Lucent Technologies
Bell Labs Innovations

Enhanced Services Manager

Evolving to Help Carriers Provision Convergent Services

Today's competitive marketplace demands diverse and flexible wireline, wireless, and IP/data services. And, network carriers must provide subscribers a secure and efficient environment for managing their enhanced services — including their current Intelligent Network (IN). The Lucent Technologies Enhanced Services Manager (eSM) provides this security, helping carriers efficiently and cost-effectively deploy services on network elements such as our individual or mated Enhanced Control Server (eCS — formerly Service Control Point), Enhanced Services Directory (eSD), and Enhanced Media Resource Server (eMRS — formerly Compact Service Node/Intelligent Peripheral).

The eSM provisions the databases for services that run on the Lucent Enhanced Services Platform (eSP — formerly IN). As the eSM receives data to provision the services, either from upstream systems or bulk provisioning files, it validates and routes this data to the appropriate eCSs and eMRSs across multiple interfaces. The eSM also retrieves service measurement usage from these network elements, and provides a reporting environment to view service and platform data.

The eSM supports the data migration from an older to a newer version of a service, in coodination with data migration on the network elements themselves. The eSM also supports an application programming interface (API) to link with user interfaces or upstream systems.



Lucent Intelligent Networks

End to End Solutions™

Lucent is further developing the Enhanced Services Manager (eSM) to be even more flexible in provisioning services and platforms. As wireline-wireless networks and voice-data networks converge, Lucent is evolving eSM into a service independent platform, so carriers can use it to provision multiple services not only across multiple regions, but also across multiple networks.

A Value-Added Service Manager

Lucent eSM adds competitive value to help carriers manage IN services and platforms in a number of ways, immediately:

- **Service Independence**: lets carriers manage multiple services from a single location, providing a single point of entry for managing all enhanced services, and helping make them more manageable and less expensive to operate.
- **Support for End-User Provisioning**: employs a web-based user interface and data security that restricts end users to accessing only their own data.
- **Advanced Architecture**: reduces time to deploy and activate IN services by automatically providing fully functional, user-friendly provisioning forms; lets carriers add subscribers as soon as a service is installed; reduces the time for service introduction and service migration — helping carriers compete through increased speed to market.
- **Integrated Service Provisioning Approach**: makes it easier to manage multiple enhanced services through one central service manager.
- **Simultaneous Communications with Multiple Network Elements**: lets carriers distribute enhanced services across several network elements in multiple geographical locations.

The Foundation for Effective Competition

To meet carriers' needs, Lucent is taking steps to further minimize overall platform costs while maintaining quality. We are designing the eSM platform development in parallel with Hewlett Packard's (HP's) new line of servers. With the introduction of the new server class from HP, the Lucent eSM is evolving to run on faster processors, so carriers can add subscribers quickly and efficiently.

In addition to reducing server costs, Lucent is designing the eSM to support TCP/IP connections to the eCS and the eMRS. Other performance enhancements are planned to help provision data at a higher rate, decreasing the time to introduce services and subscribers. For example, one key to quickly and reliably deploying IN services is solid service data maintenance. For that reason, the Lucent eSM maintains a master copy of all service data.

Additional flexibility is designed into the eSM's standard Common Object Request Broker Architecture (CORBA) interface, which allows seamless integration with upstream systems without customization on the eSM. The eSM permits use with high-throughput upstream provisioning systems, helping to optimize system performance. In fact, both the performance and capacity handling capabilities of eSM are significantly greater than most other systems.

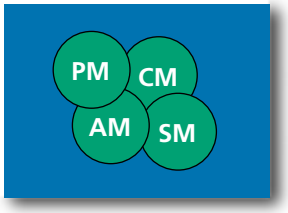
The eSM features can help carriers get ahead of the competition and stay there. In addition, Lucent provides eSM service customization support via decision graph programming and configuration data management. And, eSM's flexible usage billing allows efficient revenue capture by charging subscribers for the time and resources they use the eSM, further enhancing your competitive advantage.



