



SHUNRA VIRTUAL ENTERPRISE (SHUNRA VE)

Know exactly how your business applications and network services will perform for remote end-users *before* rollout!

RECREATE ANY PRODUCTION NETWORK IN MINUTES

Shunra VE delivers a highly robust, comprehensive network simulation solution that creates a virtual network environment in your pre-deployment lab. It delivers a powerful, flexible and easy way to test the performance of your applications and network equipment under a wide variety of network impairments – exactly as if they were running in a real-life production environment.

Using Shunra VE you will understand the impact that the network and applications have on each other's performance and on the remote end-users' experiences, and uncover and resolve production related problems – before rollout.

In addition to the empirical experience, Shunra VE provides a wide range of graphically rich reports and drill-down analysis capabilities. These help you isolate and resolve the root causes of network and application problems early, and determine whether any modifications to the application, network or infrastructure are needed.

Shunra VE gives you the information you need to make informed decisions - throughout the development lifecycle - and ensure service levels to remote end-users.

Shunra VE is the only network simulation solution that enables you to:

- Know exactly how new or updated applications or network services will perform for remote end-users – throughout the development lifecycle.
- Avoid production related network or application problems.
- Ensure an optimal remote end-user experience.
- Eliminate phased rollouts to remote end-users, and avoid a fix-as-you-go approach.
- Make sound infrastructure investment decisions without complex field trials.
- Troubleshoot post-production problems and verify resolution, quickly and easily.

AWARD WINNING NETWORK SIMULATION SOLUTIONS FROM THE INDUSTRY LEADER

Shunra is the pioneer and leading provider of both software and hardware network simulation solutions. Since 1997, Shunra's award-winning solutions have enabled over 1,700 leading companies worldwide to ensure that their mission critical applications are optimized for remote end-users.

Shunra VE is ideal for:

Infrastructure Projects

- Data center or server consolidation
- Disaster recovery and business continuity
- Network capacity planning
- Network design
- VoIP planning and testing
- Infrastructure change management
- IPv6 migration
- Active directory deployments and email migrations
- IP based SAN testing

Testing Projects

- Pre-deployment testing for enterprise applications such as Oracle, SAP and Microsoft
- Vendor equipment evaluations
- User acceptance testing
- Post-deployment troubleshooting
- Wireless/cellular and satellite network testing
- eCommerce and Internet testing
- Application offshoring
- Network performance change control management

Shunra VE combines a high performance hardware appliance with easy-to-use, innovative software. This creates a powerful network simulation solution that includes detailed reports and root cause analysis. Shunra VE is extremely easy to install, configure and use, and it seamlessly integrates with your existing infrastructure and lab environment, right out-of-the-box.

HIGH PERFORMANCE NETWORK SIMULATION APPLIANCE

At the heart of Shunra VE is a high performance, scalable network appliance, that functions as a bridge or router. It changes the speed at which network traffic travels across the local area network, exposing data packets to the same network impairments to which they would be subjected on the wide area network.



FLEXIBLE NETWORK MODELING & DESIGN

The Shunra VE network appliance is controlled through a highly intuitive and easy-to-use Microsoft Visio® based modeler. The modeler gives you complete flexibility to create any network topology and run any scenario, any way you want.

Once you've created your network model, you simply press the play button to activate your test scenario. At this point any application, network service or infrastructure connected to the appliance will behave as if it were subjected to the conditions defined in the model. You will immediately "see and feel" exactly how remote end-users will experience your application under production conditions!

You can edit any network parameter at any time, to create current, future, worst case or "what-if" scenarios. And you can replay or reconfigure these scenarios over and over again to try out alternative solutions, verify problem resolution, and compare performance between different versions or technologies.

"We used Shunra VE to test a complex Oracle-based global application. It helped us achieve our benchmarking goals, and understand performance expectations over high-latency network segments."

Accenture – a global management consulting company.

CAPTURE AND REPLAY PRODUCTION NETWORK CONDITIONS

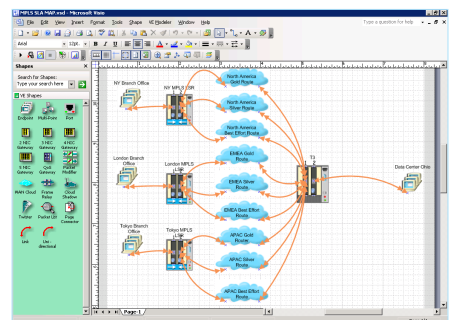
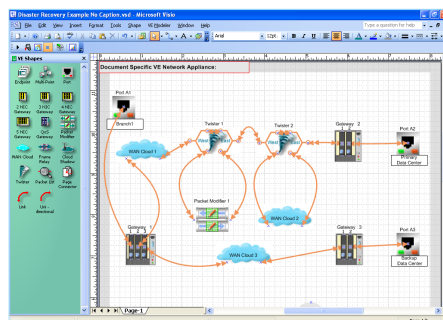
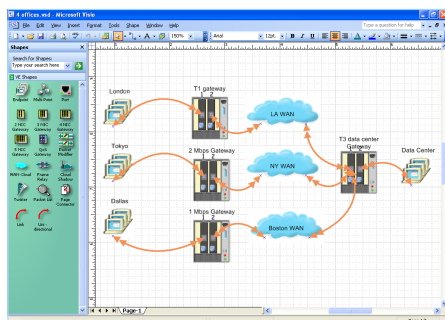
Shunra VE's network recording software captures and imports production network conditions, such as latency, jitter and packet loss, directly into your network model. When Shunra VE replays these recordings it recreates the exact same conditions that exist on the production network so that you can test your applications under the most real-life conditions possible.

