chart Information	The information within this chart is shown in an area graph with Date/Time along the X-axis and the CPU usage as Percentage along the Y-axis. The legend representing the graph is Average.

Chart Formula	The formula used to derive the graph is: average of CPU usage (%) for the given delivery server.
Chart Filters	This chart uses Time Range, Delivery Server Group, and Delivery Server as filters.

Memory Usage

Memory Usage



[View results](#)

The following table describes the Memory Usage chart:

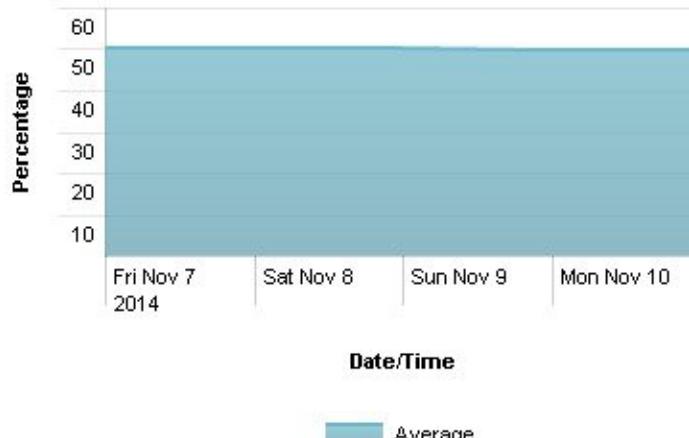
Table 141: Memory Usage Chart & Description

Chart	Description
Memory Usage	Illustrates the percentage of memory consumed by a delivery server for the specified time range.
Chart Information	The information within this chart is shown in an area graph with Date/Time along the X-axis and the memory usage as Percentage along the Y-axis. The legend representing the graph is Average.
Chart Formula	The formula used to derive the graph is: average of memory usage (%) for the given delivery server.

Chart Filters	This chart uses Time Range, Delivery Server Group, and Delivery Server as filters.
---------------	--

Disk Usage

Disk Usage



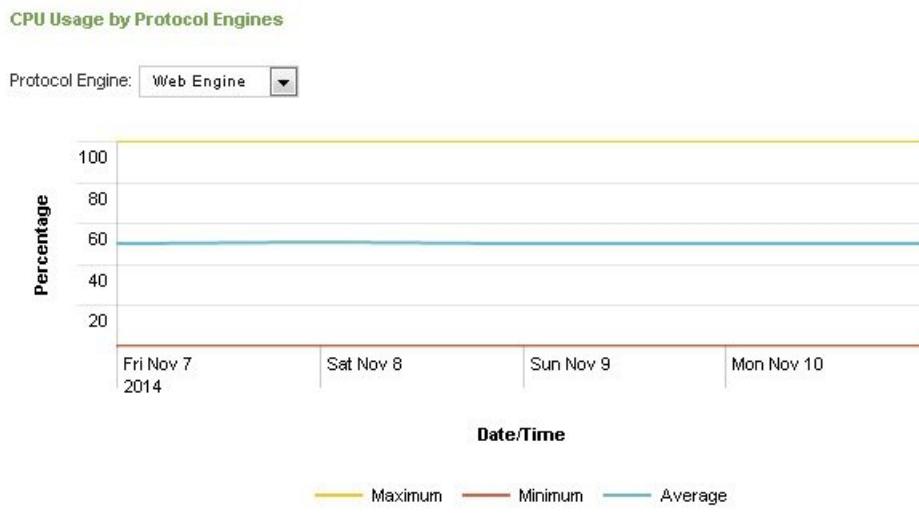
[View results](#)

The following table describes the Disk Usage chart:

Table 142: Disk Usage Chart & Description

Chart	Description
Disk Usage	Illustrates the percentage of disk consumed by a delivery server for the specified time range.
Chart Information	The information within this chart is shown in an area graph with Date/Time along the X-axis and the disk usage as Percentage along the Y-axis. The legend representing the graph is Average.
Chart Formula	The formula used to derive the graph is: average of disk usage (%) for the given delivery server.
Chart Filters	This chart uses Time Range, Delivery Server Group, and Delivery Server as filters.

CPU Usage by Protocol Engines



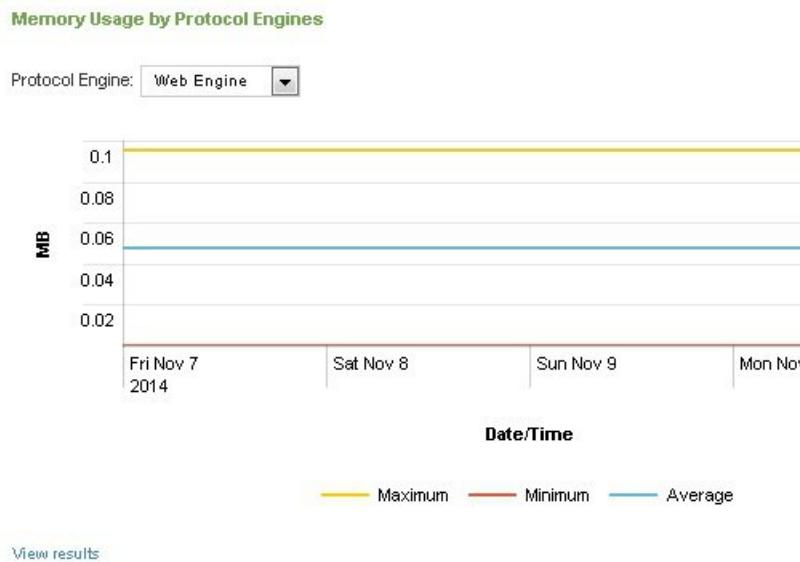
[View results](#)

