



1505 North Hayden Road
Suite J-10
Scottsdale, AZ 85251
Phone: (480) 421-9217
Fax: (480) 421-9241

2659 Townsgate Road
Suite 227
Westlake Village, CA 91361
Phone: (805) 371-0585
(818) 991-7407
Fax: (805) 494-7626

THE CASE FOR
REAL-TIME APPLICATION PERFORMANCE
MONITORING AS DELIVERED

BY



"The significance of Network Physics ability to view end-to-end data flows, in real-time, at Layer 4 cannot be understated. This architecture design significantly minimizes the management complexity of a solution designed to provide network operations staff the ability to maintain optimum application response time performance across complex and diverse enterprise networks."

Offered By

**Steve Marks
Starnet Data Design, Inc.
June 2006**



1505 North Hayden Road
Suite J-10
Scottsdale, AZ 85251
Phone: (480) 421-9217
Fax: (480) 421-9241

2659 Townsgate Road
Suite 227
Westlake Village, CA 91361
Phone: (805) 371-0585
(818) 991-7407
Fax: (805) 494-7626

TABLE of CONTENTS

EXECUTIVE SUMMARY.....	3
IT'S ROLE IN THE MODERN ENTERPRISE.....	3
DATA SCALE MANAGEMENT.....	5
MONITORING ALL THE NETWORK ALL THE TIME.....	5
NETWORK LOAD.....	6
Network Load – NP NetSensory 'Federated' Architecture.....	6
Network Load – Traditional Centralized Architecture.....	6
DATABASE LOAD.....	7
Database Load – NP NetSensory 'Federated' Architecture.....	7
Database Load – Traditional Centralized Architecture.....	8
MANAGEMENT COMPLEXITY.....	8
Management Complexity – NP NetSensory 'Federated' Architecture.....	9
Management Complexity – Traditional Centralized Architecture.....	9
The View From Layer 4.....	10
MAINTAINING DATA VALUE.....	11
BUSINESS-TO-NETWORK INTEGRATION.....	11
Business-To-Network Linkage – NP NetSensory 'Federated' Architecture.....	11
Business-To-Network Linkage – Traditional Centralized Architecture.....	12
MAINTAINING DATA VALUE THROUGH CHANGE.....	12
NP NetSensory 'Federated' Architecture.....	12
Traditional Centralized Architecture.....	12
MAINTAINING DATA VALUE UNDER AGGREGATION.....	13
NP NetSensory 'Federated' Architecture.....	13
Traditional Centralized Architecture.....	14
DELIVERING A UNIFIED VIEW OF THE NETWORK.....	15
EASY VISUALIZATION.....	15
LOCATION TRANSPARENCY.....	16
PROMOTING MANAGEMENT BALANCE.....	17
SUMMARY.....	18



1505 North Hayden Road
Suite J-10
Scottsdale, AZ 85251
Phone: (480) 421-9217
Fax: (480) 421-9241

2659 Townsgate Road
Suite 227
Westlake Village, CA 91361
Phone: (805) 371-0585
(818) 991-7407
Fax: (805) 494-7626

THE CASE FOR REAL-TIME APPLICATION PERFORMANCE MONITORING

EXECUTIVE SUMMARY

The business case for an enterprise to consider an investment in *Network Physics*' technology is centered on 3 fundamental questions

- 1) Is (and to what degree) Real-Time, Application Performance-Centric, Flow-Based Monitoring of value to the enterprise?
- 2) Is the degree of importance great enough to justify a "best-of-breed" investment selection?
- 3) Does the 'distributed' Enterprise Architecture of *Network Physics* clearly differentiate itself as compared to more traditional centralized database approaches?

This document attempts to substantiate an affirmative response to all of the above.

IT'S ROLE IN THE MODERN ENTERPRISE

It could be argued that IT's role and central function in the modern enterprise of 2006 and into the foreseeable future is to "*assure the performance, integrity and security of the application delivery infrastructure*".

As most enterprises IT infrastructures have grown in recent years to support the advancements in Information Technology's reach, they have outgrown the capacity of traditional 'Centralized Management' systems to effectively monitor application performance across the network divide.