RECREATE AND TROUBLESHOOT POST DEPLOYMENT PROBLEMS

Shunra VE is also ideal for troubleshooting production problems that occurred in the past. Since Shunra VE stores 30 days worth of production network conditions, you can simply rewind the recording to the time that the problem occurred and see what happened with the network at that time. With this information you can easily identify the source of performance problems – whether in the application or the network, and verify the resolution.

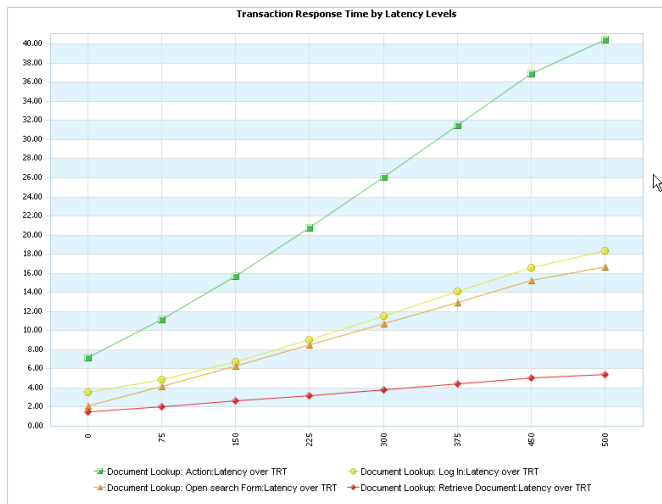
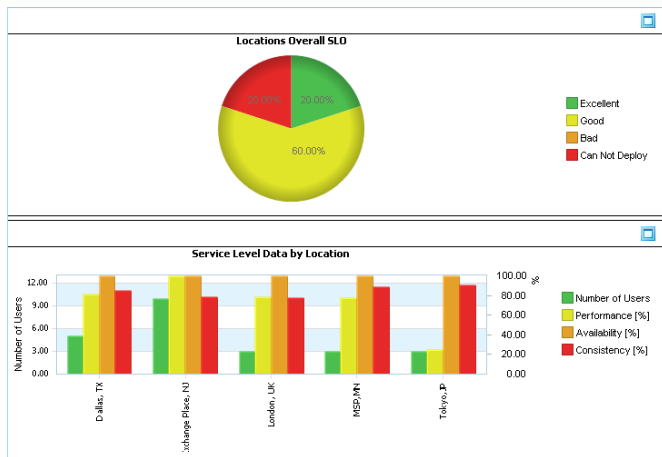
"Sub second transaction execution is absolutely critical in electronic foreign exchange trading, and Shunra VE helps us consistently assure optimal performance for our users before we deploy the platform in production. Using Shunra VE during the development process to understand and optimize performance in such a demanding environment – before deployment – provides strategic value to our business. Without Shunra VE we would feel like we were flying blind."

Hotspot FX – leading online foreign exchange trading marketplace.



PREDICT APPLICATION PERFORMANCE UNDER MULTIPLE REMOTE END-USERS

In the real world, distributed applications are used by tens, hundreds or even thousands of remote end-users. This end-user load directly impacts application performance across the network, and the network's performance itself. Shunra VE includes two highly intuitive applications – VE Predictor and VE Profiler – which directly integrate with the industry's leading load testing tools, including HP Mercury's LoadRunner and Borland's SilkPerformer. These applications automate the process of assessing application performance under remote end-user load and network conditions, so that you can determine compliance with SLOs.



"Shunra VE is a strategic solution that enables us to deliver reliable IT services to our end-users. With Shunra VE we can understand the real-world performance of all our new applications, from various geographic locations, and efficiently and easily plan network capacity and the budget needed to support the application and business growth."