The following table describes the CPU Usage by Protocol Engines chart:

Table 143: CPU Usage by Protocol Engines Chart & Description

Chart	Description
CPU Usage by Protocol Engines	Illustrates the percentage of CPU consumed by a protocol engine of a delivery server for the specified time range.
Chart Information	The information within this chart is shown in a line graph with Date/Time along the X-axis and the CPU usage as Percentage along the Y-axis. The legends representing the graph are Maximum, Minimum, and Average.
Chart Formula	<p>The formula used to derive the graph is:</p> <ul style="list-style-type: none"> • Maximum—Maximum of CPU usage (%) for the given delivery server. • Minimum—Minimum of CPU usage (%) for the given delivery server. • Average—Average of CPU usage (%) for the given delivery server.
Chart Filters	This chart uses Protocol Engine, Time Range, Delivery Server Group, and Delivery Server as filters.

Memory Usage by Protocol Engines



[View results](#)

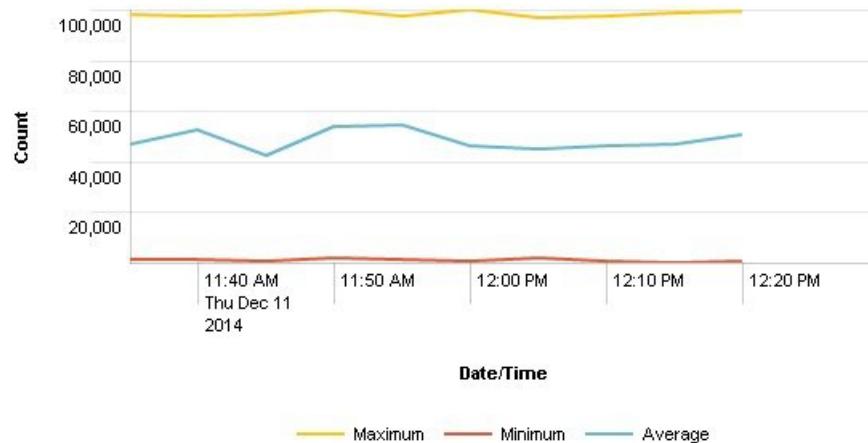
The following table describes the Memory Usage by Protocol Engines chart:

Table 144: Memory Usage by Protocol Engines Chart & Description

Chart	Description
Memory Usage by Protocol Engines	Illustrates the memory consumed by a protocol engine of a delivery server for the specified time range.
Chart Information	The information within this chart is shown in a line graph with Date/Time along the X-axis and the memory usage as MB along the Y-axis. The legends representing the graph are Maximum, Minimum, and Average.
Chart Formula	<p>The formula used to derive the graph is:</p> <ul style="list-style-type: none"> • Maximum—Maximum of memory usage (MB) for the given delivery server. • Minimum—Minimum of memory usage (MB) for the given delivery server. • Average—Average of memory usage (MB) for the given delivery server.
Chart Filters	This chart uses Protocol Engine, Time Range, Delivery Server Group, and Delivery Server as filters.

TCP Server Connections

TCP Server Connections



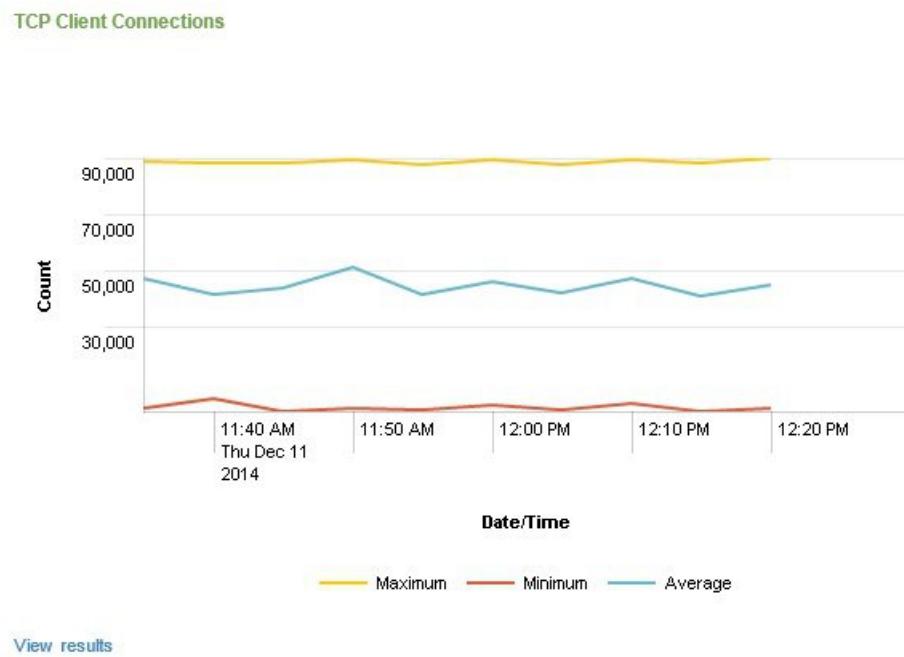
[View results](#)

The following table describes the TCP Server Connections chart:

Table 145: TCP Server Connections Chart & Description

Chart	Description
TCP Server Connections	Illustrates the number of TCP server connections established in a delivery server for the specified time range.
Chart Information	The information within this chart is shown in a line graph with Date/Time along the X-axis and Count of TCP server connections along the Y-axis. The legends representing the graph are Maximum, Minimum, and Average.
Chart Formula	The formula used to derive the graph is: maximum, minimum, and average TCP server connections for the given delivery server.
Chart Filters	This chart uses Time Range, Delivery Server Group, and Delivery Server as filters.