"Large enterprise networks today are too large, too dynamic and too complex for the kinds of management solutions that attempt to assemble a coherent view of infrastructure operations and their impact on application performance and business processes by aggregating data from numerous infrastructure elements, agents and probes into a monolithic master database."



1505 North Hayden Road
Suite J-10
Scottsdale, AZ 85251
Phone: (480) 421-9217
Fax: (480) 421-9241

2659 Townsgate Road
Suite 227
Westlake Village, CA 91361
Phone: (805) 371-0585
(818) 991-7407
Fax: (805) 494-7626

For the IT department of today's enterprise to be successful in their quest of assuring performance, integrity and security of the application infrastructure in such a widely distributed and complex infrastructure as exists today, they will need to be able to address four fundamental challenges-

Monitoring "all the data all the time" provides management the real-time application performance visibility so crucial to fast and efficient problem resolution.

✓ **Monitor all the data all the time while balancing this blanket network coverage against the network, database and management complexity impact of data collection**

- ✓ **Maintain the value of this considerable amount of collected management data while preserving its troubleshooting and business relevance**
- ✓ **Deliver a unified view of the network from the correlation of all this data to present a logical and physical representation**
- ✓ **Promote a management balance that can enable network management balance between different management silos (e.g. server, database, application, network) while preserving balance between local and central control**

When considering traditional 'centralized' application monitoring approaches utilizing a central database and remote collectors, the cost and complexities of achieving high degrees of relevance to the 4 points above can be daunting.



1505 North Hayden Road
Suite J-10
Scottsdale, AZ 85251
Phone: (480) 421-9217
Fax: (480) 421-9241

2659 Townsgate Road
Suite 227
Westlake Village, CA 91361
Phone: (805) 371-0585
(818) 991-7407
Fax: (805) 494-7626

DATA SCALE MANAGEMENT

The primary issue in effectively monitoring network applications across national or global enterprise networks is managing the sheer volume of data that must be collected, aggregated, stored and analyzed.

One of the most significant value propositions of the *Network Physics* "system" is inherent in the solution's distributed database architecture combined with its intelligent data aggregation algorithms.

The "federated" database architecture of the *Network Physics* technology, and its ability to:

- ✓ monitor all the data all the time
- ✓ maintain the value of all this data while preserving its relevance
- ✓ provide a unified correlated hierarchical view of the network
- ✓ promote balance along departmental lines

In our opinion, sets the technology clearly above all other solutions available today in this arena and achieves a 'best of breed' status.

MONITORING ALL THE NETWORK ALL THE TIME

Assuming this management objective is of significant importance, the architecture of the proposed solution must be considered in the selection process.

Data collection has 3 'costs' to consider:

- **Network Load** – How much additional traffic has to be supported to carry management data from the collection sources to the central or top level management database?
- **Database Load** – How much data must the database be able to process and store per second, minute, hour or day?
- **Management Complexity** – How much additional time & effort is required to manage the system and all of its data sources?

The distributed, flow-based architecture of *Network Physics'* technology is much better suited than a traditional centralized management system to "*monitor all the network all the time*" without placing significant additional burden on network infrastructure or staff.



1505 North Hayden Road
Suite J-10
Scottsdale, AZ 85251
Phone: (480) 421-9217
Fax: (480) 421-9241

2659 Townsgate Road
Suite 227
Westlake Village, CA 91361
Phone: (805) 371-0585
(818) 991-7407
Fax: (805) 494-7626

NETWORK LOAD

Assuming the monitoring of all application performance data all the time is a worthy application management objective, the enterprise must consider a fundamental question in assessing its management strategy.

How much additional traffic must the network carry from the management data sources to the central or top-level database aggregation points?

Network Load – NP NetSensory ‘Federated’ Architecture

The amount of data collected monitoring ‘Application Performance’ on a large scale network can be substantial. NP’s ‘federated’ database architecture minimizes the burden on the network to maintain this data while also keeping it relevant.