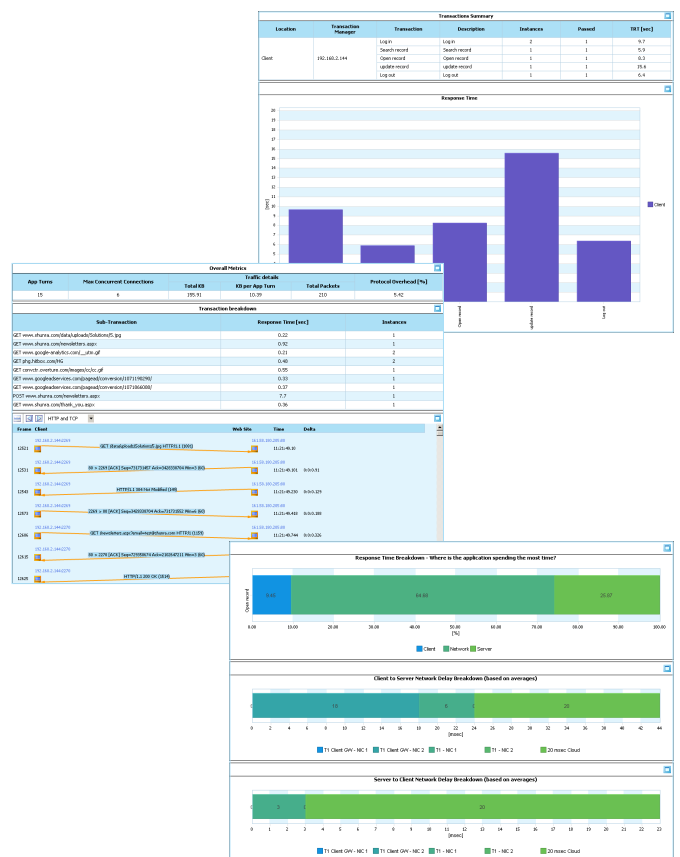
Serono – a leading global biotechnology company.

DEEP ANALYSIS & COMPREHENSIVE REPORTS

With every test, Shunra VE provides detailed drill-down analysis and graphically rich diagnostics reports on application and network performance, which tell you exactly where and when you will have performance problems – in the network or the application. Shunra VE provides reports and analysis on:

- Application performance over the network
- Application availability over the network
- Application performance thresholds against a range and combination of network conditions
- Individual transaction performance measurements and drill down information

All reports can be exported to Microsoft Office documents or published in HTML. An executive summary report in Microsoft Word is also provided. Additionally, all Shunra VE test results are stored in a central repository for easy version comparison, change control, and future reference by the project team.



AUTOMATICALLY INTEGRATE WITH THIRD PARTY LAB RESOURCES

Shunra VE includes an XML-based open API which enables it to automatically manage other third party lab resources, or be managed by them. These resources include PCs running batch scripts, FTP clients, custom developed or off-the-shelf testing tools, traffic generators, network sniffers, and network management systems.

SHUNRA VE: UNIQUE FEATURES

- ▶ **Easy to install, configure and use** by network experts, application professionals and developers alike.
- ▶ Ideal for **use throughout the development lifecycle** – from design through production.
- ▶ Combines a **powerful high performance network simulation appliance with a Microsoft Visio-based console** that makes network modeling quick, easy and straightforward.
- ▶ **Captures and replays production network conditions** to create a mirror image of the production network.
- ▶ Seamlessly **integrates with automated load tools from Mercury and Borland**, with **layer 1-7 traffic generators**, and **VoIP call generators**, etc.
- ▶ Provides **extensive reporting capabilities** as well as **deep, drill-down transaction performance metrics** for root cause analysis.
- ▶ Includes an **open XML-based API** for seamless integration with any lab automation tool.
- ▶ Delivers **extensive network simulation capabilities**:
 - Simulates a **wide range of network impairments** including latency, jitter, bandwidth, congestion, packet loss, BER, fragmentation, duplication, disconnection, re-ordering, data corruption and modification, and much more.
 - Simulates **any network topology** including client/server, multiple branch offices with distributed data centers, full mesh networks, complex N-Tier network topologies, internet, eCommerce and much more.
 - Simulates **a wide range of network technologies** including MPLS, Ethernet, QoS, Frame Relay, wireless and cellular networks, satellite networks, IPv4 and IPv6.

TURNKEY PROFESSIONAL SERVICES

Shunra's Professional Services organization delivers unmatched expertise and services to help you quickly and efficiently ensure that your applications are ready for the production network. Following Shunra's best practices approach, our professional services organization can provide you with a project based turnkey service whereby we will create and run test scenarios for you, using Shunra VE. At the end of the engagement we will generate comprehensive reports with an executive summary, which will give you the information you need to make informed deployment decisions and ensure service levels to remote end-users.

"We use Shunra VE to understand real-world performance and remote end-user response times – from different geographic locations and under various network conditions. We particularly like Shunra VE's ability to capture and use customers' actual production network parameters so that we can test our applications under the most accurate and realistic conditions possible."

Omgeo – leading provider of financial trading solutions



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