TCP Client Connections



The following table describes the TCP Client Connections chart:

Table 146: TCP Client Connections Chart & Description

Chart	Description
TCP Client Connections	Illustrates the number of TCP client connections established in a delivery server for the specified time range.
Chart Information	The information within this chart is shown in a line graph with Date/Time along the X-axis and Count of TCP client connections along the Y-axis. The legends representing the graph are Maximum, Minimum, and Average.
Chart Formula	The formula used to derive the graph is: maximum, minimum, and average TCP client connections for the given delivery server.
Chart Filters	This chart uses Time Range, Delivery Server Group, and Delivery Server as filters.

Service Router

This tab displays charts that indicates the health of system resources at service router level.

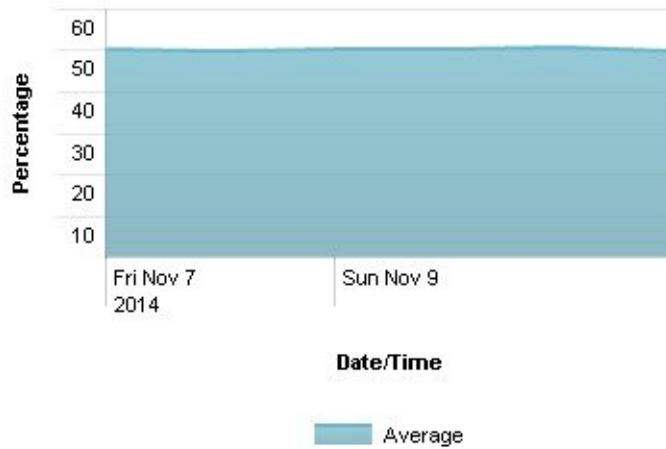
To access this tab, from the Home page, choose **Administration > CDN Health > Trend > Service Router**.

The following metrics are displayed here:

- CPU Usage
- Memory Usage
- Disk Usage
- CPU Usage for Service Routing
- Memory Usage for Service Routing
- TCP Server Connections
- TCP Client Connections

CPU Usage

CPU Usage



[View results](#)

The following table describes the CPU Usage chart:

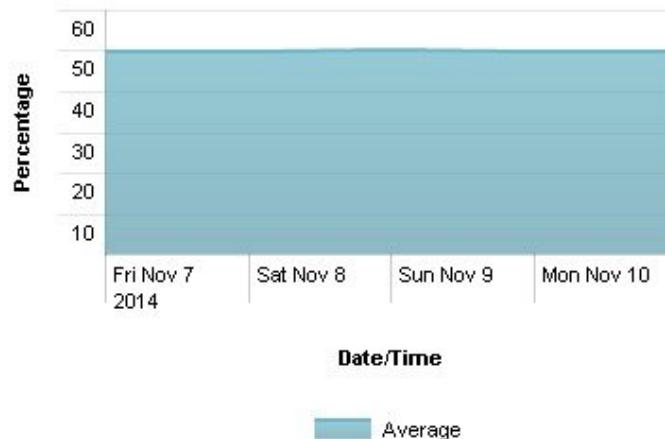
Table 147: CPU Usage Chart & Description

Chart	Description

CPU Usage	Illustrates the percentage of CPU consumed by a service router for the specified time range.
Chart Information	The information within this chart is shown in an area graph with Date/Time along the X-axis and the CPU usage as Percentage along the Y-axis. The legend representing the graph is Average.
Chart Formula	The formula used to derive the graph is: average of CPU usage (%) for the given service router.
Chart Filters	This chart uses Time Range, and Service Router as filters.

Memory Usage

Memory Usage



[View results](#)

The following table describes the Memory Usage chart:

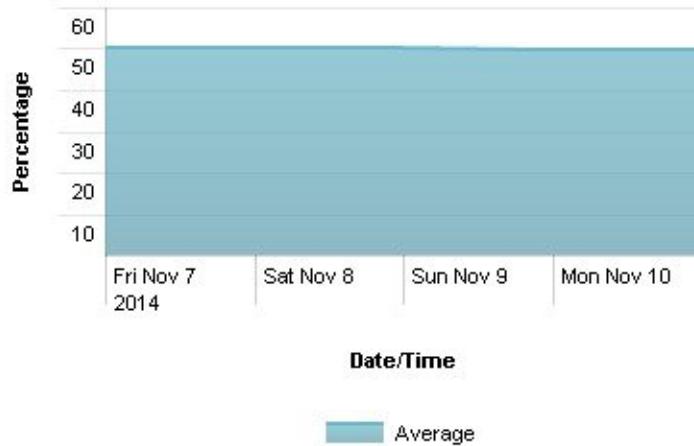
Table 148: Memory Usage Chart & Description

Chart	Description
Memory Usage	Illustrates the percentage of memory consumed by a service router for the specified time range.

Chart Information	The information within this chart is shown in an area graph with Date/Time along the X-axis and the memory usage as Percentage along the Y-axis. The legend representing the graph is Average.
Chart Formula	The formula used to derive the graph is: average of memory usage (%) for the given service router.
Chart Filters	This chart uses Time Range, and Service Router as filters.