In a distributed *Network Physics* implementation (NP-2000 Appliances collecting, NP Director aggregating), the architecture is intelligently designed to preserve the integrity of all data collected while minimizing the impact on the network for any transport.

The NP-2000 appliances read the TCP/IP header from every packet it can see. The appliances aggregate and process that header data in accordance with ‘Business Rules’ to reduce its volume by orders of magnitude while preserving its troubleshooting value and business relevance.

Even with these efficiency considerations, the volume of data collected by the NP appliances can be substantial considering they are collecting and calculating one-minute averages of over 60 metrics for all Business Groups, along with their member IPs, Connected IPs, Connected Groups, IP-IP conversations, Ports and Applications.

In order to minimize network load while all preserving the value of all this data, The NP appliances aggregate all this data into 5 minute averages and send a summary for each business group to the NP Director for global view, while preserving the 1 minute averages on the individual appliances for on-demand review.

Network Load – Traditional Centralized Architecture

The burden on the network of a traditional centralized management approach for collecting, transporting, correlating and analyzing 1 minute averages of all the application infrastructure elements that comprise the enterprise network today would be considerable.



1505 North Hayden Road
Suite J-10
Scottsdale, AZ 85251
Phone: (480) 421-9217
Fax: (480) 421-9241

2659 Townsgate Road
Suite 227
Westlake Village, CA 91361
Phone: (805) 371-0585
(818) 991-7407
Fax: (805) 494-7626

When considering traditional network management collectors (SNMP, RMON, S-Flow, Netflow), to match the one minute granularity of the *Network Physics* architecture would require significant polling overhead.

In considering Netflow, each packet can only report 18 variables (no performance data) on 30 flows. To match the flow data rate of a single distributed NP-2000 NetSensory appliance, the centralized Netflow collector would have to gather data at a rate of 800Mbps.

When considering SNMP or RMON there is no associated performance data, so to appropriately match the network load factor, the overhead of performance agents must also be included in the calculation.

If the impact of network load from a traditional centralized management system is too cumbersome the system must be scaled back by:

- a. reducing the number of devices monitored, or the number of performance agents
- b. reducing the sampling rate
- c. aggregating the data using intermediate devices

Or a separate network infrastructure must be created to carry management data.

All these options lead to either impaired management functionality or increased cost and complexity.

DATABASE LOAD

In consideration of all the data that must be collected, aggregated, stored and analyzed, understanding the scalability of the database architecture should be a primary consideration in platform selection. For any national or global enterprise seeking to efficiently monitor and manage mission critical business applications, the management platform must be able to process and store enough data such that this data is always relevant.

Database Load – NP NetSensory ‘Federated’ Architecture

***Network Physics* utilizes a standalone appliance (the NP-Director), for data aggregation. In the NP ‘federated’ database design, only 5 minute summaries of ‘business groups’ are uploaded to the Director, while 1 minute data is kept on each distributed monitoring appliance.**



1505 North Hayden Road
Suite J-10
Scottsdale, AZ 85251
Phone: (480) 421-9217
Fax: (480) 421-9241

2659 Townsgate Road
Suite 227
Westlake Village, CA 91361
Phone: (805) 371-0585
(818) 991-7407
Fax: (805) 494-7626

For a representative enterprise with 20 distributed NP NetSensory appliances, the total load on the director amounts to about 8000 records/minute or about 6 GB per day.

But every record is maintained on each distributed appliance and is transparently available on demand, with the 'Director' automatically connecting to the appliance where the more granular records are maintained.

Database Load – Traditional Centralized Architecture

The database in each NP-2000 can store up to 100,000 records per minute.

A centralized database attempting to store the same amount of data as 20 NP-2000's would need to process 2,000,000 records per minute.

Each NP-2000 can store 15GB/day. An equivalent centralized database would require 300GB/day capacity.

Considering a centralized database architecture using a traditional network management approach attempting to provide similar performance management with similar granularity of real-time performance information, and you can see the size and scope required.

A true value proposition of the NP architecture is how it minimizes the size and complexity of the database without minimizing the relevance of the data being collected.

