



MonALISA

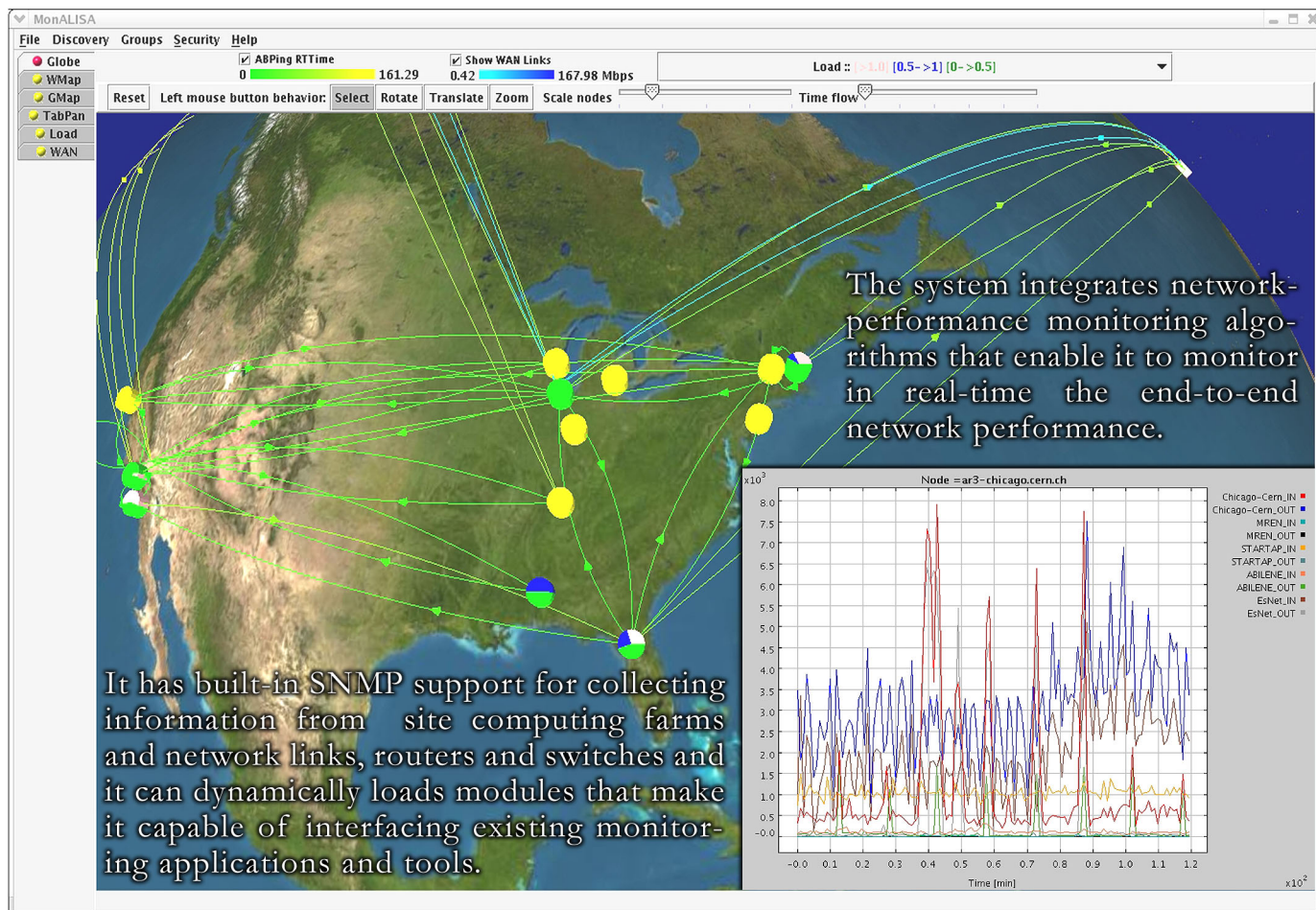
MONitoring Agents using a Large Integrated Services Architecture

The MonaLISA (Monitoring Agents in A Large Integrated Services Architecture) system provides a distributed monitoring service.

MonALISA is based on a scalable Dynamic Distributed Services Architecture implemented using JAVA/JINI and Web Services technologies. The scalability of the system derives from the use of multithreaded Station Servers to host a variety of loosely coupled self-describing dynamic services or agents and the ability of each service to register itself and then to be discovered and used by any other services, or clients that require such information.