Disk Usage

Disk Usage



[View results](#)

The following table describes the Disk Usage chart:

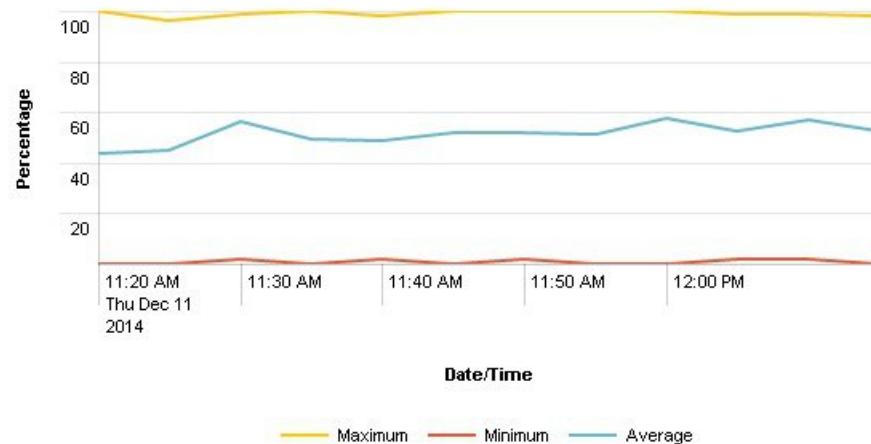
Table 149: Disk Usage Chart & Description

Chart	Description
Disk Usage	Illustrates the percentage of disk consumed by a service router for the specified time range.
Chart Information	The information within this chart is shown in an area graph with Date/Time along the X-axis and the disk usage as Percentage along the Y-axis. The legend representing the graph is Average.

Chart Formula	The formula used to derive the graph is: average of disk usage (%) for the given service router.
Chart Filters	This chart uses Time Range, and Service Router as filters.

CPU Usage for Service Routing

CPU Usage for Service Routing


[View results](#)

The following table describes the CPU Usage for Service Routing chart:

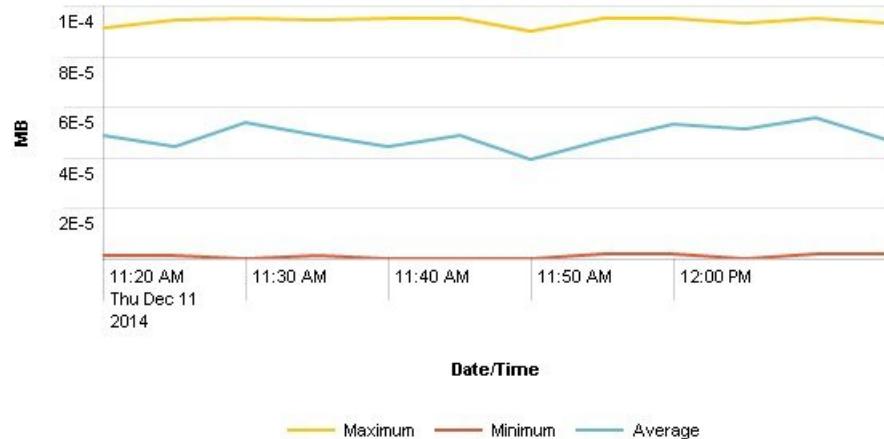
Table 150: CPU Usage for Service Routing Chart & Description

Chart	Description
CPU Usage for Service Routing	Illustrates the maximum, minimum, and average percentage of CPU consumed by a service router for the specified time range.
Chart Information	The information within this chart is shown in a line graph with Date/Time along the X-axis and the CPU usage as percentage along the Y-axis. The legends representing the graph are Maximum, Minimum, and Average

Chart Formula	The formula used to derive the graph is: <ul style="list-style-type: none">• Maximum—Maximum of CPU usage (%) for the given service router.• Minimum—Minimum of CPU usage (%) for the given service router.• Average—Average of CPU usage (%) for the given service router.
Chart Filters	This chart uses Time Range, and Service Router as filters.

Memory Usage for Service Routing

[Memory Usage for Service Routing](#)



[View results](#)

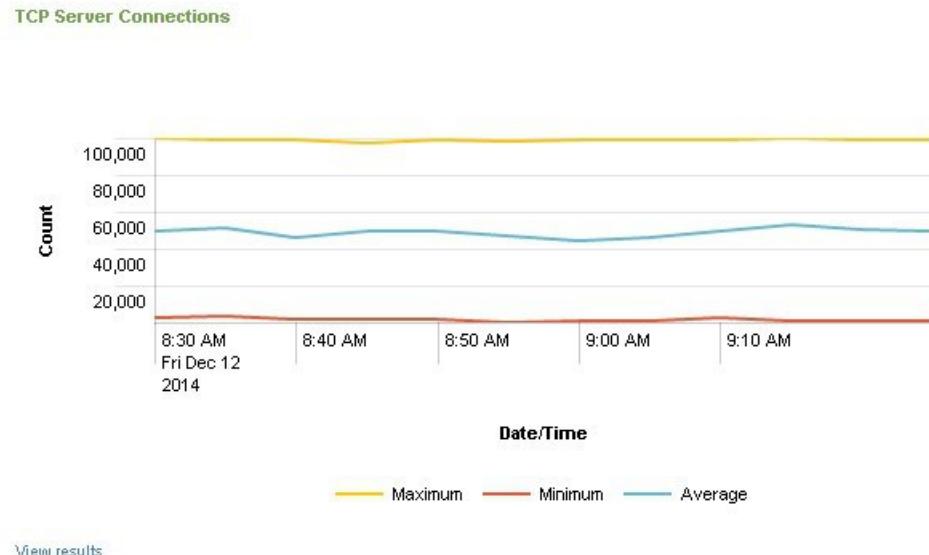
The following table describes the Memory Usage for Service Routing chart:

Table 151: Memory Usage for Service Routing Chart & Description

Chart	Description
Memory Usage for Service Routing	Illustrates the maximum, minimum, and average memory consumed by a service router for the specified time range.

