

Service Control Solution Benefits for Carriers

1. Executive Summary

Allot offers carriers and Internet Access service providers new ways to enhance their broadband access services resulting in increased revenues, reduced operating/infrastructure costs and enhanced customer loyalty. Specifically, implementation of Allot's service control solution results in innovative new service plans and billing models designed to retain and attract subscribers, control P2P/recreational usage, manage "triple play" services and protect the network from malicious traffic.

2. Allot Environment

Allot subscriber-level service control solutions are deployed at the network edge (POP) next to the subscribers' aggregation points. At these locations, all the subscriber traffic is visible to the service control device, allowing full monitoring, control and collection of usage information at the level of the subscriber and/or an application.

3. Service Control Benefits to the Carrier

Carriers are utilizing Allot's service control solution for the following reasons:

- **Managing Over-Subscription** – enables carriers to successfully serve more subscribers over a given infrastructure. In an environment in which the access pipe to the carrier network is shared by subscribers (such as cable, wireless and satellite networks), operating costs and churn can be reduced by increasing the efficiency of existing infrastructure and minimizing or delaying the need for infrastructure upgrades.
- **Offering Premium Services** – increase revenues by providing subscribers with new choices of premium services, resulting in the ability to target and attract new subscribers and increase the ARPU (Average Revenue per User).
- **Advanced Billing Models** – implementing advanced billing models based on actual use of network services gives carriers the flexibility and intelligence needed to reconcile their network service offerings with their subscribers' actual network usage.
- **Managing Security Threats** – control and contain security threats to subscribers and the carrier network
- **Network Monitoring** – understand user- and application-level network utilization for trouble shooting, analysis and long-term planning

3.1 Managing Over-Subscription

With Allot, carriers can manage over-subscription (for the last mile access link) intelligently, using the following control facilities:

- **Fairness** – ensure that all subscribers with the same service/rate receive the same performance. This capability also prevents situations in which a small percentage of subscribers monopolize the network, leading to costly customer service complaints. In addition, carriers can prioritize sensitive applications (such as Web browsing) that subscribers tend to use when judging the quality of their service. The result -- existing and potential subscribers will have a better user experience and impression of the network's quality of service.

- **P2P Control** – P2P is the main data application used today. In many networks, the P2P file sharing applications are responsible for 80% of the total network traffic. The most effective way to control over-provisioning is to control P2P for each subscriber – either for his file downloads and/or for uploads performed by off-net users.

3.2 Offering Premium Services

With the Internet becoming the main channel for combined data, voice and video services communication for both residential and business subscribers, the quality available by using the Internet's inherent "best effort" approach does not satisfy customer expectations. In order for carriers to develop premium surcharges for these new premium services, it is necessary to clearly identify and manage network traffic.

With Allot's service control, carriers can offer the following premium services (and more):

- **Tiered Services** – several levels of service can be offered to subscribers, including: varying levels of bandwidth maximums, bandwidth guarantees (CIR) and limited or unlimited usage of certain applications (such as P2P), etc.
- **Application Control (Class of Service)** – ability to control the subscriber service by application, such as: high-quality (low latency) VoIP services, high performance for network gaming, high-quality streaming video services, limited or unlimited P2P file sharing use, etc.
- **Enable the "Triple Play"** - enables the carrier to attract subscribers to use the carrier's own voice and video services by ensuring the carrier's own voice and video (streaming, broadcast and on-demand) is of the highest quality, while giving lower priority to competing services
- **Bandwidth on Demand** – allows subscribers (or content provider on behalf of the subscribers) to dynamically ask for additional bandwidth for specific time periods and applications. For example, adding 4 Mbps in order to watch a specific movie in near DVD quality. The subscriber can either request the 4 Mbps when initiating the video session, or by choosing the 4 Mbps when visiting a "subscriber portal" (see "Integration with Provisioning Systems" below).

3.3 Advanced Billing Models

With the service control solution deployed, details and accurate usage information can be collected to allow advanced billing models such as:

- **Volume Controlled Service ("Quota")** – enables the carrier to set a maximum limit to the monthly or weekly volume the subscriber may use in general or for specific applications. Once the maximum volume is reached, either the subscriber service level is changed (degraded), a service upgrade is offered or a new tariff is used.
- **Usage Based Billing** – enables the carrier to collect usage information by application and to charge different rates for each application based on the volume of data transmitted. For example, a subscriber could be charged more for high-quality streaming video traffic than they would for standard email traffic.

3.4 Managing Security Threats

A service control device helps carriers reduce security threats by:

- Identifying and blocking malicious traffic such as worms and network-borne viruses.
- Identifying network behavior anomalies, such as Denial of Service attacks.

These powerful capabilities provide valuable frontline protection for both the subscribers, as well as the carrier network itself from attacks generated by the subscribers.

3.5 Network Monitoring

In addition to collecting subscriber usage information, more generalized network-level information is also collected by the service control device, giving the carrier's engineering team an in-depth understanding of network traffic, including:

- Identifying the applications used (such as which VoIP services are used by his subscribers)
- Identifying heavy users
- Monitoring link utilization and more.

Additionally, real-time and long-term reports allow the carrier to both troubleshoot immediate network problems as well as learn about network trends for the purposes of capacity planning and fine-tuning service plans.

4. Integration with Provisioning Systems

Typically, Allot's service control solution is deployed in conjunction with a subscriber provisioning system that takes care of all the provisioning processes. Paired with Allot, the subscriber provisioning system:

- Identifies the subscriber and sets the appropriate service level policies in Allot's service control device for the subscriber
- Presents a "subscriber portal" -- a Web application in which each subscriber can self-subscribe to the service, upgrade his service plan and ask for bandwidth on demand. The subscriber portal can be the default application for all non-registered subscribers so that the process of registration can be fully automated
- Processes usage information and implements quota policies for a specific service, while a mediation server and forwards the usage information to the billing servers

Allot works closely with several vendors of IP provisioning systems that offer the features and services noted above in an integrated system.

5. Conclusion

In today's challenging times of increasing subscriber expectations and competitive pressures, Allot's service control solution offers carriers and Internet access service providers with new ways to enhance their broadband access services. The result -- increased revenues, reduced operating/infrastructure costs and enhanced customer loyalty. Specifically, implementing Allot's service control solution results in innovative new service plans and billing models designed to retain and attract subscribers, control P2P/recreational usage, manage "triple play" services and protect the network from malicious traffic.

As noted above, carriers and Internet Access service providers who implement Allot's service control solution will achieve a competitive advantage within the carrier/service provider marketplace and be positioned to provide increased value and choice to their high-value subscribers.