Cisco Videoscape Distribution Suite Service Manager

Product Overview

Service providers are distributing content today using methods that are more complicated than ever before. The distribution of live TV and video on demand (VoD) to multiple screen types, including TV, PCs, and mobile devices, using HTTP, adaptive bitrate protocols, and content delivery networks (CDNs), is becoming common. The challenges facing service providers include multivendor environments and components, monitoring video quality across different networks and different parts of networks, troubleshooting, capacity planning, and proactive monitoring. To gain insight into video delivery, service providers have developed their own custom, proprietary analytics systems that increase their operating expenses (OpEx) dramatically.

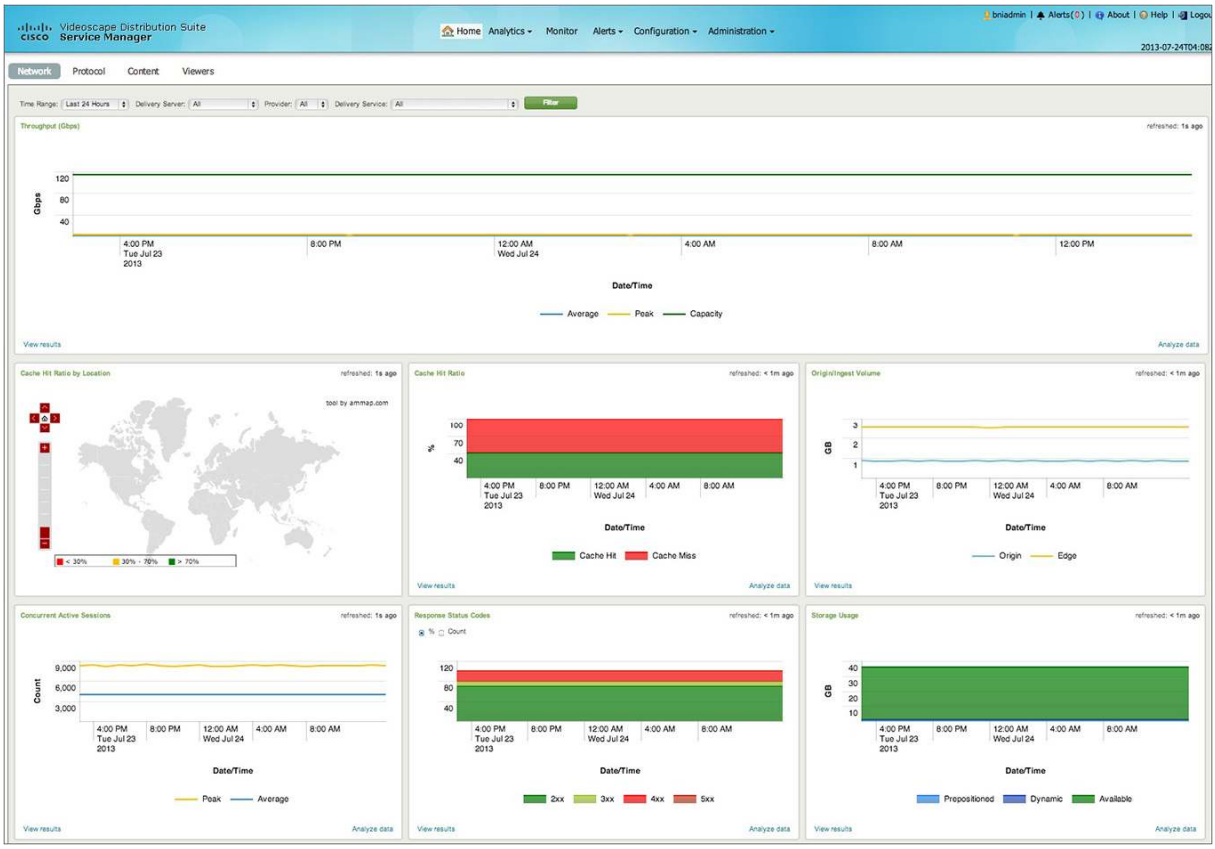
Cisco's Videoscape™ Distribution Suite Service Manager (VDS SM) is a purpose-built CDN analytics and reporting solution that lets operators gain insight into their CDN Infrastructure with a low TCO and immediate benefits to the operations teams. It provides comprehensive insights into the delivery of content, in terms of throughput, utilization, efficiency, successes and failures, video content delivery trends, and viewership trends. Cisco VDS SM simplifies access to actionable data and analytics, so that service teams can proactively monitor activity and take action before problems occur. It also delivers comprehensive dashboards and trending reports that capture a wealth of valuable information for CDN capacity planning and delivery optimization.