Chart Information	The information within this chart is shown in a line graph with Date/Time along the X-axis and the memory usage as MB along the Y-axis. The legends representing the graph are Maximum, Minimum, and Average.
Chart Formula	The formula used to derive the graph is: <ul style="list-style-type: none"> • Maximum—Maximum of memory usage (MB) for the given service router. • Minimum—Minimum of memory usage (MB) for the given service router. • Average—Average of memory usage (MB) for the given service router.
Chart Filters	This chart uses Time Range, and Service Router as filters.

TCP Server Connections



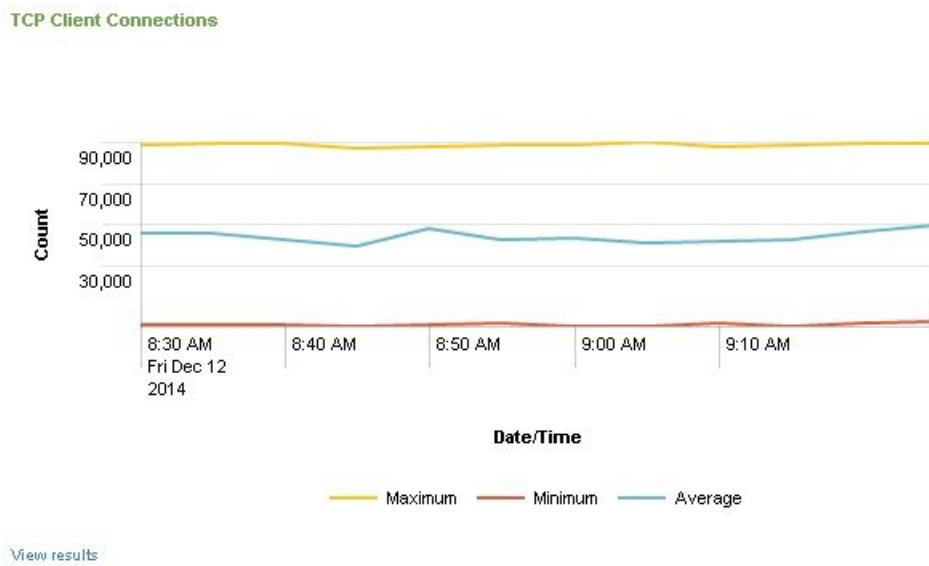
The following table describes the TCP Server Connections chart:

Table 152: TCP Server Connections Chart & Description

Chart	Description

TCP Server Connections	Illustrates the number of TCP server connections established in a service router for the specified time range.
Chart Information	The information within this chart is shown in a line graph with Date/Time along the X-axis and Count of TCP server connections along the Y-axis. The legends representing the graph are Maximum, Minimum, and Average.
Chart Formula	The formula used to derive the graph is: maximum, minimum, and average TCP server connections for the given service router.
Chart Filters	This chart uses Time Range, and Service Router as filters.

TCP Client Connections



The following table describes the TCP Client Connections chart:

Table 153: TCP Client Connections Chart & Description

Chart	Description
TCP Client Connections	Illustrates the number of TCP client connections established in a service router for the specified time range.

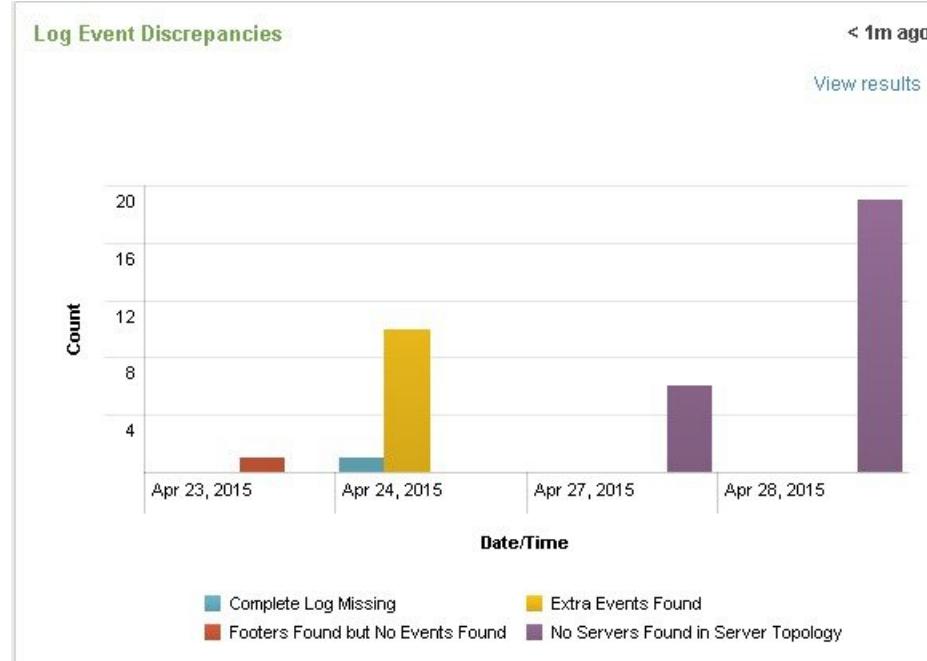
Chart Information	The information within this chart is shown in a line graph with Date/Time along the X-axis and Count of TCP client connections along the Y-axis. The legends representing the graph are Maximum, Minimum, and Average.
Chart Formula	The formula used to derive the graph is: maximum, minimum, and average TCP client connections for the given service router.
Chart Filters	This chart uses Time Range, and Service Router as filters.

Log Event Discrepancies

The Log Event Discrepancies illustrates the data loss information for the specified time interval. The charts related to Content and Viewer metrics will not get populated for the day(s) plotted in Log Event Discrepancies chart.

You can drill down the data in the chart at granular level. Click on the graph to view the data loss reason and count of missing events on that particular date. Click the corresponding row to view the missing file names.

