Multi-Perspective Network Monitoring Engine

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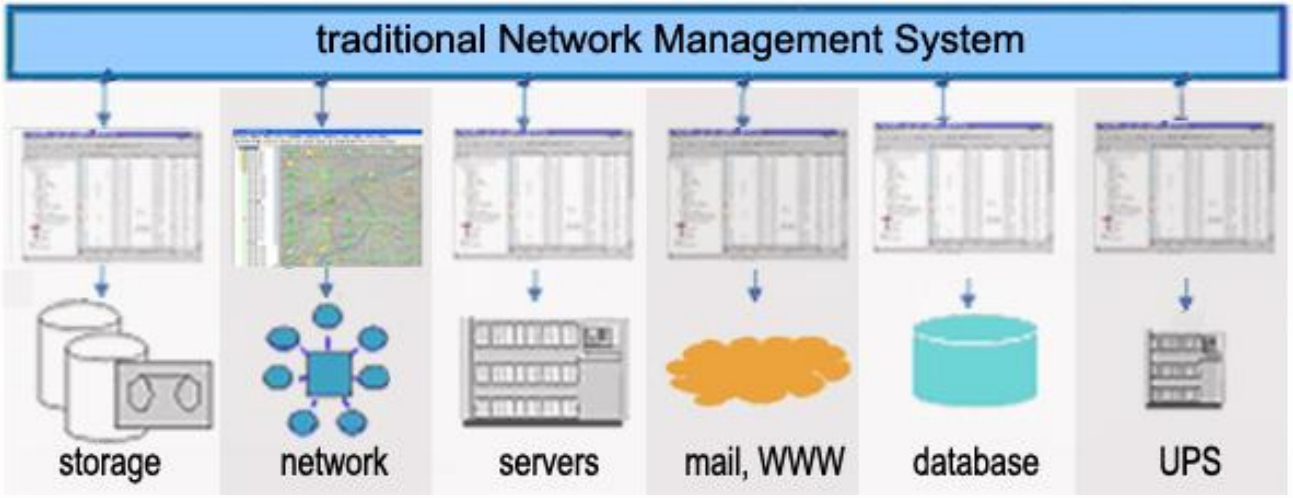
Goal

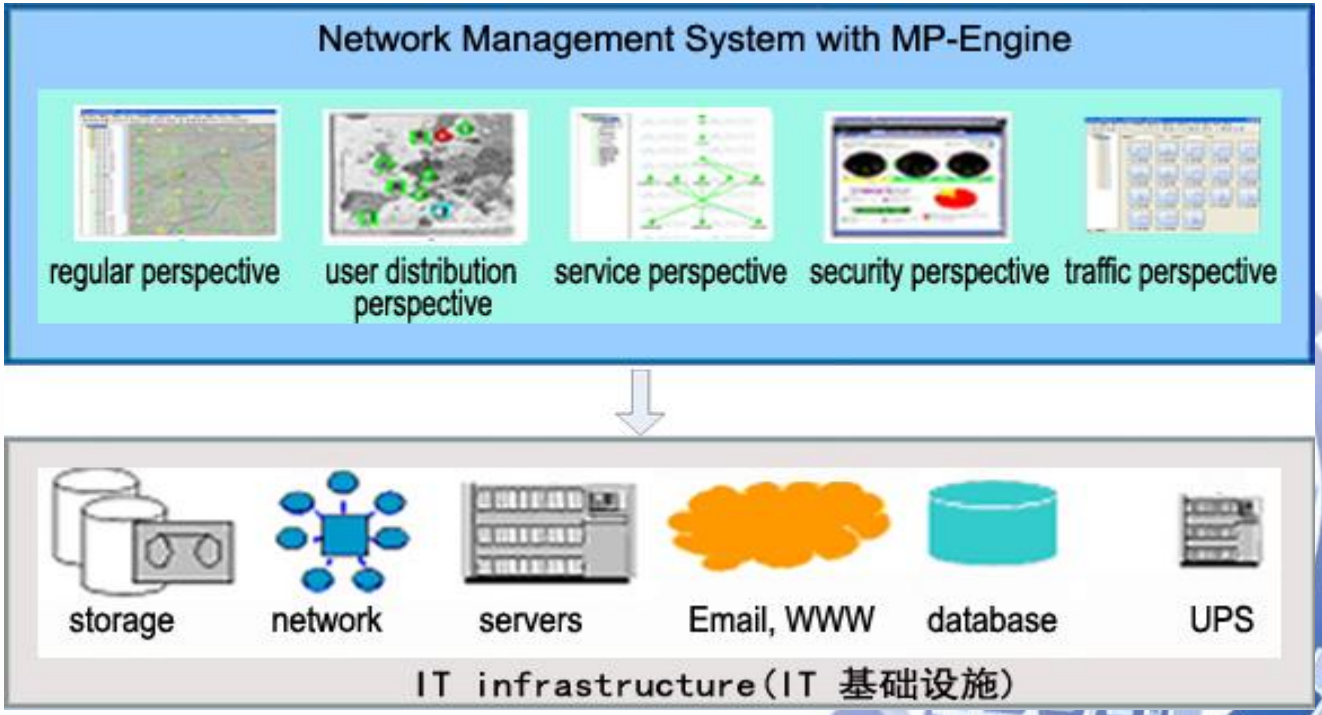
- **Opportunities :**
  - Requirements of network monitoring and management are evolving.
  - Administrators still have difficulties in drawing conclusions from those large amount of quantitative results.
  - It comes the time for a new multi-perspective monitoring engine to emerge.
- **Our goal :**
  - Develop an integrated network management platform with an innovative multi-perspective monitoring engine as the front-end.
- **Benefits :**
  - Efficiently integrates different aspects of network monitoring into one distributed and scalable platform
  - Monitor the IT infrastructure in an innovative way, which will greatly improve the efficiency of network administration
  - Set up a new model for the presentation layer of network management systems.