MANAGEMENT COMPLEXITY

The degree of "burden" a comprehensive management system places on the network and the IT support staff must weigh heavily in the system selection criteria.

The core question relating to management complexity could be stated as –

"How much additional time and effort is required to manage the management system and all of its data sources?"

The Network Physics architecture addresses this consideration very efficiently.



1505 North Hayden Road
Suite J-10
Scottsdale, AZ 85251
Phone: (480) 421-9217
Fax: (480) 421-9241

2659 Townsgate Road
Suite 227
Westlake Village, CA 91361
Phone: (805) 371-0585
(818) 991-7407
Fax: (805) 494-7626

Management Complexity – NP NetSensory 'Federated' Architecture

A sample configuration utilizing the NP-Director appliance and “n” NP-2000 NetSensory appliances yields “real-time” and historical reporting on -

- ✓ Application performance
- ✓ Network Utilization
- ✓ Route Quality
- ✓ ISP Performance
- ✓ End user Experience

- Across the entire enterprise with a flexible interface that enables 3 different views of the network.

A **Business View** to report performance for key business functions, sites and services that enables prioritization of troubleshooting efforts. This view also serves to provide managers a topology for application services that enables a methodology for monitoring the flow of services between business entities.

A **Flow View** that quickly isolates problems to the server, the application or the network and enables managers to assign the appropriate management team.

An **Infrastructure View** that pinpoints cloud issues such as peering, route, BGP and MPLS problems which often go undetected by traditional management solutions.

The NP Director enables global configuration of all NP-2000 appliances in the Domain, while still permitting local configuration for special or ad hoc needs that don't require global oversight.

Reporting is also simplified as administrators can set up scheduled, customized reports aggregating data from any or all of the NP-2000 appliances in the Domain.

Management Complexity – Traditional Centralized Architecture

A centralized approach to application performance monitoring, utilizing less-sophisticated remote data collectors introduces significant complexity.

Device Management – Managing the actual remote devices collecting data.



1505 North Hayden Road
Suite J-10
Scottsdale, AZ 85251
Phone: (480) 421-9217
Fax: (480) 421-9241

2659 Townsgate Road
Suite 227
Westlake Village, CA 91361
Phone: (805) 371-0585
(818) 991-7407
Fax: (805) 494-7626

Data Flow Management – Managing the passing of information from the remote collectors to centralized or tiered aggregation points.

Aggregation Point Management – Managing the aggregation of data and its real data value is a significant task in many traditional approaches. Within the NP architecture, this task is completely automated.

The View From Layer 4

The Network Physics benefits of Layer 4 real-time application monitoring combined with a 'federated' database architecture cannot be understated.

The significance of Network Physics ability to view data flows at Layer 4 cannot be understated. This architecture design significantly minimizes management complexity of a solution aimed at achieving the stated objective of monitoring "all the data all the time".

Considering an Enterprise's requirement to roll out new applications to many remote locations, a Layer 4 Application View eliminates the need to have multiple data collectors. Appropriately placed Network Physics sensors in the HQ datacenter(s) will be able to monitor all traffic between a remote location and a critical application within the datacenter(s) without any additional traffic burden on the network.

Installation of NP-2000 NetSensory appliances and the NP-2000 Director via network span ports or taps requires no agents, synthetic transactions or SNMP traffic. This architecture insulates the network from any burden related to data collection. And data collection is largely insulated from device level changes in the infrastructure.



1505 North Hayden Road
Suite J-10
Scottsdale, AZ 85251
Phone: (480) 421-9217
Fax: (480) 421-9241

2659 Townsgate Road
Suite 227
Westlake Village, CA 91361
Phone: (805) 371-0585
(818) 991-7407
Fax: (805) 494-7626

MAINTAINING DATA VALUE

BUSINESS-TO-NETWORK INTEGRATION

Network Physics concept of 'Business Groups' provides the foundation for tying application performance monitoring to higher-level business management objectives.

An application or network management system is of most value when it links its findings to "business" goals and objectives.