To access the Log Event Discrepancies, from the main page, choose **Administration > Log Event Discrepancies**.



The following table describes the chart available within this dashboard.

Table 154: Log Event Discrepancies Chart & Description

Chart	Description
Log Event Discrepancies	Illustrates the amount of data loss occurred while receiving the transaction log from the universal forwarder.
Chart Information	The information within this chart is shown as a column chart with Date/Time along the X-axis and Count along the Y-axis. The legends representing the graph are reasons for data loss.
Chart Formula	The formula used to derive the graph is: total logs missed during log transaction.
Chart Filter	This chart uses Time Range Picker—Previous day, Last 7 days, Last 30 days, as filter.



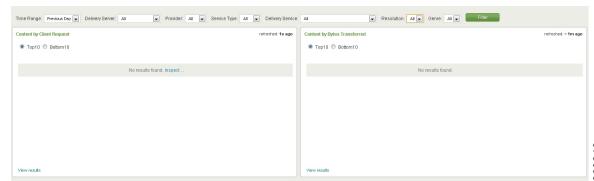
Troubleshooting

- Troubleshooting Analytics Dashboards, page 233
- Troubleshooting Splunk Licensing Issues, page 234
- Troubleshooting Splunk Forwarder Issues, page 235
- Troubleshooting the Splunk Indexer, page 236
- Troubleshooting the Analytics Search Head, page 237
- Troubleshooting VDS-IS Provisioning, page 239
- Deleting Summarized Data, page 239
- Splunk License Violation, page 240

Troubleshooting Analytics Dashboards

The analytics system is a critical tool for troubleshooting run-time issues, as well as providing trending information that can be used for capacity planning and other purposes. If it is not properly operating, the ability to use it for troubleshooting is lost.

The most commonly observed behavior of the analytics system that is not working, is a lack of data. If any of the above functions are not operating properly, the Dashboards and Reports data may not appear, and the message “no result found” is displayed.



The following list provides possible problems that could arise while using the VDS Analytics:

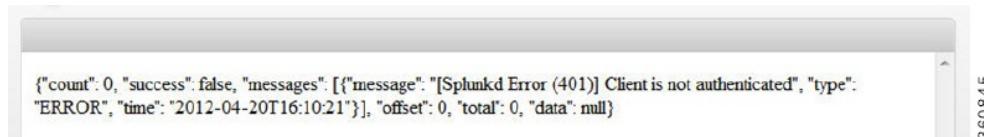
- Splunk licensing
- Splunk Forwarder not operating correctly
- Analytics Indexer not operating
- Search Head not operating

Troubleshooting Splunk Licensing Issues

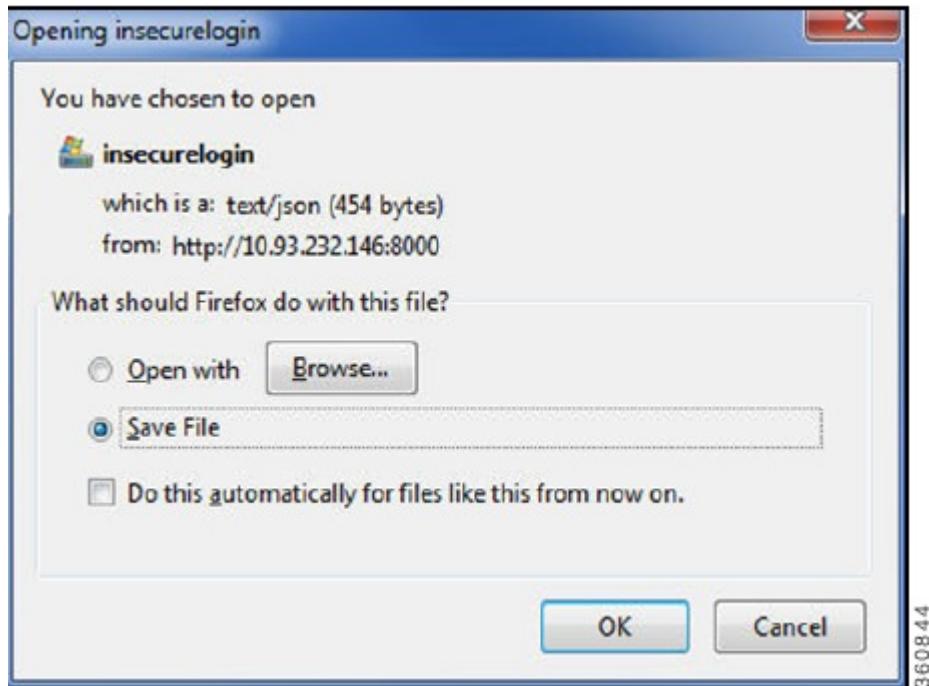
Depending on the browser being used, either Internet Explorer (IE) or Firefox, Splunk licensing issues may cause different errors to appear.

The following are examples of a Splunk licensing errors.

- Splunk licensing issues in IE.



- Splunk licensing issues in Firefox. In Firefox, an insecurelogin file will start to download. For example:



To troubleshoot Splunk licensing issues, perform the following steps:

Step 1 Copy the Splunk license file to your local machine, taking care to note the location, which will be used later in this procedure.

Step 2 Open the Splunk manager app on the Job Scheduler. Using the following:

Example:

<http://<IP of Job Sched>:8000/en-us/manager>

Username: **Admin** or **admin**

Example:

Password: **Beaumaris1**

- Step 3** Choose **Settings > Licensing**.
- Step 4** Select **Add License**.
- Step 5** Browse your machine to the location where you copied the license file. **Note:** Do not change the filename.
- Step 6** Select **Install**.
- Step 7** Return to the Licensing page and confirm whether the new license is added and is valid.
-

Troubleshooting Splunk Forwarder Issues

To verify that the Splunk Forwarder is functioning correctly, ensure that the application node expected to supply data, has an active forwarder.