Technical Challenges – Key Technologies

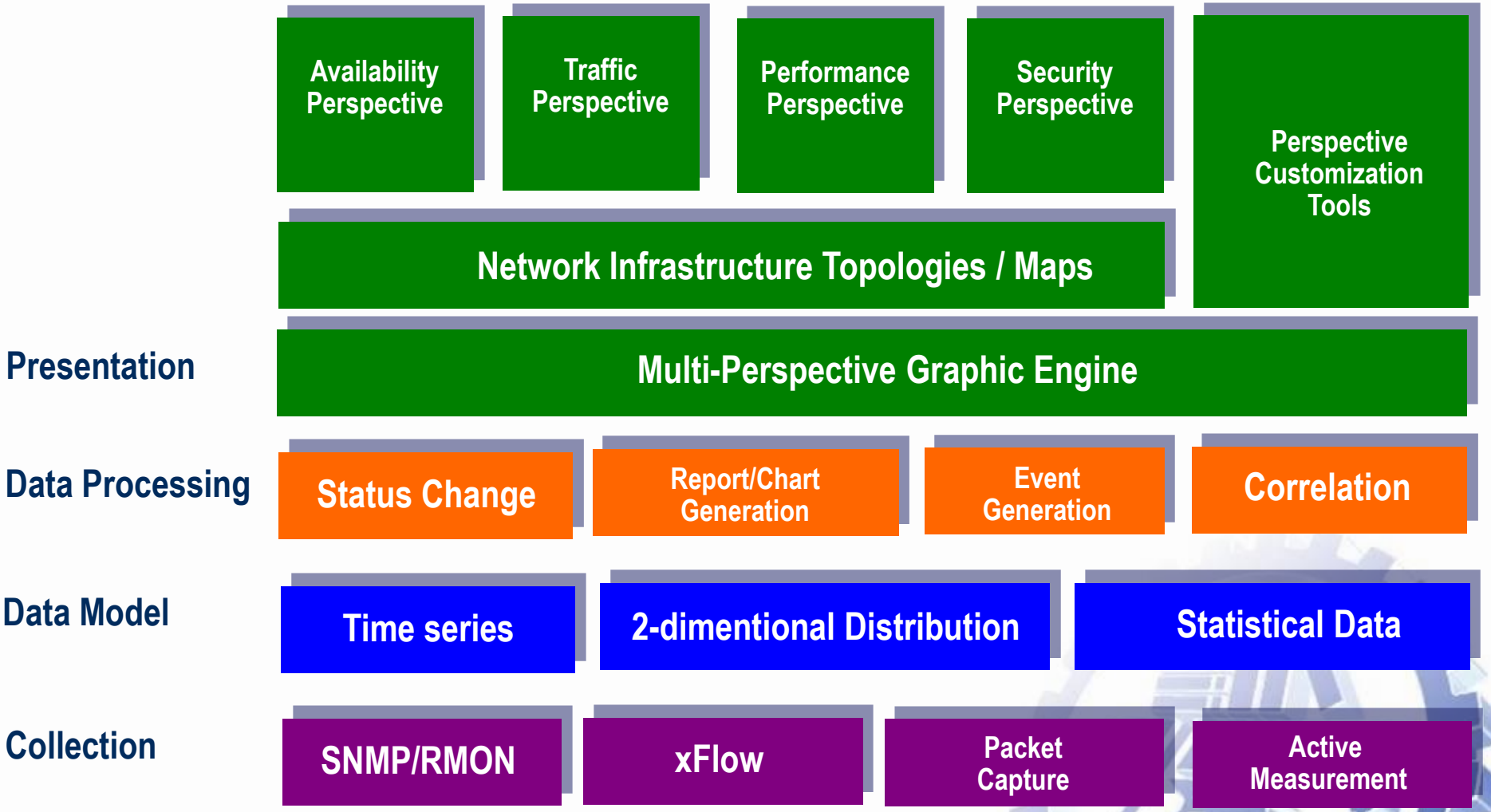
- A unified network monitoring data model
- A unified network parameter collection framework
- A Multi-Perspective graphic engine
- System Architecture: Distributed and Scalable Network Management Platform