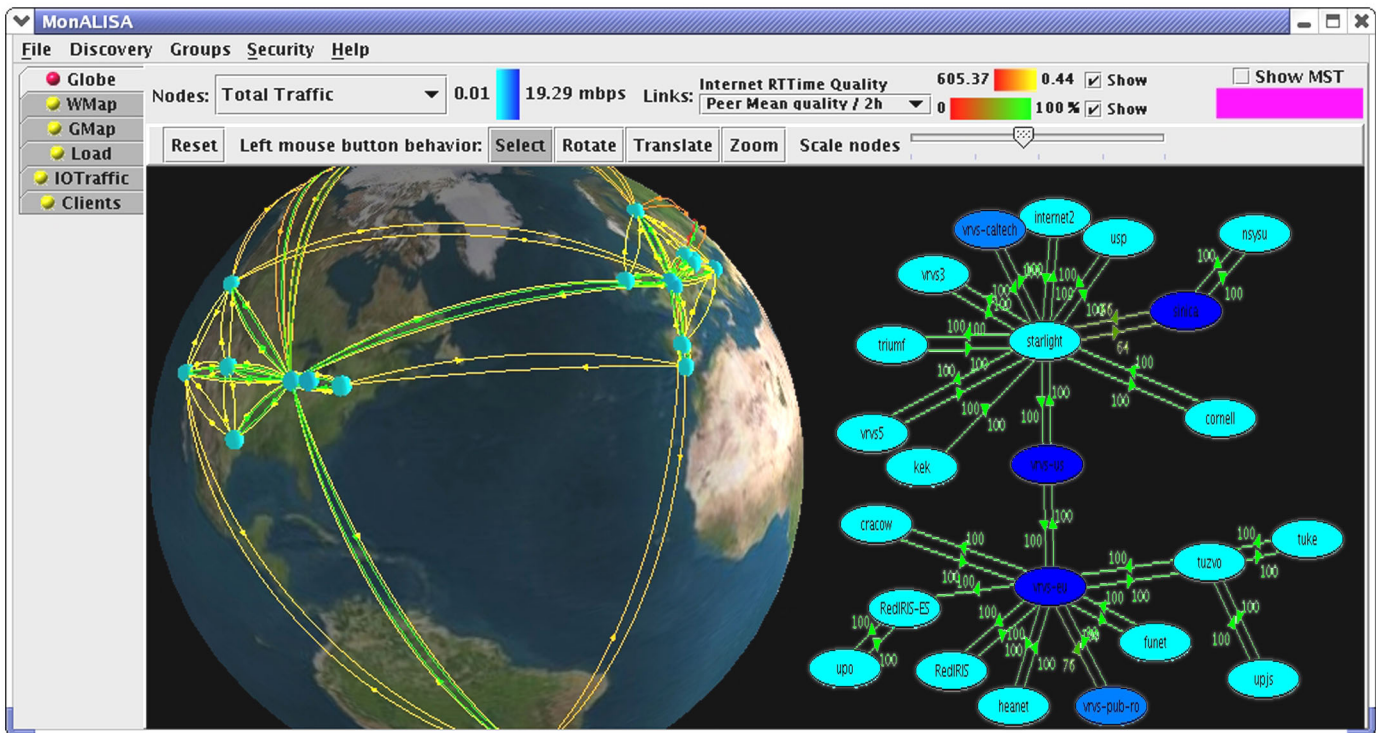
The monitoring information gathered also is essential for developing the required higher level services, that provide decision support, to help operate and optimize the workflow through large distributed systems.

The framework integrates several existing monitoring tools and procedures to collect parameters describing computational nodes, applications and network performance.

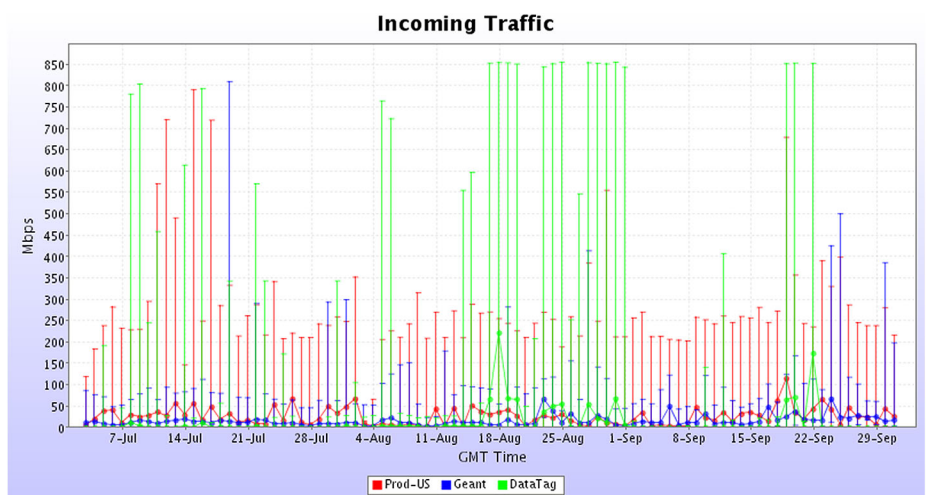




Specialized mobile agents can be deployed in the MonALISA framework to optimize data replication strategies for data processing in GRID systems as well as to help and improve the operation of the VRVS system, a complex videoconferencing distributed application. These agents are examples of distributed higher level services which are using local monitoring information in performing a global optimization task.



The mechanism of dynamically reconnecting a large set of distributed VRVS reflectors as a function of their availability and the network conditions is realized in nearly real-time by many collaborating agents which dynamically create a global minimum spanning tree and in this way optimize the interconnections among the reflectors of the VRVS system.



Graphical user interfaces allow users to visualize global parameters from multiple sites, as well as detailed tracking of parameters for any component in the entire system. The graphical clients also use the remote notification mechanism, and are able to dynamically show when new services are started, or when services become unavailable. Dedicated filers are used to provide global views with real time updates for all the running services.

Global repositories for Virtual Organizations can be created dynamically, using the discovery mechanism. The Web Services technology is used to provide this information dynamically to other services, web clients or handheld devices.