To do this, perform the following steps:

-
- Step 1** SSH to the Forwarder.
- Step 2** Login to the Forwarder using, username: **bnet** and password: **password**.
- Step 3** At the Forwarder prompt, enter the PS command to verify that the Splunk Forwarder is running. For example:

Example:

```
[ bnet@FW ~]$ ps eax | grep splunkd | grep 8088
```

```
2256 ? Sl 0:52 splunkd -p 8088 start CONSOLE=/ dev /console SELINUX_IN IT=YES SHELL=/bin/bash TERM=linux USER=bnet INIT_VERSION=sysvinit-2.86 PATH=/home/bnet/splunkforwarder/bin:/sbin:/usr/sbin:/bin:/usr/bin_=~/home/bnet/splunkforwarder/bin/splunk runlevel=3 RUNLEVEL=3 PWD=/ LANG=en_US.UTF-8 previous=N P REVLEVEL=N SHLVL=3 HOME=/home/bnet LOGNAME=bnet HOSTNAME=FW SPLUNK_HOME=/home/bnet/splunkforwarder SPLUNK_DB=/home/bnet/splunkforwarder/var/lib/splunk S PLUNK_SERVER_NAME=splunkforwarder SPLUNK_WEB_NAME=splunkweb LD_LIBRARY_PATH=/home/bnet/splunkforwarder/lib LDAPCONF=/home/bnet/splunkforwarder/etc/openldap/ldap.conf
```

```
2257 ? Ss 0:04 splunkd -p 8088 start CONSOLE=/ dev /console SELINUX_IN IT=YES SHELL=/bin/bash TERM=linux USER=bnet INIT_VERSION=sysvinit-2.86 PATH=/home/bnet/splunkforwarder/bin:/sbin:/usr/sbin:/bin:/usr/bin_=~/home/bnet/splunkforwarder/bin/splunk runlevel=3 RUNLEVEL=3 PWD=/ LANG=en_US.UTF-8 previous=N P REVLEVEL=N SHLVL=3 HOME=/home/bnet LOGNAME=bnet HOSTNAME=FW SPLUNK_HOME=/home/bnet/splunkforwarder SPLUNK_DB=/home/bnet/splunkforwarder/var/lib/splunk S PLUNK_SERVER_NAME=splunkforwarder SPLUNK_WEB_NAME=splunkweb LD_LIBRARY_PATH=/home/bnet/splunkforwarder/lib LDAPCONF=/home/bnet/splunkforwarder/etc/openldap/ldap.conf
```

```
[ bnet@FW ~]$
```

- Step 4** If Splunk Forwarder is not running, restart it by using the following command. In the following example, a Splunk Forwarder restart example is shown.

Example:

```
/etc/init.d/splunkforwarder restart
```

```
Restarting Splunk ...
```

Password:
 Stopping splunkd ...
 Shutting down. Please wait, as this may take a few minutes.
 . [OK]
 Stopping splunk helpers...
 [OK]
 Done.
 Splunk > Needle. Haystack. Found.
 Checking prerequisites...
 Checking mgmt port [8088]: open
 Checking conf files for typos...
 All preliminary checks passed.
 Starting splunk server daemon (splunkd)...
 [OK]
 Done.touch : cannot touch `/var/lock/subsys/splunk': Permission denied

If the nodes are forwarding, there should be constant updates in the splunkd log file located in "/opt/splunkforwarder/var/log/splunk". If the processes are running and the log is not being updated, contact Cisco Customer Support.

Troubleshooting the Splunk Indexer

Once the Analytic Forwarder is verified to be functioning properly, verify the operation of Splunk Indexer. To do this, perform the following steps:

Step 1 ssh into the IP address of the Indexer.

Step 2 Using the **netstat** command, list the monitoring ports. For example:

Example:
 [bninet@IDX netstat -a 2>>/dev/null | grep 8089
 tcp 0 0 *:8089 *:* LISTEN
 [bninet@IDX ~]\$

Step 3 If there are no jobscheduler processes listening on port 8089, then the indexer is not functioning. Restart the indexer. For example:

Example:
 [bninet@IDX ~]\$ sudo /etc/init.d/splunk restart

Restarting Splunk ...
splunkweb is not running.
Stopping splunkd ...
Shutting down. Please wait, as this may take a few minutes.
..... [OK]
Stopping splunk helpers... [OK]
Done.
Splunk > The IT Search Engine.
Checking prerequisites...
Checking mgmt port [8089]: open
Checking configuration... Done.
Checking index directory...
Validated databases: _audit _blocksignature _internal _thefishbucket cdn-mgr cdnmanager cms dsm history main os summary
Done
Bypassing local license checks since this instance is configured with a remote license master.
Success
Checking conf files for typos...
All preliminary checks passed.
Starting splunk server daemon (splunkd)...
[OK]
Done.

Troubleshooting the Analytics Search Head

To verify that the Analytics Node (often referred to as the search head) is operating properly, perform the following steps:

Step 1 ssh into the IP address of the analytics node.

Step 2 Using the **netstat** command, list the monitoring ports. For example:

Example:

```
[ bninet@IDX netstat -a 2>>/ dev /null | grep 8089
tcp 0 0 *:8089 *:* LISTEN
```

```
[bninet@IDX ~]$
```

Step 3 If there are no analytics node processes listening on port 8089, then the nodes are not functioning. Restart Splunk. For example:

Example:

```
[ bninet@IDX ~]$ sudo /etc/init.d/splunk restart
```

Restarting Splunk ...

splunkweb is not running.