MP-Engine vs Traditional Systems





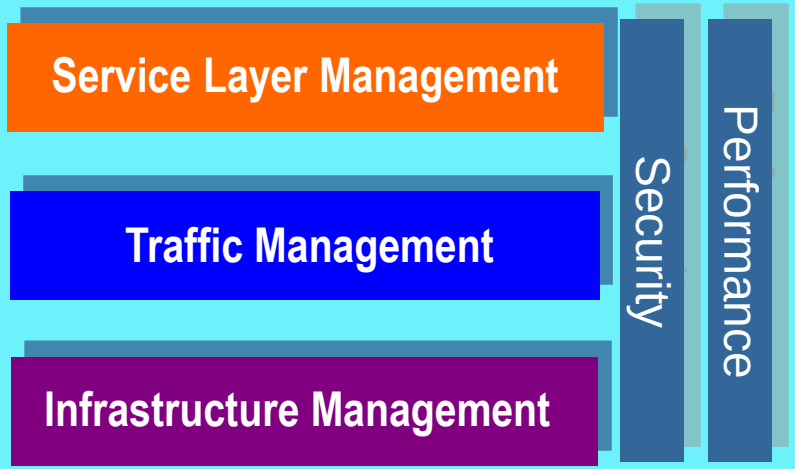
MP-Engine Architecture



Key Points of MP-Engine

Key Points

Extend the scope of traditional network infrastructure management systems



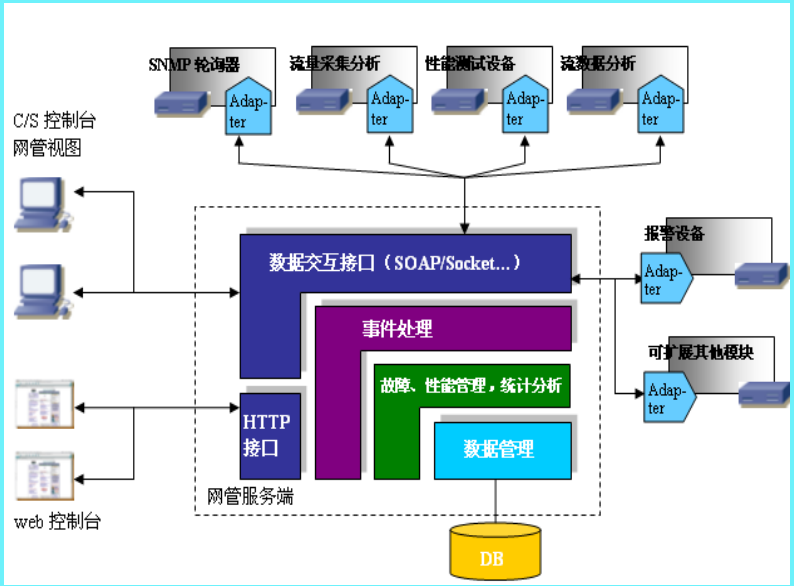
Value Propositions

Give the network administrators a full view of how the network is running.

1. how the equipment are running
2. what kind of traffic is running on the infrastructure
3. how the services are running
4. easy to locate security and performance problems

Key Points of MP-Engine

A Distributed and Multi-DataSource Data Collection Scheme



Integrate all the needed management parameters into one platform

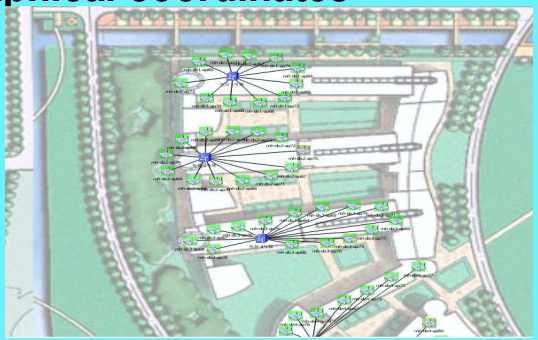
1. Easily scalable in functions. Supports multiple types of probes to collect needed information.
2. Scalable in performance. Computation can be distributed over the probes.
3. Can adapt to heterogeneous network equipments

