

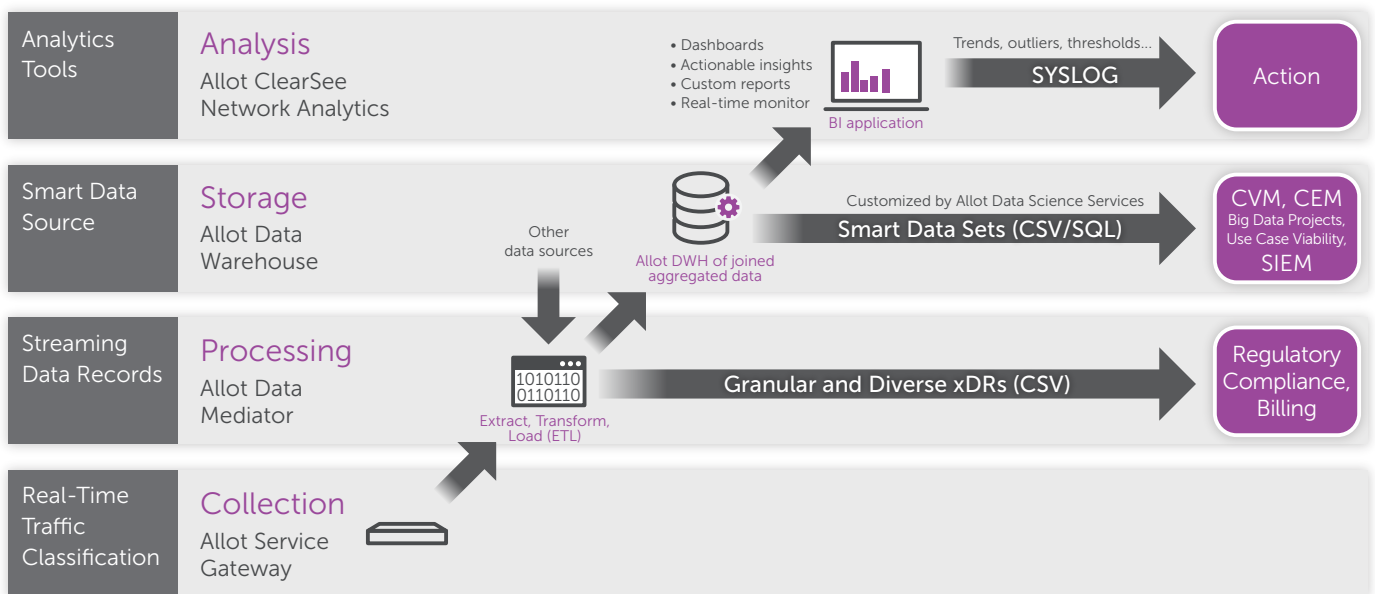
# ClearSee Network Analytics

## Accurate Network Intelligence to Make Informed Business Decisions

Network service performance and user satisfaction are key to business success and productivity. Your ability to obtain meaningful business intelligence from your network usage data is key to making the right business decisions to achieve these goals.

With Allot ClearSee Network Analytics, you get a complete toolkit for seeing and understanding everything that is happening on your network. As a result you can act faster and more decisively to make your network operate better, faster, and smarter, and to assure that every network customer is satisfied.

Allot captures a rich variety of application, user, device, quality of experience (QoE), and security data records in real-time, and transforms it into valuable business intelligence that helps you plan and take action to achieve your business goals.



Allot ClearSee Network Analytics provides a breakthrough solution for network business intelligence

## ClearSee Network Analytics

### Deeper Understanding. Better Business Insight.

Whether you operate a network business or a business network, Allot's actionable analytics will give you deeper understanding of your network and its users.



**Network & Operations** experts gain insight from visual reports and analysis of network traffic, online activity, and unusual traffic volumes, along with information regarding the causes. For example, real-time reports can show which applications and devices are consuming the bandwidth in a chronically congested cell, while historical analysis can be used to identify traffic trends and the effects they will have on network performance over time. Daily or weekly reports showing bandwidth consumption, usage volumes, video and HTTP QoE, signaling traffic, average bitrates, sessions opened, and other vital statistics enable operators to identify problematic areas and better plan around them.



**Marketing** professionals gain the ability to quantify and characterize subscriber activity to assist with customer segmentation and service planning. For example, analysis of subscriber-application-device usage can be used to target customers most likely to respond to a service plan upgrade, thereby improving response rates and increasing customer lifetime value. Using the system's flexible self-service approach, marketers can build their own reports to explore usage trends and outliers on the fly.