Features and Benefits

Scorecards and Dashboards That Provide At-a-Glance Status of Video Delivery in Real Time

Cisco VDS SM ingests gigabytes of information from the CDN delivery appliance logs in real-time and presents insights in the form of scorecards, bringing together key performance indicators (KPIs) onto a single view. This makes the data actionable for the operator. The scorecards capture the insights from network, protocol, content, and viewer perspectives (Figure 1). From a network perspective, it shows the peak and average bandwidth on the CDN, the CDN cache efficiency, bandwidth served from the origin servers, the load on the CDN, HTTP response codes, and storage utilization. For operators that deliver video using multiple protocols, such as Apple HTTP Live Streaming (HLS), Microsoft Smooth Streaming, and Adobe progressive download, the scorecard shows the KPIs by protocol. This information helps operators diagnose root causes at a glance. The content scorecard shows the "top 10" and "bottom 10" content, based on request count, bytes delivered, delivery server, city, session duration, and more. The viewer scorecard shows who is viewing the content by geographic location, unique viewers by IP, by city, by ISP, by last mile speed, by download size, and by duration of views.

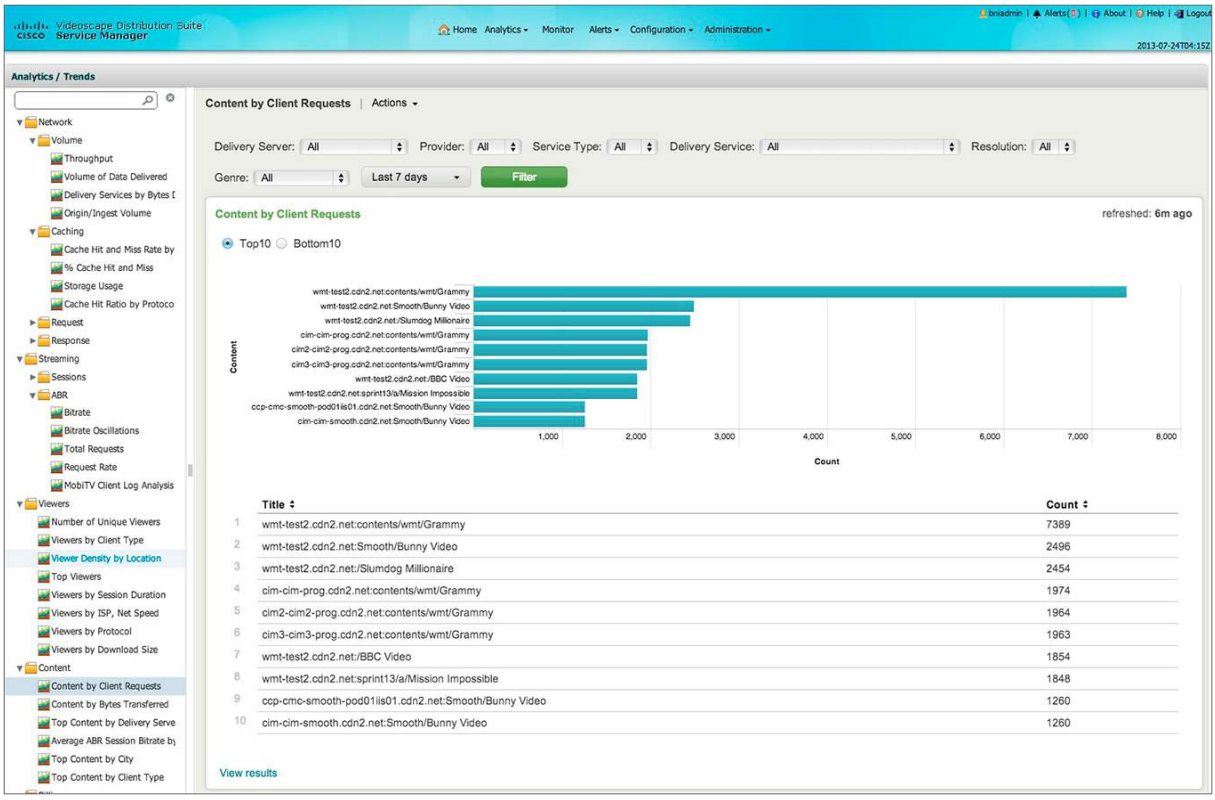
Figure 1. Scorecards



Comprehensive Trending Reports for Capacity Planning and Understanding Viewing Trends

For capacity planning and CDN optimization, operators need information on KPIs and trends over the last hour, day, week, month, and year. They also need information on viewer trends by time of day, location, and content type to pre-position content on caches or increase the capacity of some delivery servers. For all such exercises, the Cisco VDS SM provides hundreds of reports (Figure 2), and the data can be viewed in a variety of different chart types to spot anomalies easily.