Key Points of MP-Engine

An extended data model to organize the collected network parameters

Distribution over time

Distribution over 2-dim topology and geographical coordinates

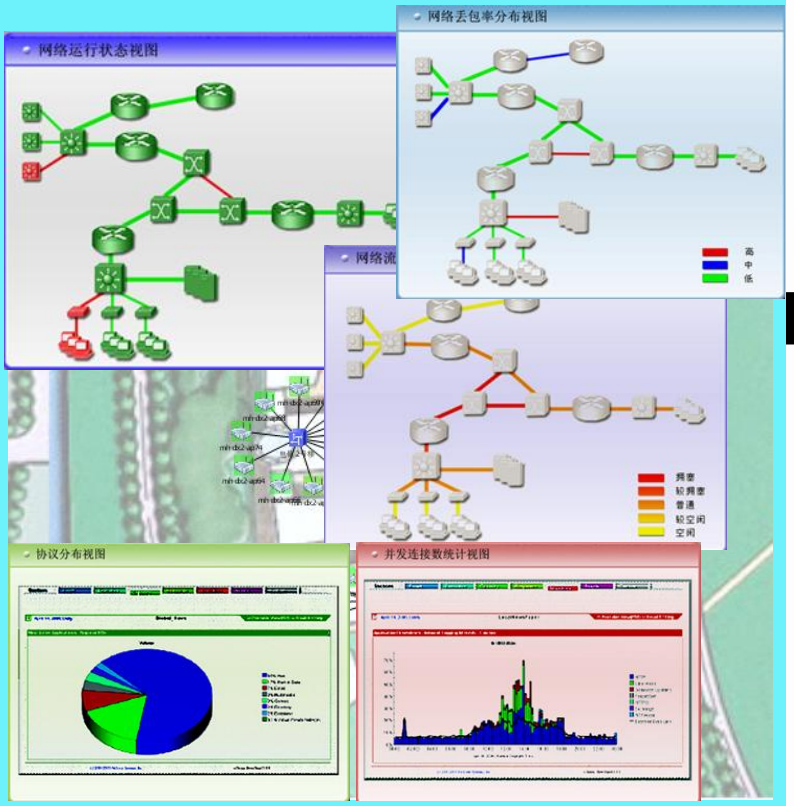


Give the administrator the distribution of the parameters over the topology, or over the geographical map of their IT infrastructure

1. **Helps the administrators to find network anomaly not only in the time trends, but also in the 2-dim distribution of the parameters**
2. **Helps the administrators to quickly locate the network anomaly in the topology.**

Key Points of MP-Engine

A Multi-Perspective Network Management Graphic Engine



Gives the administrators an innovative front-end of the network management system

1. Instead of focusing on specific devices and links, MP-Engine gives the administrator a graphical overall vision of the network.
2. Various perspective are displayed in the form of an integrated holography.
3. This Unified Graphic Engine is scalable and customizable.
4. Administrators can customize the perspective they need

Demo

Describes the distribution of the parameters over a two-dimensional space as well as the distribution over time.

