WHITE PAPER

Traverse:
Integration APIs, Plugins and Alignment with ITIL

TRAVERSE by Kaseya

Agility and efficiency of service management processes requires integration of the monitoring system in the broader ecosystem of enterprise applications, whether it be the enterprise Configuration Management System (CMS) or the ticketing application. Monitoring solutions need to provide rich, two–way integration APIs and plugins, and also leverage industry best–practices to enable seamless service management. The Information Technology Infrastructure Library (ITIL) is a set of frameworks and concepts that describe best practices for information technology infrastructure management and operations.

Adoption of ITIL techniques can help organizations improve the overall quality of IT services and reduce the total cost of ownership. ITIL v3 places a renewed focus on business and IT alignment, and more importantly, better mapping the relationships and understanding the impact of IT infrastructure on business processes and services. Monitoring solutions need to support the critical disciplines in the ITIL framework with features such as configuration management, fault and performance management, SLA reporting, and business service management. This white paper summarizes the key capabilities of integration APIs and ITIL areas that Traverse directly supports.

Integration Requirements

The monitoring system has to support different points of integration depending on the stage of the service management lifecycle, whether it be configuration of devices and tests, establishing user privileges, capturing performance data from custom applications/systems, initiating actions/notifications in external ticketing systems, or displaying performance data on external portals.

As enterprises more broadly adopt centralized configuration management practices through use of Configuration Management Systems (CMS – formerly known as the CMDB), the monitoring system has to support the programmatic creation of relevant objects (e.g. devices, tests, services, etc.). The definitions and relationships of Configuration Items (CI) from various data sources need to be inserted into the monitoring system via a read/write API. Additionally, integration with external authentication systems is required to more seamlessly enable use of the monitoring system as part of the overall enterprise application environment.

In many modern data center environments, the monitoring system has to be capable of accepting performance data feeds from custom applications. This could also include processing syslogs and event logs generated by applications. Certain events generated by the monitoring system may require initiating an action or process in some external system (e.g. ticketing). Also, completion of these actions or processes in the external system may require making a status update in the monitoring system itself. Finally, service performance data may need to be displayed on external end–user portals, or even transmitted to an external data warehouse or reporting engine. All of these requirements need to be supported via flexible, open APIs and plugin frameworks within the monitoring system.

Traverse Integration APIs and plugins

Traverse provides a rich set of APIs and open extensibility for integrating with existing systems or technology that Traverse needs to co–exist with. The API and external feeds provide interface points to either import or export data throughout the IT environment. The configuration database API can be used with used with Perl, Java, C or any similar language, and allows provisioning and updating users, devices and tests.

The standard Traverse authentication methods can be overridden by creating plugin Java

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classes or scripts. This allows the use of custom authentication databases or other site–specific authentication methods to control access to Traverse. Additionally, Traverse provides the facility for integrating with a Web portal and using the Web portal's authentication mechanism.

Traverse provides an External Data Feed (EDF) mechanism that allows external data to be sent to and processed by Traverse as though it had been collected by Traverse itself. Any external tool can send results and events for any existing test, and the result/event will be processed as if a Traverse monitor had polled the result. The EDF can handle external data feeds for pre–tested structured data or raw ASCII text data.