Stopping splunkd ...

Shutting down. Please wait, as this may take a few minutes.

```
..... [ OK ]
```

Stopping splunk helpers... [OK]

Done.

Splunk > The IT Search Engine.

Checking prerequisites...

Checking mgmt port [8089]: open

Checking configuration... Done.

Checking index directory...

Validated databases: _audit _blocksignature _internal _thefishbucket cdn-mgr cdnmanager cms dsm history main os summary

Done

Bypassing local license checks since this instance is configured with a remote license master.

Success

Checking conf files for typos...

All preliminary checks passed.

Starting splunk server daemon (splunkd)...

```
[ OK ]
```

Done.

In addition, the command **sudo /home/bninet/splunk/bin/splunk search 'index= dsm | stats count' -auth admin:changeme** can be run to show that the analytics node is capable of processing data from the indexer, as shown below. This command sends scrolling data to the screen, which is compressed in the output below:

Example:

```
[ bninet@Search ~]$ /home/bninet/splunk/bin/splunk search 'index= dsm | stats count' -auth admin:changeme  
count
```

```
-----
```

```
0
```

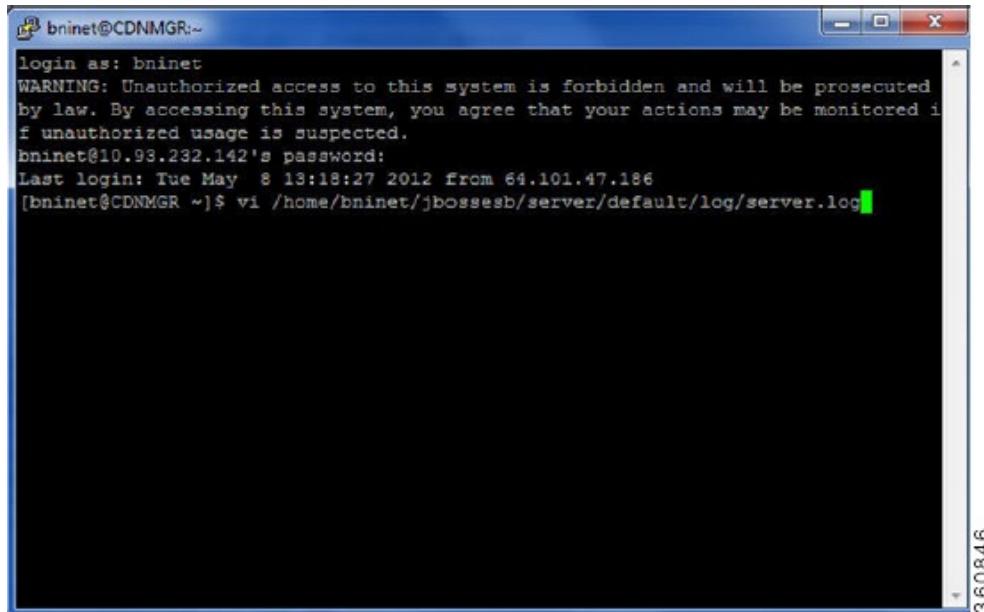
Troubleshooting VDS-IS Provisioning

The server.log file, located within the /home/bninet/jbossesb/server/default/log/ folder, can be used to troubleshoot VDS-IS provisioning problems.

To access the server.log file, perform the following step:

ssh into the CDN Manager node and then enter the following command:

/home/bninet/jbossesb/server/default/log/server.log

A screenshot of a Windows Command Prompt window titled "bninet@CDNMGR:~". The window shows the following text:

```
login as: bninet
WARNING: Unauthorized access to this system is forbidden and will be prosecuted
by law. By accessing this system, you agree that your actions may be monitored if unauthorized usage is suspected.
bninet@10.98.232.142's password:
Last login: Tue May  8 13:18:27 2012 from 64.101.47.186
[bninet@CDNMGR ~]$ vi /home/bninet/jbossesb/server/default/log/server.log
```

The cursor is at the end of the command "vi /home/bninet/jbossesb/server/default/log/server.log".

Deleting Summarized Data

To delete the summarized data, perform the following steps:

-
- Step 1** Launch the JS node web interface `http://<JSipaddress>:8000`
 - Step 2** Login to the Splunk web interface by providing the credentials; Username: **admin** and Password: **Beaumaris1**
 - Step 3** Select **App** and then select **Search**.
 - Step 4** Execute the search query [index=summary report="" host="" | delete]
Provide the appropriate report name and hostname in the query.

Example:

```
[index=summary report=mobity_client_daily host= secondary-JS | delete]
```

Step 5

Validate the count by issuing the search query [index=summary report=mobity_client_daily]

Note can_delete role is already added for Admin. However, the above query will not work in a normal search page.

Splunk License Violation

Violations occur when you exceed the maximum indexing volume allowed for your license. If you exceed your licensed daily volume on any one calendar day, you will get a violation *warning*. The message persists for 14 days. If you have 5 or more warnings on an Enterprise license or 3 warnings on a Free license in a rolling 30-day period, you are in *violation* of your license and search will be disabled.

**Note**

Summary index volume is not counted against your license.

If you get a violation warning, you have until midnight (going by the time on the license master) to resolve it before it counts against the total number of warnings within the rolling 30-day period.

During a license violation period:

- Splunk does not stop indexing your data. Splunk only blocks search while you exceed your license.
- Searches to the _internal index are not disabled. This means that you can still access the Indexing Status dashboard or run searches against _internal to diagnose the licensing problem.

For any queries on licensing, contact the Cisco Accounting team.