To that end, the system must maintain links between the "business" and the "network" so that it can present data to IT staff in the context of business impact.

What application is involved and what business unit (user, partner, customer) is affected? Collecting, analyzing and reporting on data in a manner that ties this information to the business, enables management to properly prioritize their response to problems or efficiently plan network change.

***Network Physics'* ability to provide information within the context of the 'business' is one of its greater strengths and is the foundation of "Data Value".**

Business-To-Network Linkage – NP NetSensory 'Federated' Architecture

The "flow-based" nature of NP's architecture enables the Business-To-Network linkage so critical in maintaining data value.

Business Relationships to the Network are easily encoded within NP's 'Business Groups' (sets of IP addresses), 'Business Group Containers' (sets of business groups), or Applications (sets of ports).

Business Groups can represent servers, data centers, ISPs, branch offices/stores, departments, buildings, users, customers, partners or any other business-related entity.

Each Business Group contains numerous drill-downs for in-depth analysis. These drill downs include *Member IPs* (endpoints within the group), *Connected IPs* (endpoints outside the group that are connecting with endpoints within the group), *Connected Groups* (other Business Groups with one or more members connecting within the Group being analyzed),



1505 North Hayden Road
Suite J-10
Scottsdale, AZ 85251
Phone: (480) 421-9217
Fax: (480) 421-9241

2659 Townsgate Road
Suite 227
Westlake Village, CA 91361
Phone: (805) 371-0585
(818) 991-7407
Fax: (805) 494-7626

***IP-IP conversations (providing further detail on specific conversations),
Applications (by port or user-defined set of ports).***

Business-To-Network Linkage – Traditional Centralized Architecture

Much of the device and agent data upon which a traditional network management system depends does not typically represent 'business relationships'.

A router may carry traffic representing large numbers of transactions – but SNMP data on that traffic does not identify who is being affected at what the impact might be. A server or application may be accessed by many different users, business partners or customers.

Aggregating data from multiple remote data collectors complicates the linkage between the large volumes of data and the association of that data to business goals and objectives.

MAINTAINING DATA VALUE THROUGH CHANGE

NP NetSensory 'Federated' Architecture

The flow-based nature of the NP architecture makes it very resilient to network change. The business-network links encoded in Business Groups, applications and their related drill-downs are largely independent of infrastructure changes. The only infrastructure changes requiring manual intervention on the NP appliance are those affecting endpoints (e.g. adding a new server to a cluster).

As opposed to the replacement of a router in a remote store, that would not impact nor require any changes to the business group.

Traditional Centralized Architecture

Many traditional centralized network management systems rely on hand coded maps to illustrate the relationships between sets of devices and the business processes and entities they support.

Changes to any device supporting a given application or process, or any addition of a new device, requires reprogramming of the map, contributing to management complexity. The burden of change to the traditional centralized management system is significant.



1505 North Hayden Road
Suite J-10
Scottsdale, AZ 85251
Phone: (480) 421-9217
Fax: (480) 421-9241

2659 Townsgate Road
Suite 227
Westlake Village, CA 91361
Phone: (805) 371-0585
(818) 991-7407
Fax: (805) 494-7626

MAINTAINING DATA VALUE UNDER AGGREGATION

NP NetSensory 'Federated' Architecture

NP INTELLIGENT ALGORITHMS

The *Network Physics'* system reduces the volume of network management data by many orders of magnitude, to make it intelligible and manageable while maintaining its relevance.

NP's set of data aggregation algorithms is one of its core values. While the algorithms are complex in nature they are simple in operation. Their objective is to intelligently and efficiently aggregate and condense management data to keep its size manageable without sacrificing its business relevance.

Aggregation Bias - Business Biasing

This bias is designed to keep data that is more important to the business more granular (shorter time averages) and for longer periods of time.

Assumptions are made that IP addresses and applications specifically included into Business Groups are more important to the business than those that are not. The algorithms give preference to this data.