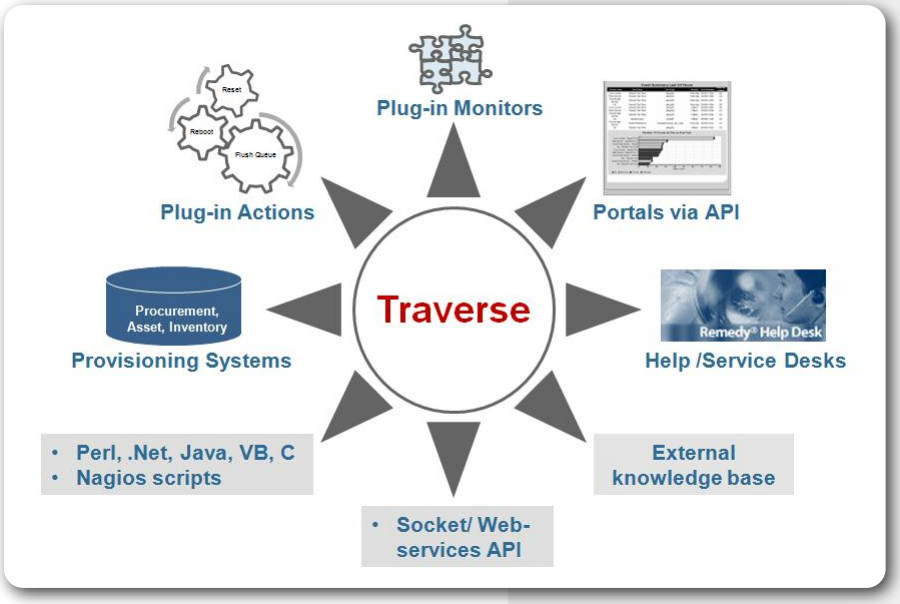
The standard action framework in Traverse can be extended easily using the Plugin Framework to run any external program. The device name and test information can be passed to the external program to build very flexible actions (which can then use the API to query the state of another device and test before executing a corrective action). For example, the Remedy Trouble–ticket Plugin adds a new custom action to the drop–down list of actions available to a user of the Traverse Web application. The action can be confined to trigger after a certain number of test cycles, repeat after several test cycles, and trigger during certain hours of the day, like any Traverse action. Once triggered, the script either updates an existing ticket or creates a new ticket. If a new ticket is created, the URL to the ticket is added to the device comment.

ITIL Overview

The ITIL best practices and frameworks for holistic service management are organized by the top–level areas of Service Strategy, Service Design, Service Transition, Service Operation and Continual Service Improvement. The primary frameworks related to service delivery are Service Design, Service Transition and Service Operation.

Service Design focuses on the design of appropriate and innovative IT services, including their architectures, processes, policies and documentation, to meet agreed upon business requirements. The key processes covered within Service Design are:

- Business/Catalog Service Management
- Service Level Management
- Capacity Management
- Availability Management



Service Transition focuses on implementation and putting into operational use the services that are required by the organization. The key processes covered within Service Transition are:

- Change Management
- Configuration Management
- Knowledge Management

Service Operation focuses on the actual delivery of agreed upon levels of service to users and customers, and to managing the applications, technology and infrastructure that support service delivery. The key processes covered within Service Operation are:

- Event Management
- Incident Management
- Service Desk

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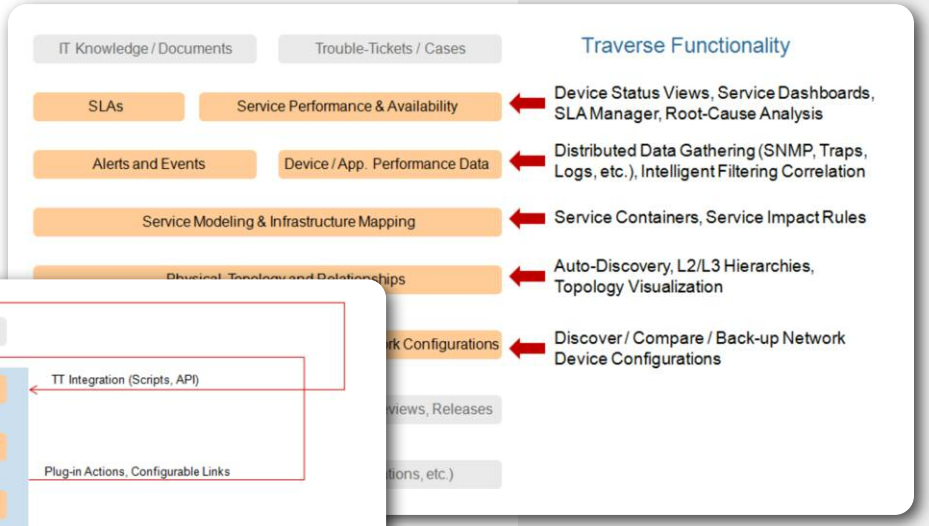
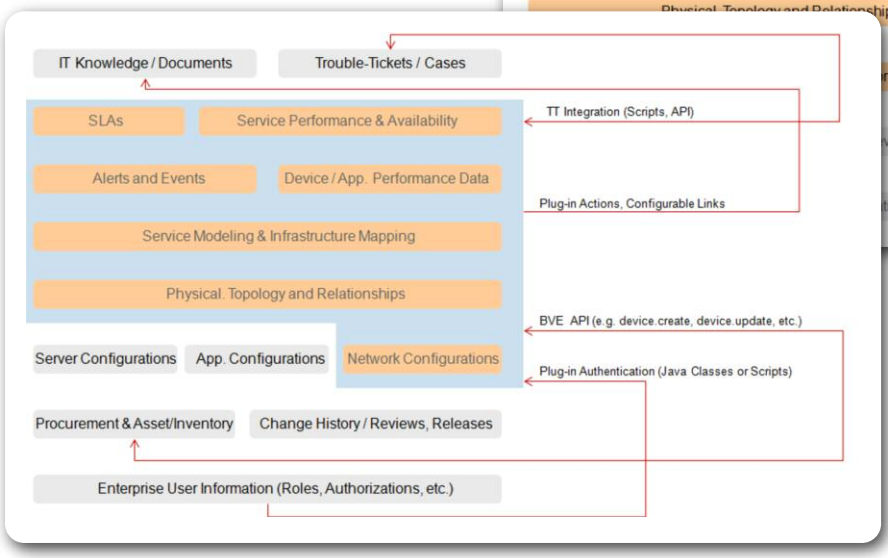
Domains of IT Data and Traverse Integration

