Service Control EasyApp: Measuring Quality of Experience

Summary

This Cisco® Service Control Engine (SCE) EasyApp guide explains how you can use Cisco SCE to understand the distribution of traffic among subscribers, identify bandwidth-hogs, and determine fair-usage policies that best apply to the your network and environment.

EasyApp Category	SCE Equipment and Software Version	Type of Effort
Visibility and Business Intelligence	**Hardware:** Cisco SCE 2000 and 8000 Series Service Control Engine. **Software:** Release 3.5 or later.	A few hours for configuration and report generation. We recommend repeating the process regularly to keep up to date with trends in your network.

Traffic Distribution among Subscribers

No matter the type of network you operate, different subscribers will have different needs. Some will log in every day, use bandwidth-heavy applications like peer-to-peer (P2P) file sharing or video streaming, and create large amounts of traffic. Others will use the network only occasionally, or use it for undemanding applications such as browsing the web or listening to music online.

The business model behind network access is equally complex: In some cases "flat fee access" provides unlimited best-effort Internet access to all subscribers. Others network service providers create billing plans to match the needs of different tiers of users. Other still network operators implement bandwidth-caps and limits to regulate usage and avoid abuse.

Regardless of the model used by your organization, getting a better understanding of the distribution of network traffic across the subscriber base is crucial in order to properly plan, implement, and monitor network policies. This EasyApp guide explains how to use the Cisco SCE for this purpose, providing critical information for:

- **Network Planning:** Provide critical data on average and peak consumption rates to assess the appropriate levels of network over-subscription, anticipate congestion, and better plan network upgrades.
- **Marketing:** Understanding how subscribers use the network assists in financial modeling, service planning and uncovering market potential.
- **Operations and Support:** By knowing how average users and power users utilize the network, support personnel are better equipped to address individual customer complaints in a timely and sensitive manner.

Implementation

To generate reports on traffic distribution, the Cisco SCE must be configured in either anonymous or subscriber-aware mode. Please refer to the SCE documentation at http://www.cisco.com/en/US/products/ps6135/products_user_guide_list.html for details about setting the platform for report generation.

By generating the reports shown in Figure 1 on an ongoing basis, you can give your organization a greater understanding of the distribution of traffic among subscribers.

**Figure 1.** Cisco SCE Service Control Reports

Cumulative Distribution of Subscriber Usage

This report shows the percentage of traffic consumed by the top percentile of network consumers.

Typically, distribution exhibits the "80-20 rule," with 20 percent of subscribers account for 80 percent of traffic. However, higher percentages (such as 20 percent of subscribers accounting for 90 percent of traffic) can occur. If your network is congested and shows significant usage by the top percentile of users, you may need to implement usage caps.

Note: You can filter this report to display information about specific services, such as P2P or streaming.

Interactive Report -> Demographic Data and Service Popularity -> Cumulative Distribution of Subscriber Usage -> rep1
Parameter Choice [*]
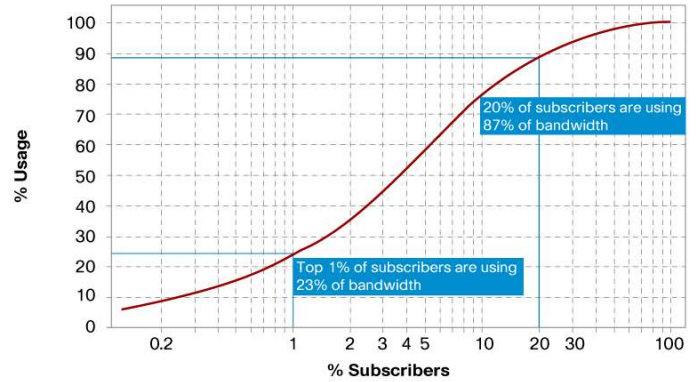

Subscribers Average Consumption

This report helps operators understand the potential impact of volume-based usage caps or acceptable usage policies (AUP) by indicating the percentage of users consuming more than a certain aggregated amount.

Interactive Report -> Demographic Data and Service Popularity -> Subscribers Average Consumption ->
Parameter Choice [*]
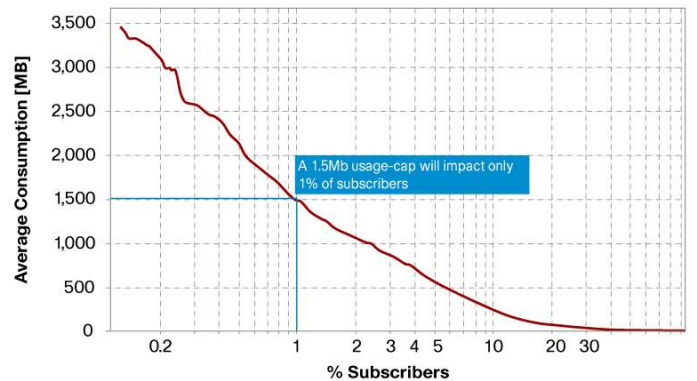
Active Subscribers Per Service and Global Bandwidth Per Service

The combination of these two reports helps demonstrate a critical fact: the amount of bandwidth consumed by certain applications is not uniformly correlated to the number of subscribers using them. In this example, we see that while only a small percentage of subscribers are actually using P2P applications (less than 500 out of 2000-4000, as shown in the top graph), the amount of traffic they generate is about 50 percent of the total amount (see bottom graph).
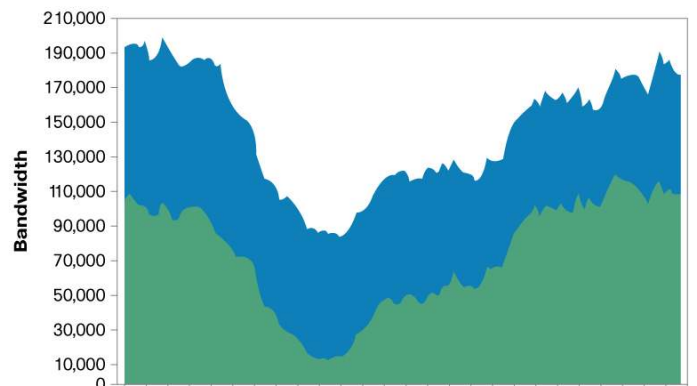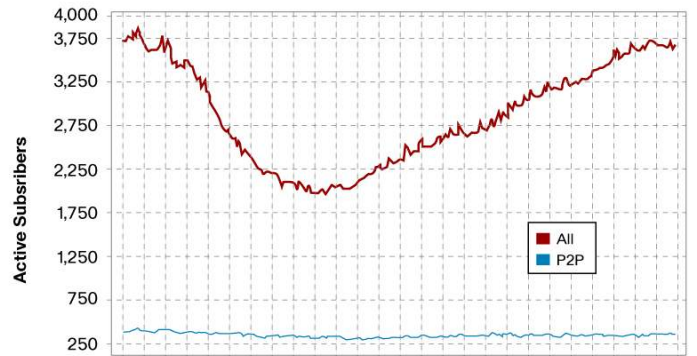
For More Information

The Cisco SCE EasyApp guides provide practical, actionable advice on the Cisco SCE platform that will help you learn more about network usage patterns, and also help you to reduce costs and optimize the network's behavior to provide a superior experience for your users. Browse the full selection of Cisco Service Control EasyApp guides at http://www.cisco.com/go/servicecontrol.

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