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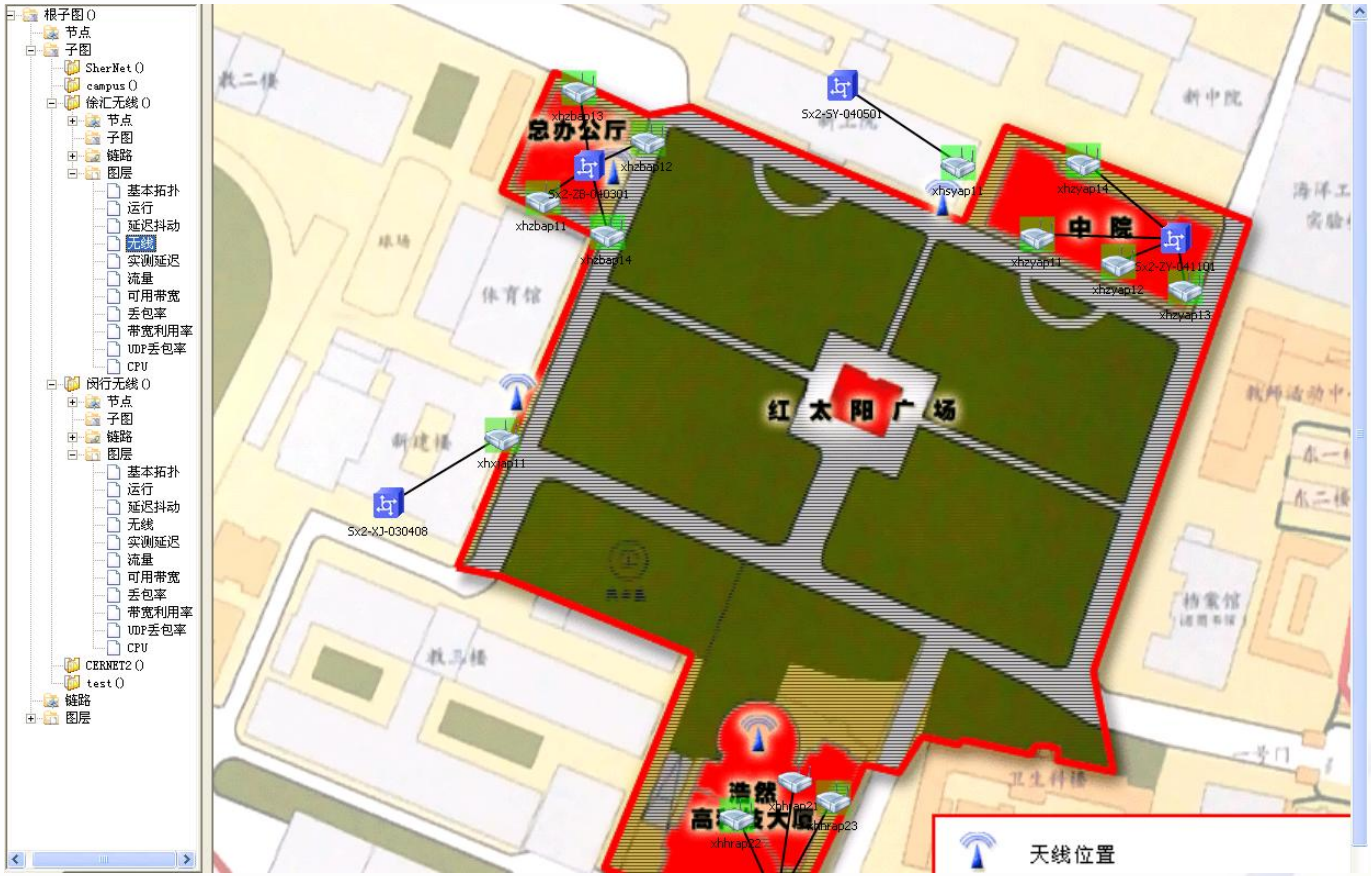
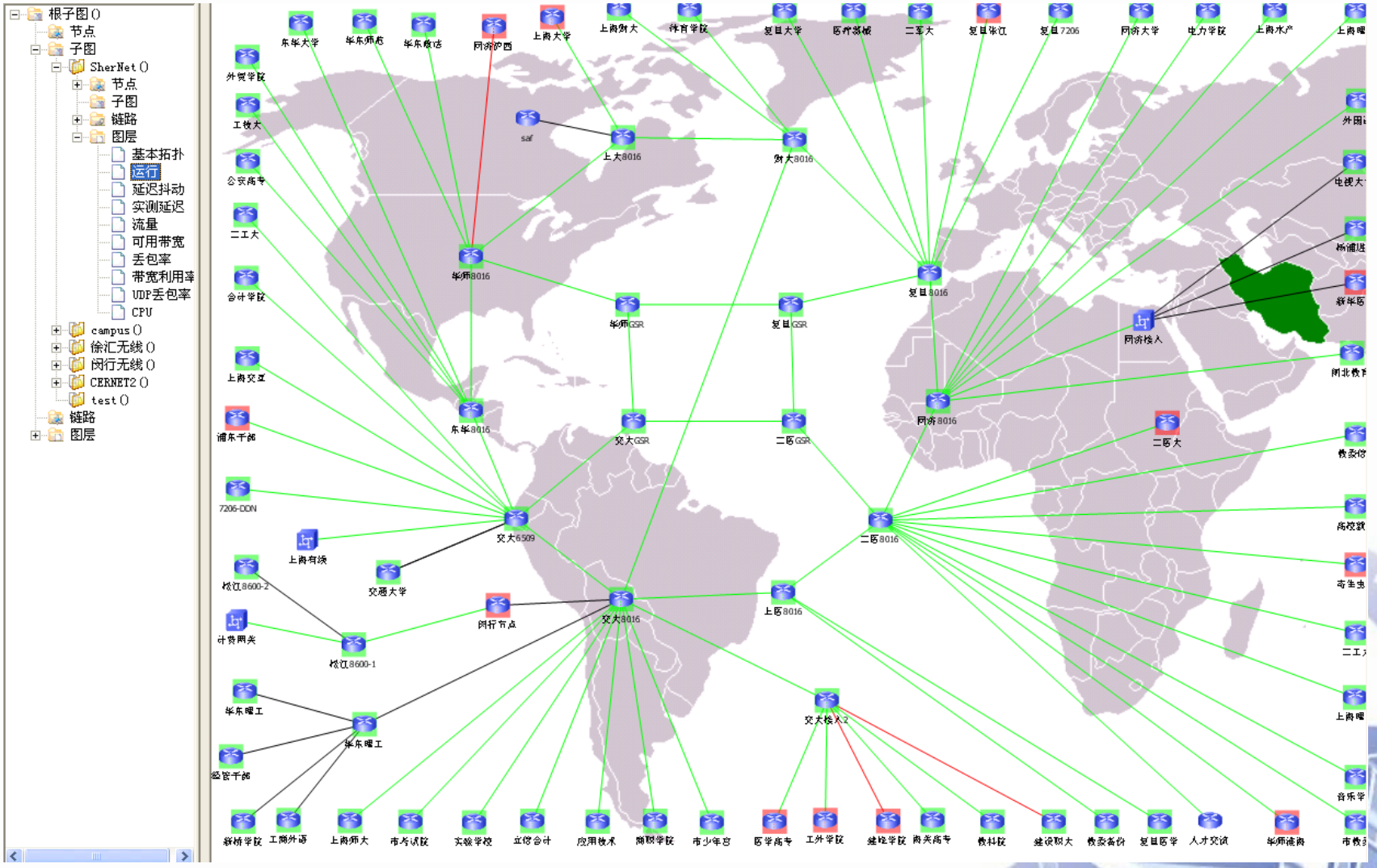