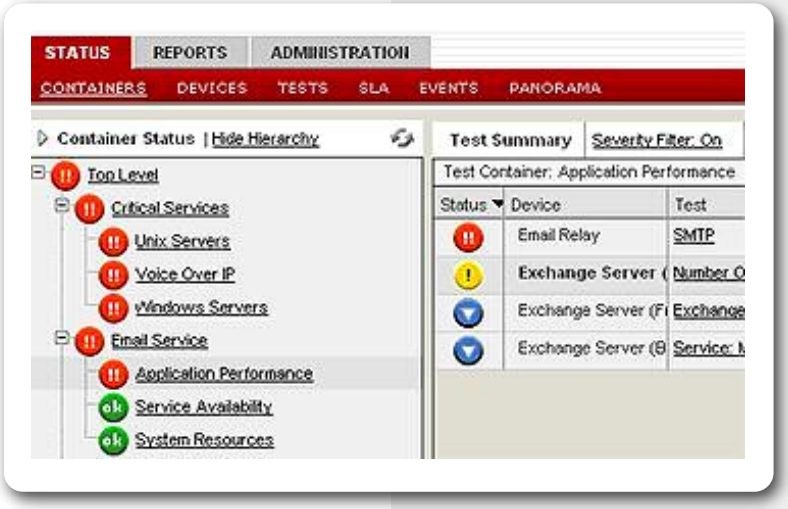
ITIL v3 introduced the concept of CMS, and defined this as a "…set of tools and databases that are used to manage an IT service provider's configuration data…." ITIL now endorses the practice of having multiple domain–specific Management Data Repositories (MDRs) or Configuration Databases (CDBs), which, in turn, enables a more pragmatic approach to achieving fully integrated ITSM processes. Some these domains, as shown below, are directly impact Traverse, and the Traverse APIs support integration with other applications to consume data maintained by other applications, and expose data that other applications need to consume.





Business Service Management (BSM)

The BSM capability provides a central view of the IT services and technologies that support critical business services and processes. This allows the business to view and understand the health, details and status of business services, and is based on cataloging the mapping and relationships between business services and the underlying IT enablers. BSM focuses on connecting the worlds of IT and business. A BSM-centered approach to IT operations and management provides more then just a technology perspective by helping organizations better manage and monitor their end–to–end business processes. Within a BSM-enabled environment, business-impacting issues are dealt with proactively and rapidly, with the business owner remaining informed and in control of setting priorities that need to be addressed right away versus things that can be postponed.