Figure 2. 100's of Canned Trending Reports



Multidimensional Analytics

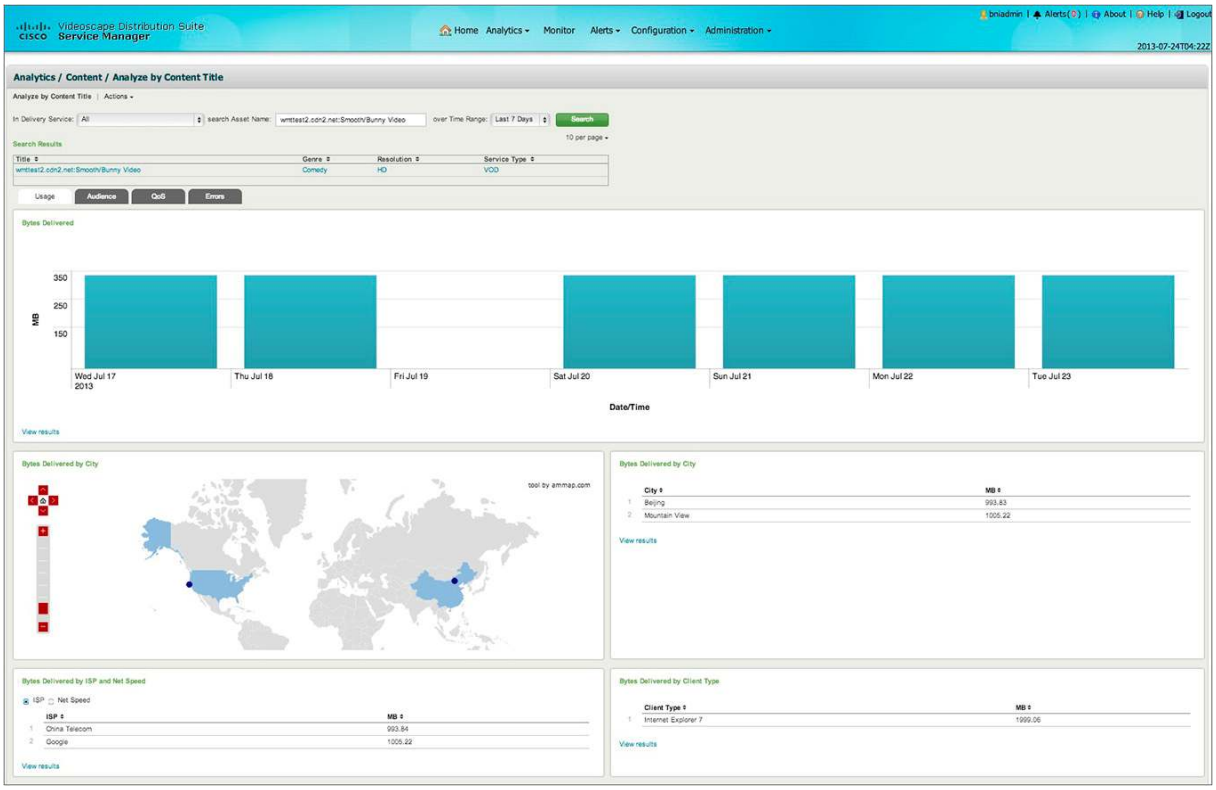
When static reports can provide the insights an operator is looking for, Cisco VDS SM supports analysis of some KPIs, including viewership, bandwidth delivered, bytes delivered, cache efficiency, active sessions, response codes, and storage usage, using different metrics (Figure 3). For example, viewers can be analyzed by service and further split by city or ISP, duration watched, genre, or resolution (standard definition or high definition) to mine interesting details.

Figure 3. Multidimensional Analysis

Customer Support and Troubleshooting Tools

Scorecards and reports are generally best suited for summarizing vast amounts of information, so the operator can take action. At times, however, customer support personnel or troubleshooting engineers need more detailed information for a single video asset or to deal with a particular customer complaint. For situations like these, Cisco VDS SM provides tools for locating that data (Figure 4). By simply entering the name of the single video asset, all details are provided about how many times that asset was delivered by CDN, who watched the asset, from what city, over which ISP, at what last-mile speed, and over which device type. Similarly, when finding information about a subscriber complaint, the operator can enter an IP address to see details of the customer's activity, including the number of video sessions, session duration, quality of the session, and the time of day when the video was watched, to find out whether the subscriber is having a good experience or not.