**Executive Management** gain from a consolidated view of their network business provided by report dashboards that summarize the key performance indicators they want to track - for example - monitoring the adoption and performance of newly launched services per demographic or per location. Web-based dashboards may be viewed on multiple devices from any location.

## A Powerful Self-Service Approach to Analytics

Allot ClearSee provides a complete toolkit for analyzing network usage data with extreme ease and efficiency. And we've put all the tools behind a single pane of glass:

- Real-Time Network Monitor
- Network Metrics
- Self-Service Reports

### Real-Time Monitor

Allot's real-time monitoring dashboard lets you visualize network and subscriber usage as it happens. Live, self-refreshing performance metrics report network activity in a granularity of seconds. One-click drill down helps you zero in on problems and troubleshoot faster. All Allot ClearSee dashboards are under the same pane of glass, so you can easily switch back and forth between real-time views and longer-term metrics.

Real-time views also include traffic per the policy-enforcement elements you've defined per application, per subscriber, per location, per link, etc. With this level of granularity, it's easy to track the real-time activity of individual users, remote locations, WAN links, or any other element that has been associated with an enforcement policy. Moreover, live dashboard views may be customized to address your precise requirements and business priorities.

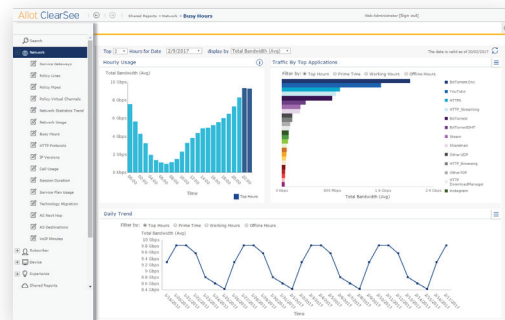
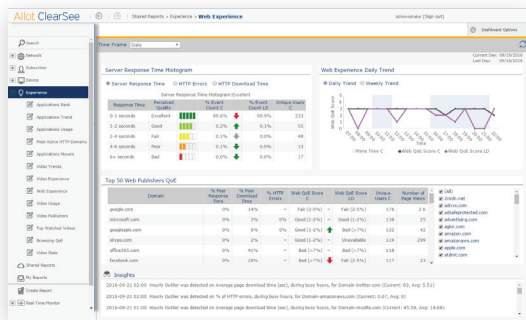


Allot Real-Time Monitor Dashboard

## Insightful Network Metrics

Allot ClearSee reporting dashboards make easy for your stakeholders to measure and visualize the network and user activity that matters most. Dashboard reports are interrelated and interactive. Drilling down or changing the data fields of one report, instantly updates and refreshes the display of the other reports in the dashboard. In addition, individual reports and dashboards are easily customized. Reporting dashboards are organized per domains that are of interest to every network operator – Network, Subscriber, Device, Experience and Security.

Analytics Domains	Reporting Dashboards
Network	Real-time health, Congestion analysis, Busy Hour, Peak Period, Application usage/popularity, Signaling analysis, and more
Subscriber	App usage, Device usage, Content consumed, Video and VoIP usage, QoE metrics, and more
Device	Data volume, App usage per model, 3G vs 4G, and more
Experience	Top content, Top consumers, Top publishers, Video and HTTP QoE per app/sub/device, and more
Security	Security dashboards display web activity, threat events, and blocked targets reported by Allot parental controls, anti-virus, anti-phishing, antispam, and firewall services



Network Metrics Dashboards

## Self-Service Data Mining

With Allot ClearSee Network Analytics you aren't limited to a predefined set of reports or a specific way to analyze data. As new requirements arise, or new data presents itself, our Self-Service analytics module helps you model your questions and find answers to complex business problems such as discovering new market and service opportunities before the competition, or gaining insight on how to dramatically improve customer satisfaction and retention rates.

While the Self-Service module is easy enough for anyone to use, it provides an excellent tool for experienced analysts who for the first time have access to source data that is more varied, detailed and accurate than ever before. Custom, ad hoc analyses and reports can be built without the need for software development or upgrade. Changes and what-if scenarios can be tested on the fly. With Self-Service, you can find answers to specific questions, explore possible courses of action, and often discover problems and opportunities that were not anticipated.

## Multiple Ways to Share

Dashboard and Self-Service reports may be shared with others via the GUI, and exported in a variety of formats, including Excel (plain text or with formatting), HTML, CSV file, and simple plain text. Moreover, report history lists and personal subscriptions keep relevant information available and easy to access.