Traverse provides comprehensive BSM capabilities, enabling organizations to have real–time visibility into the performance of business services. Traverse's break-through Business Container technology enables IT and business personnel to create unique virtual views of discrete business services, and makes the alignment of infrastructure technology with business outcomes a reality. The technology allows linking applications and

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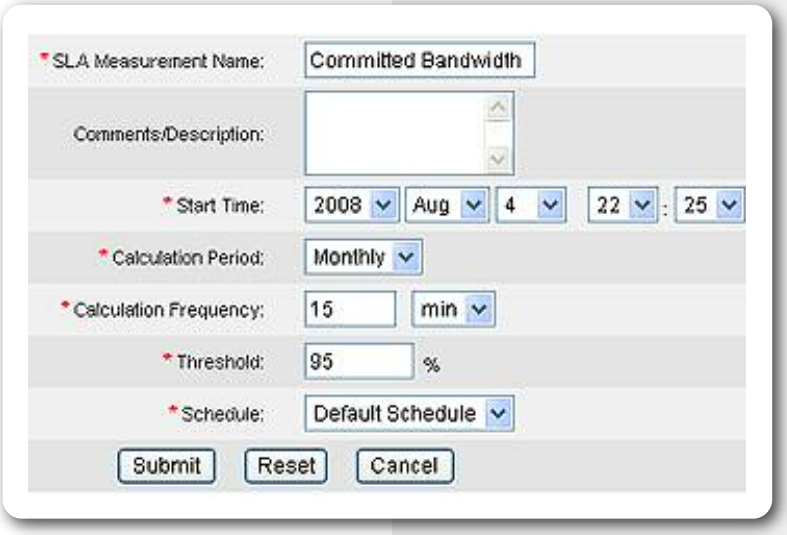
underlying infrastructure to services such as ordering and payroll. Business Service Containers can have unlimited staggered and recursive hierarchies. Rather than just labeling a loose collection of objects as a "business service," Traverse goes much further by making its Business Service Containers fully aware of the underlying L2/L3 relationships between components. In building topological awareness and connectivity dependencies into these business containers, Traverse provides IT and business managers with a more valuable business services view showing the full impact of IT infrastructure on service delivery.

Service Level Management (SLM)

SLM focuses on ensuring that delivered services match the pre–defined, agreed–upon and expected levels of performance and availability. This contract is achieved via defining and monitoring Service Level Agreements (SLA) between the IT department and its users.

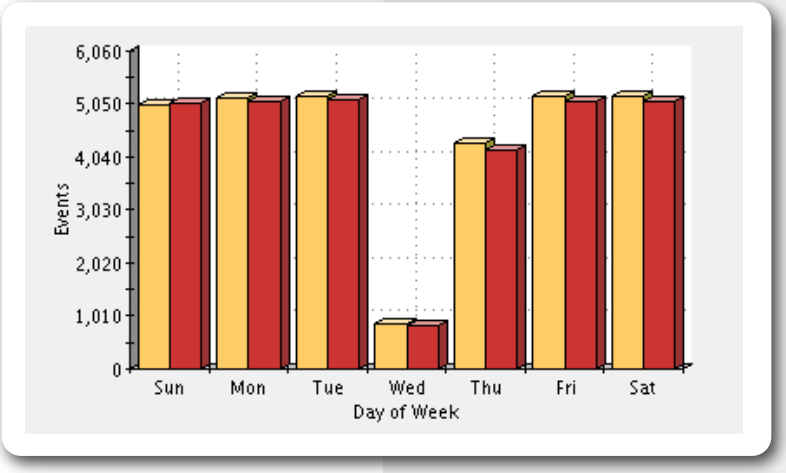
Traverse provides comprehensive SLM capability to fully monitor, measure, track and report on the quality of IT services delivered to end users. Using Traverse's SLM capabilities, organizations do not have to stop at just network or server SLAs, but can monitor and track the performance of business services and applications. Traverse supports specification of SLAs for services and infrastructure in terms of defined metrics, such as, availability, latency, and Committed Information Rate (CIR). Traverse measures compliance against defined SLAs, and provides reports of compliance against SLAs using real–time SLA dashboards. Traverse provides business services SLA management capability (e.g. ecommerce website uptime %) to monitor and measure SLAs from a business service perspective.



Availability Management

Availability Management focuses on enabling organizations to sustain the availability of IT services in order to support the business. This includes defining availability requirements, monitoring availability, and managing maintenance obligations.