Figure 4. Single Asset and Single Viewer Analysis



Powerful Customization Capabilities

Despite all the scorecards, reports, and troubleshooting tools, operators sometimes need the ability to customize reports and dashboards to fit their workflows or adapt to their terminology. The Cisco VDS SM platform provides powerful capabilities for creating customized reports and dashboards. Unlike other platforms, which might require feature requests to vendors, the Cisco VDS SM lets operators adapt presentations themselves to suit their needs. New charts can be created from existing ones, and different graphics can be included. These charts or reports can then be stored for later use, in addition to providing immediate views of metrics. To allow data to be presented using an organization's familiar terminology, the Cisco VDS SM provides unique dynamic lookup tables that can be used to map data in the system to organization-specific terminology. For example, the Cisco VDS SM uses URLs to automatically determine the type of content, such as high definition or standard definition, live or VoD, asset title, genre, asset grouping, and more. However, if this information is not available in the URL, then lookup tables can be edited by the operator to allow this translation.

Northbound Interface

Because no analytics solution can solve all problems, there is a need to mix CDN data with subscriber management systems, billing information. or other network delivery information. To accommodate this need, Cisco VDS SM provides a flexible, HTTP-based northbound Representational State Transfer (REST) API, so data can be exported into northbound systems. By ingesting gigabytes of log data, summarizing the data into KPIs, and generating daily, weekly, and monthly summary data, Cisco VDS SM offloads the processing required in northbound systems.

Carrier-Grade Architecture That Scales to Handle Petabytes of Data

Cisco VDS SM is build on robust, industry-proven Splunk software. According to IDC, unstructured data, much of it generated by machines, accounts for more than 90 percent of the data in today's organizations. This type of machine-generated data is massive in scale and contains a definitive record of transaction activity, system behavior, application performance, user actions, security threats, and fraudulent activity. Traditional technologies built on relational or multidimensional databases cannot handle the complexity or scale of today's massive volumes of machine data. Nor do they allow the flexibility to ask any question - or get questions answered in real time - which is now a user expectation. Splunk focuses specifically on the challenges and opportunities of effectively managing this type of data, in large volumes, helping organizations unlock the largely untapped value hidden within. That's why many organizations now consider Splunk their platform for machine data. Splunk now has over 5600 customers in more than 90 countries. These organizations are using Splunk to improve service levels, reduce operational costs, mitigate security risks, improve compliance, enhance development and operations collaboration, and create new product and service offerings. Cisco combines Splunk software with its video, CDN, and networking domain expertise to build a powerful application like Cisco VDS SM, so that operators can get outstanding value immediately, using the proven capabilities of Splunk. Operators can also take advantage of the vast Splunk experience to further extend the product functionality, instead of being tied to a proprietary offering.

Fine Tuned with Cisco UCS for Lowest Cost

Delivered with virtual machines for elasticity, Cisco VDS SM software is tested and Interoperable with the Cisco Unified Computing System™ (UCS®) Data Center platform to provide increased density for data mining, broader scale across the entire CDN, and lower capital expenditures (CapEx) and OpEx.

Ordering Information

Table 1 shows the Cisco VDS SM product part numbers required to place an order, including application, feature licenses, and capacity licenses. Cisco VDS SM is certified on high-performance Cisco Unified Computing System series servers and blades. Please review your requirements with your account team, who will also be able to provide you with specific benchmarked server configurations. To place an order, visit the Cisco Ordering homepage and refer to Table 1.

Table 1. Ordering Information for Cisco Videoscape Distribution Suite Service Manager

Type	Description	Part Number
Application	VDS-SM CDN Insight Base Software (Scorecards, Monitor, administration, configuration)	R-VDS-SM-CDN=
Feature licenses	VDS SM CDN Insights Enterprise License (Daily/weekly/monthly Reports, Analyze by Pivoting, Custom reports/dashboards, Alerts, Northbound data extraction)	L-VDS-SM-CDN-ENT
	VDS SM CDN Insights Wholesale provisioning and monitoring License	L-VDS-SM-CDN-RESL
	VDS SM Geo Location Database License	L-VDS-SM-GLOC-DAT
Capacity licenses	VDS-SM 1 GB indexed/day License	L-VDS-SM-1GB

For More Information

For more information about the Cisco Videoscape Distribution Suite, visit: http://www.cisco.com/go/Videoscape.

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San Jose, CA

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