Demo

Customizable multi-perspective engine to monitor the network from different aspects.

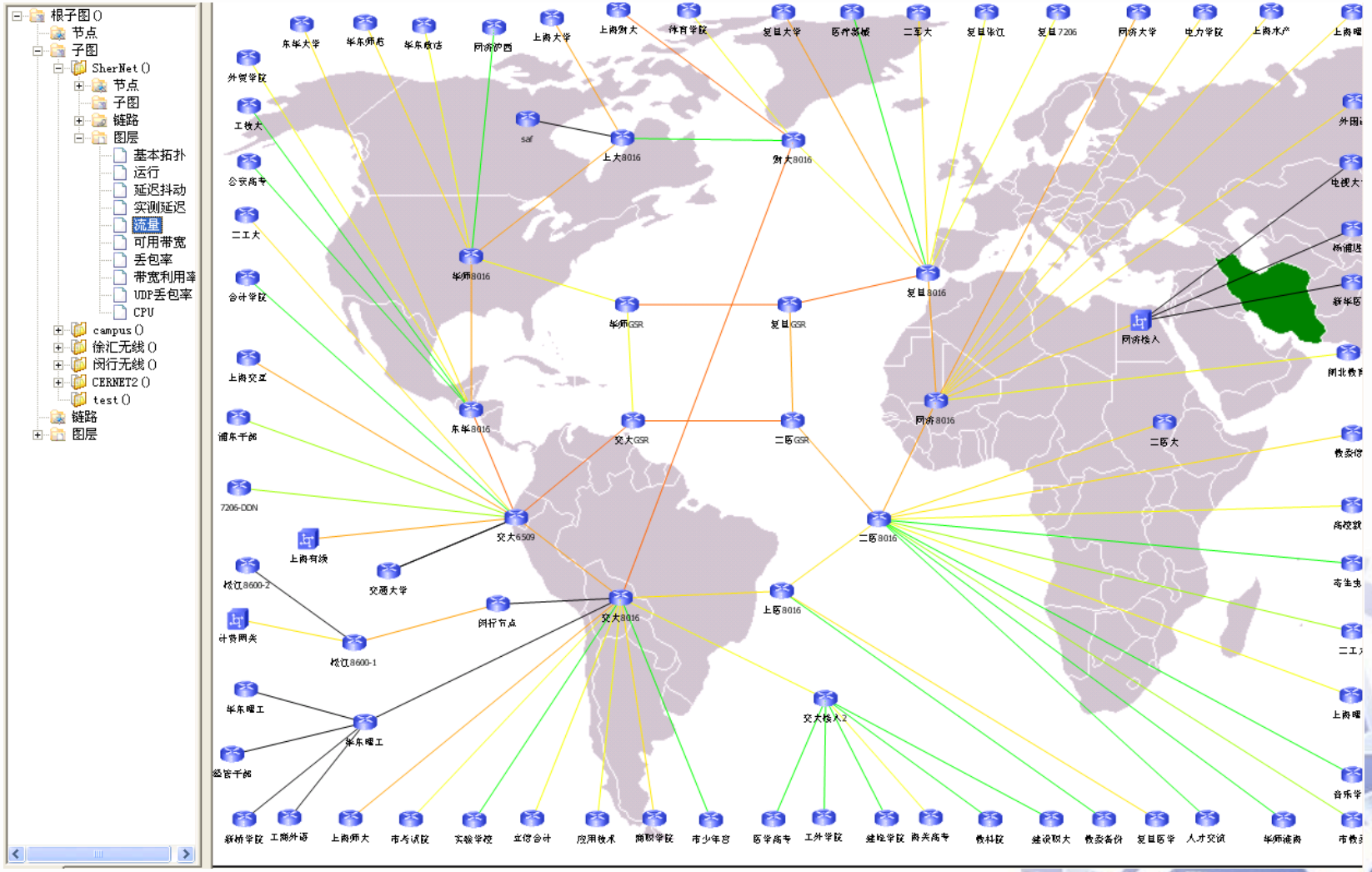
The basic status perspective:



Demo

Customizable multi-perspective engine to monitor the network from different aspects.

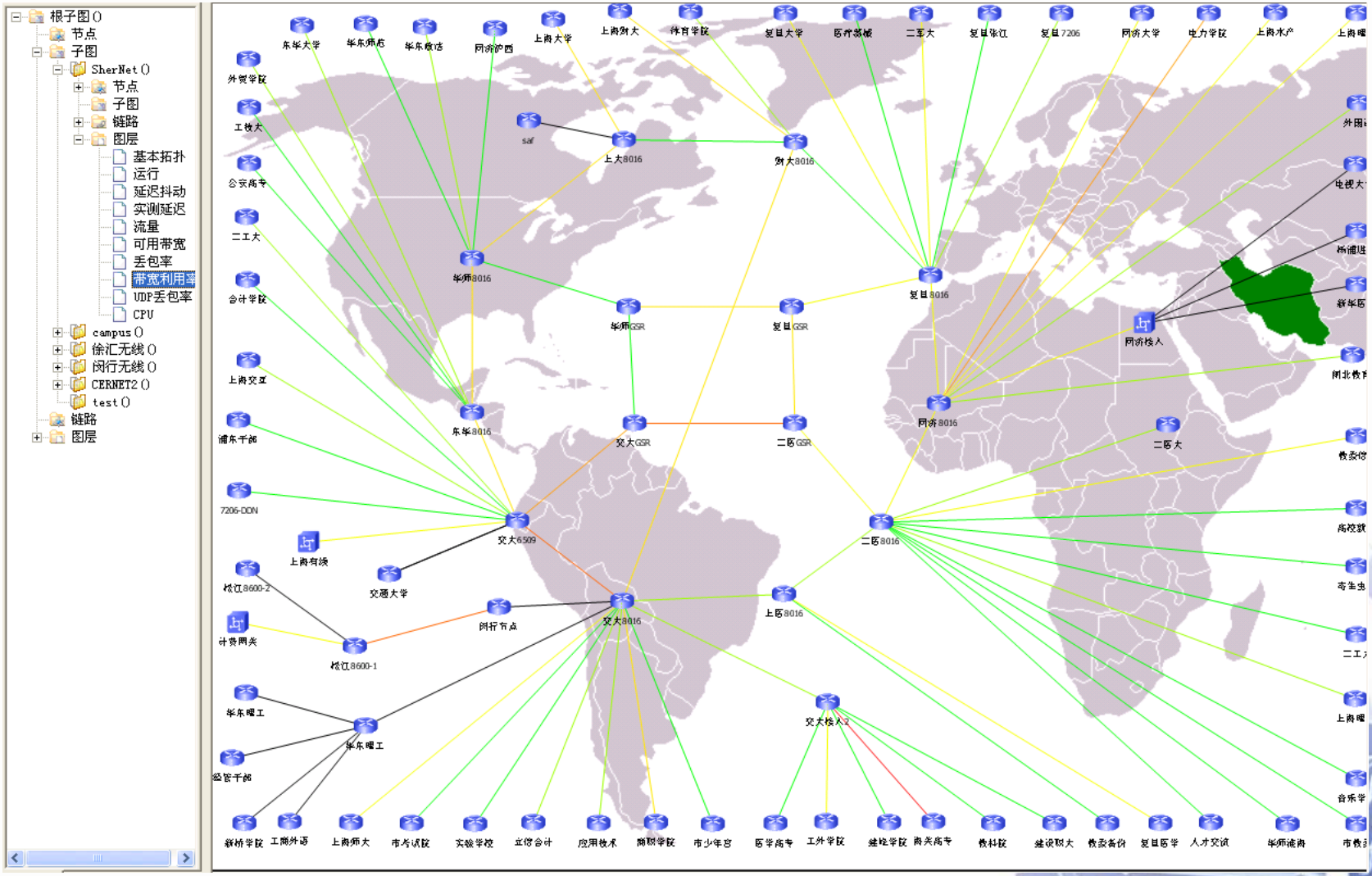
The traffic perspective:



Demo

Customizable multi-perspective engine to monitor the network from different aspects.