Leading Edge Technology

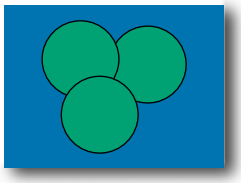
The Lucent Enhanced Services Manager (eSM) incorporates the latest technology to provide carriers and their customers sophisticated service provisioning capabilities and features — helping enhance flexibility, scalability, and performance for service providers and their subscribers:

- **Scalable Architecture**
  The eSM architecture is targeted to support multiple hardware platforms, running on the HP9000 class of servers.
- **Web-Based Provisioning**
  With Web-based provisioning, subscribers can provision their own services, reducing customer care costs and providing direct marketing for new services. This also enables carriers to position traditional and enhanced services in an e-commerce provisioning environment.
- **CORBA Upstream Interface**
  This enhancement helps reduce operating costs by providing an open standard interface for upstream systems.
- **Bulk Provisioning**
  By provisioning a large file of data at one time, carriers can add large numbers of subscribers each day when necessary. This feature can reduce the amount of resources and time needed to provision new customer records into the eSM database.

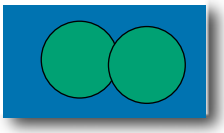


High Performance Hardware Configuration – deploy all features

eSM Scalability



Medium Performance Low Cost Hardware Configuration– deploy 2 -3 features



Very Low Cost Hardware Configuration – deploy 1-2 features

eSM Features
PM – Provisioning Manager
CM – Configuration Manager
AM – Announcement Manager
SM – Surveillance Manager

The Enhanced Services Manager provides a scalable provisioning solution for the wide range of network and business needs.

- **High Capacity CORC Provisioning**
  Processing a higher capacity of Customer Originated Recent Change (CORC) data in the network provides faster communication for service updates.
- **Cluster eSM**
  Clustering allows the carrier to manage one database for all the eSMs in their network. This configuration therefore boosts performance and capacity by extending processing capability across multiple deployed eSM hardware. It also helps decrease database manageability costs and increase system performance.
- **Voice File Manager**
  This feature increases network functionality by creating a provisioning solution for voice files deployed on eMRSs without involving multiple hardware platforms.

The Evolving eSM

Lucent is committed to the continuous enhancement and evolution of our eSM offering to provide even more robust, cost-effective solutions for meeting carriers' business needs. We are currently leveraging new technologies to achieve future product improvements on many levels, including:

- **Configuration Management**
  With the eSM as a central point for managing the network elements, carriers can gain control of upgrading and managing service and feature releases across their network. This capability can also reduce the complexity of service distribution processes to the eCSs, eSDs, and eMRSs.

- **Performance Engineering Tool and "Gas Gauge"**
  These planned features provide performance tools, which can be used to monitor the Enhanced Services Manager (eSM) performance and capacity loads. The Performance Engineering Tool provides accurate predictions of when the eSM will be running at its highest performance and capacity peaks as new services and subscriber records are added. The "gas gauge" feature lets carriers monitor CPU, memory, and disk storage use in real time and in a graphical format.
- **eCS and eMRS Alarm Management**
  This planned feature provides alarm management capabilities for the eCS and the eMRS, managed centrally through the eSM.
- **Enhanced Measurement and Reporting Tools**
  This feature is designed to provide an automatic work load report that includes platform and service measurements generated through the network. If the software detects performance problems, it generates and sends a report through the eSM. Carriers or their customers can routinely monitor network elements to see overload/peak times and help manage the network efficiently and effectively.
- **GUI Web-Server Drivers**
  By porting the eSM Web graphical user interface (GUI) drivers to separate host machines connected to the eSM through a firewall, the eSM can gain more capacity and an increase in performance.
- **Optional On-line Trouble-shooting Guide**
  With the Lucent eSM, on-line manuals are available to provide fast access to information for the eSM system.
- **Feature Locking**
  This capability locks unneeded features in the eSM, allowing for faster system performance and capacity. It also lets features be turned on as the network grows or as needs change.

Flexible, Scalable eSM: an Ideal Provisioning Solution

Today's eSM from Lucent Technologies is fast becoming the core provisioning solution for all of Lucent's IN services and platforms. And, we continue to evolve the eSM to help carriers succeed and differentiate their service provisioning in a highly competitive environment, via decreased platform costs and increased performance, capacity, reliability, service availability, scalability, and flexibility.

The Lucent Technologies eSM provides an ideal solution for the network with minimal initial performance and capacity needs and expected subsequent growth. The eSM is also positioned to help carriers seize new market opportunities, such as provisioning IP/data services as well as wireline and wireless services. In these ways, Lucent is dedicated to evolving our leading-edge eSM to meet the rising demands of the supercharged, competitive communications business environment.

For additional information, please contact your Lucent Technologies Sales Representative. You can also visit our Web site at http://www.lucent.com/software or call the following Lucent Technologies Response Centers:

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