## Tight Security

Data privacy and integrity is a top concern for network operators. Allot provides robust security settings that allow administrators to control access to the applications as well as use/view privileges to the data and to the different analytics tools. The system administrator controls the following security settings:

- o Access Authentication controls login permissions
- o Functional Privileges control the functions that each user/group may use
- o Object Permissions control the business objects that each user/group may use
- o Data Security filters control which data each user/group may access or view
- o Database Security controls direct access to the Allot data warehouse

## Data Science Services

Allot Data Science Service experts can help you identify and obtain the right data sets and build customized reports for the specific use cases that you want to analyze. Our expertise and experience can save you time and money as we help to aggregate the right data sets, generate custom reports and build custom dashboards that put you on the fast track to valuable insights.

## Allot ClearSee Network Analytics

Allot ClearSee Network Analytics software and hardware packages may be purchased in node configurations designed to support data collection and export for a wide range of different projects: from small projects of 10,000 subscribers to projects with 1 million subscribers, to unlimited numbers. Allot ClearSee software may also be installed on operator equipment that meets the following minimum requirements. Additionally, the software may be installed on virtual machines. For more details about the Virtual Edition, consult an Allot representative. Individual sizing and installation requirements should be verified with an Allot representative.

### Basic Node for up-to 100,000 Data Subscribers

This standalone configuration for Allot ClearSee Network Analytics provides a single server to host both the data warehouse and the business intelligence application for up to 100,000 subscribers.

Minimum Specifications for Allot ClearSee Basic Node	
Hardware	Lenovo x3550 M5 1U server Intel Xeon Processor E5-2620 v3 6C 2.4GHz 15MB Cache 1866MHz 85W Additional Intel Xeon Processor E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W 64 GB, DDR41866MHz 2.4 TB of server storage on 8 x 300 GB disks
Supported Operating System	CentOS Linux 6.6 64-bit x 86 (English only)

### Enhanced Node for up-to 1 Million Data Subscribers

This enhanced configuration for Allot ClearSee Network Analytics provides a single server to host both the data warehouse and the business intelligence application for up to 1 million subscribers.

Minimum Specifications for Allot ClearSee Enhanced Node	
Hardware	Lenovo x3650 M5 2U server Intel Xeon Processor E5-2640 v3 8C 2.6GHz 20MB Cache 1866MHz 90W Additional Intel Xeon Processor E5-2640 v3 8C 2.6GHz 20MB 1866MHz 90W 128 GB, DDR41866MHz 7.8 TB server storage via: <ul style="list-style-type: none"> <li>• 2 x 300GB 15K 12Gbps SAS 2.5" G3HS 512e HDD</li> <li>• 12 x 600GB 10K 12Gbps SAS 2.5" G3HS 512e HDD</li> </ul> System x 900W High Efficiency Platinum AC Power Supply 2 x 1 GbE copper connectivity (extra link for redundancy)
Supported Operating System	CentOS Linux 6.6 64-bit x 86 (English only)

### Cluster Node for Unlimited Data Subscribers

This cluster configuration for Allot ClearSee Network Analytics provides separate, expandable nodes to host the data warehouse and the business intelligence application respectively. Cluster nodes support many millions of subscribers with effectively unlimited scalability.

Minimum Specifications for Allot ClearSee Cluster Nodes	
Cluster Data Warehouse Hardware	Lenovo x3650 M5 2U server Intel Xeon Processor E5-2640 v3 8C 2.6GHz 20MB Cache 1866MHz 90W Additional Intel Xeon Processor E5-2640 v3 8C 2.6GHz 20MB 1866MHz 90W 128 GB, DDR41866MHz 7.8 TB of server storage via: <ul style="list-style-type: none"> <li>• 2 x 300 GB</li> <li>• 12 x 600 GB disks</li> </ul> System x 900W High Efficiency Platinum AC Power Supply
Cluster BI Server Hardware	Lenovo x3550 M5 1U server Intel Xeon Processor E5-2620 v3 6C 2.4GHz 15MB Cache 1866MHz 85W Additional Intel Xeon Processor E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W 64 GB, DDR41866MHz 1.2 TB of server storage 8 x 300 GB disks System x 750W High Efficiency Platinum AC Power Supply 6 x 1 GbE copper connectivity (extra links for redundancy and H/A)
Supported Operating System	CentOS Linux 6.6 64-bit x 86 (English only)

P/N D240048 Rev.4