Aggregation Bias - Throughput Biasing

IP addresses with higher total throughput are by default considered more important than those with less. This approach makes the algorithms dynamic in that IP addresses generating a lot of traffic to a business group will automatically have more data recorded about it and will show up as a connected IP in the drill downs for that Business Group.

NP INTELLIGENT STORAGE – 'GROUP THEN TOP' APPROACH

The algorithms in each NP-2000 in the federated database design "top" the data gathered preserving the highest granularity of data for the top "N" drill downs (considered by total throughput) across all Business Groups and Applications – and report all the other traffic as an aggregate total.

This design of this algorithm insures that the most important data (defined Business Groups and Applications) are always 100% accurate. As



1505 North Hayden Road
Suite J-10
Scottsdale, AZ 85251
Phone: (480) 421-9217
Fax: (480) 421-9241

2659 Townsgate Road
Suite 227
Westlake Village, CA 91361
Phone: (805) 371-0585
(818) 991-7407
Fax: (805) 494-7626

contrasted with many Centralized algorithmic approaches that have to use a 'Top Then Group' approach in order to deal with the large volumes of data being aggregated within a single centralized database.

NP TEMPORAL AGGREGATION

Temporal aging is deployed to preserve disk space.

After a period determined by the management data rate, one minute data is averaged to 5 minutes, then one hour, then one day. This is the only form of aggregation that takes place in NP Director. Which does not top any data and stores only 5 minute and longer averaged data.

The distributed NP2000 collectors do not report any IP address data to the Director, only Business Group, Application and Connected Group information. But the more detailed NP2000 information is always available as drill downs from the NP 2000 Director console.

Traditional Centralized Architecture

The aggregation points in a true centralized system, by definition, are not intelligent enough to aggregate data in such a way that preserves its troubleshooting value or relevance to the level that is provided within the NP 'Federated' architecture. Within a centralized system with unintelligent aggregation points, there is additional management burden to make the proper aggregation decisions so that important data is not lost.

While it may be possible to use NetFlow or RMON data combined with data from application response agents to create groupings analogous the NP's 'Business Groups', it would only be with a great deal of effort and expense.

It may also be possible to create intermediate aggregation points to use these groupings and collect all this data, but these devices would have to be able to understand a wide variety of MIBs and the proprietary data models from the application response agents. Again creating significant additional time and expense to create. And adding new devices in to the management framework would be cumbersome as well.

While it is conceivable a traditional centralized management system could be designed to maintain the troubleshooting value and business relevance of all the data it collects, the practical reality of maintaining a system makes it an expensive and complicated proposition.



1505 North Hayden Road
Suite J-10
Scottsdale, AZ 85251
Phone: (480) 421-9217
Fax: (480) 421-9241

2659 Townsgate Road
Suite 227
Westlake Village, CA 91361
Phone: (805) 371-0585
(818) 991-7407
Fax: (805) 494-7626

The flow-based architecture of the Network Physics Management System requires no such effort or additional expense.

DELIVERING A UNIFIED VIEW OF THE NETWORK

A viable Network Management/Monitoring system must provide the IT staff

- ✓ ***Easy visualization*** of the physical and logical structure of the network
- ✓ **Location transparency** – or the ability to find data without knowing where it comes from

EASY VISUALIZATION

In the NetSensory Enterprise Architecture, it is 'Business Groups' and 'Applications' that encode the logical structure of the network, and do so in such a way that it is largely impervious to the physical structure of the network.

Business Groups can also be aggregated in Business Group Containers, higher-level groups that can contain any set of Business Groups or other containers. The NP Director then groups aggregate data into Director Groups, enabling the ability to have a 'simplified' unified view of logical network relationships that involve complex combinations of physical devices.

In a device-oriented view, for example, it is very difficult to ascertain

- a. **To what degree is Store #567 accessing PeopleSoft applications both total and by server/data center?**
- b. **What is the average PeopleSoft application response time for Store #567?**

The NetSensory Enterprise Architecture enables the network to be viewed in such a manner where deriving this information is a relatively simple operation.