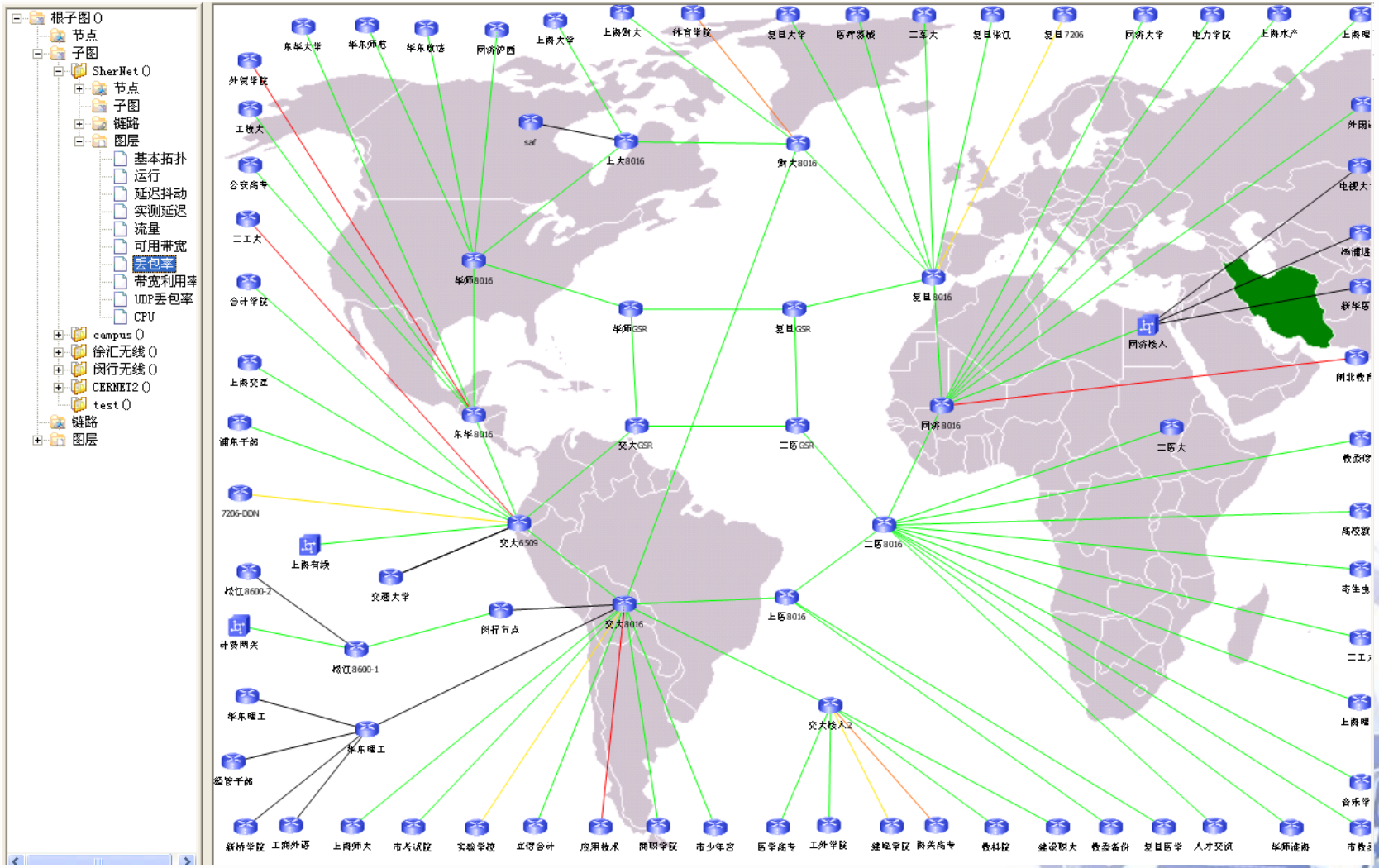
The bandwidth utility perspective:



Demo

Customizable multi-perspective engine to monitor the network from different aspects.

The packet loss rate perspective:



Comparison

Types of Competitors	Advantages	Disadvantages
Management software provided by equipment vendors	Very Suitable for their own equipments	Low compatibility; not suitable for heterogeneous networks; no customization development support
Open-source software	Low cost	Need further development; weak integration; no support
Famous International vendor products	Mature products	High cost; difficult to deploy; high technical requirement for administrators; no customization development support

Thank you !

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