1505 North Hayden Road
Suite J-10
Scottsdale, AZ 85251
Phone: (480) 421-9217
Fax: (480) 421-9241

2659 Townsgate Road
Suite 227
Westlake Village, CA 91361
Phone: (805) 371-0585
(818) 991-7407
Fax: (805) 494-7626

LOCATION TRANSPARENCY

Both the NP-2000 and the NP Director enable a 'Group Topology' window that simplifies the "physical" inspection of the network as related to viewing Business Group Container, Business Group or Application information.

The Group Topology Window enables immediate auto-discovery and auto-mapping of the logical relationships between Containers, Groups and Applications. From this point it is easy to access detailed metrics about any of these groupings complete with the availability of all detailed metrics.

For example, when the call comes into the help desk from Store #567 that User A is having trouble with "PeopleSoft", NP gives the network operations staff the ability to immediately view the PeopleSoft Business Group container which can be further drilled into to view the PeopleSoft Server Business Group at HQ and the secondary PeopleSoft Server Group from the Distribution Center.

The NetSensory architecture maintains location transparency so the troubleshooting effort is not dependant on the user knowing where the data is being collected or the physical structure of the network. The relationship between the source of the data and its business impact is encoded in Business Groups, Business Group Containers, Director Groups, Applications and all their related drill-downs. The network is virtualized so that operations management staff can obtain useful insight into the business impact of network operations without extensive knowledge of the network's physical structure.



1505 North Hayden Road
Suite J-10
Scottsdale, AZ 85251
Phone: (480) 421-9217
Fax: (480) 421-9241

2659 Townsgate Road
Suite 227
Westlake Village, CA 91361
Phone: (805) 371-0585
(818) 991-7407
Fax: (805) 494-7626

PROMOTING MANAGEMENT BALANCE

The distributed NP Enterprise Architecture provides its customers the ability to add balance into their network operations paradigm.

Most large enterprises employ separate teams of operations' staff to manage the network, the servers and the business applications. The tools utilized by each team tend to promote a fractured troubleshooting methodology that often leads to finger-pointing, lack of cooperation and time wasted by teams troubleshooting problems outside of their management silos.

The NP Application Monitoring system manages end-to-end conversations between clients and servers by aggregating data from TCP/IP packet headers as the data passes through aggregation points (NP2000s). The collection and analysis of this information yields detailed metrics about network response time, server response time and application response time. With all this information in one place, the system can quickly point to the origin of an issue (network, server or application) enabling the appropriate team to zero in on the issue efficiently.

The other imbalance point within large enterprise network management paradigms is the demarcation between local and global control. The federated design of the NP system enables clear distinction as to which activities or scenarios will be alerted at the local level versus those that will attract the attention of the central management staff.



1505 North Hayden Road
Suite J-10
Scottsdale, AZ 85251
Phone: (480) 421-9217
Fax: (480) 421-9241

2659 Townsgate Road
Suite 227
Westlake Village, CA 91361
Phone: (805) 371-0585
(818) 991-7407
Fax: (805) 494-7626

SUMMARY

The *Network Physics* Application Monitoring and Management system would enable Guitar Center to have unparalleled visibility into end user experience as related to the delivery of their core business applications to their employees. And the ability to quickly identify and pinpoint the source and nature of conditions negatively (or positively) impacting that delivery.

The system would also enable Guitar Center to correlate Application Performance monitoring to defined business groupings and strategic business objectives or Service Level Agreements.

The value-proposition of Network Physics is inherent in its ability to efficiently-

Monitor All The Data All The Time – Distributed flow-based technology that can provide real-time end-to-end oversight of even the most complex networks.

Maintain Data Value – Intelligent algorithms that automatically adapt to changes in the network infrastructure so that data is always displayed in the context of its business impact and so that data with the most business value is always available.

Deliver A Unified View Of The Network – Auto-mapping and auto-discovery of Business Groups, Containers and Applications to provide immediate viewing into the logical relationships within the network, enabling the ability to visualize and explore the flow of applications services between business entities.

Promote Management Balance – Provide the insight and control to enable the most appropriate operations team to be deployed to repair a specific problem and to provide a demarcation between local and global alarming.