Traverse provides comprehensive functionality for availability management of IT infrastructure and supported business services. Traverse enables defining thresholds for simple and composite metrics that are indicators of IT performance and availability. Traverse collects, analyzes, and stores a variety of performance data, and captures, processes and displays a variety of events for monitoring IT availability. Traverse retrieves data upon request and generates reports and views based on the actual state of infrastructure. Traverse's trend reports provide short–term and long–term trend plots of imminent availability violations, and customized reports for fault and performance. Traverse reports help measure and display the availability (or uptime) percentage, Mean Time to Recovery / Mean Time Between Failures (MTTR/MTBF), and scheduled versus unscheduled downtime.



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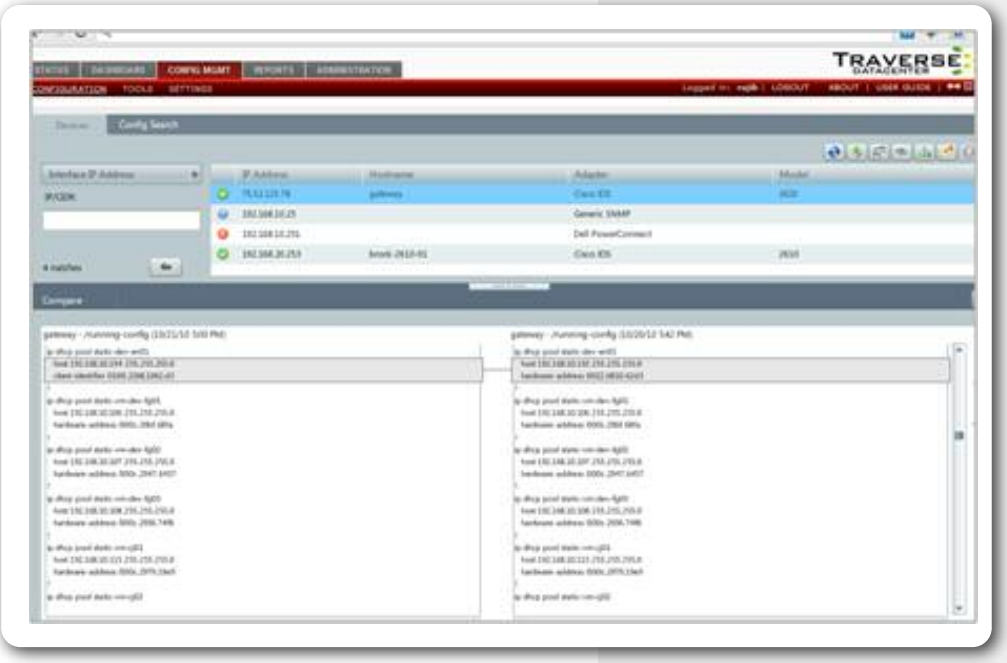
Configuration Management



Configuration Management supports the business by providing accurate information and maintaining control of the details of the technology assets and the relationships that make up an organization's infrastructure. Configuration Management helps identify, control and account for the various Configurations Items (CI) in the infrastructure, and ensure their integrity as part of the service delivery lifecycle.

The Traverse Configuration Management module enables backup, restore and tracking of changes in device configurations across the enterprise network. Proper tracking and notification of configuration changes in the network prevents unexpected outages, as well as helps to correlate undesired changes in network behavior with recent configuration changes. Traditional Network Management solutions have disparate monitoring and configuration tracking capabilities with no correlation between them. Unexpected configuration changes can result in major network outages, which can then take an extremely long time to track down. This drives up costs for the enterprise, and effects overall business performance. Traverse addresses these challenges by providing business service monitoring, network performance management capability, and flexible configuration management in one unified and integrated system. Not only can IT administrators correlate network outages to configuration changes instantly, but also instantly see the impact on a Business Service through use of Traverse's BSM module. This reduces the MTTR from outages and directly improves the bottom line.

Event Management

Event Management involves collecting, filtering, and categorizing of events, and deciding on the appropriate actions to take. Event Management involves collecting a variety of data and applying rules to determine the severity of potential issues.

Active Events | Acknowledged | Suppressed Tests | All Events

State	Event ID	Device Name	Address	Last Time	Event Count	Message Text
	14829	Agent-72-239	172.21.72.239	2/8/07 6:56 PM	5485	Octets/s: current value = 11,207, High Threshold = 1,000
	14825	Agent-71-196	172.21.71.196	2/8/07 6:56 PM	5340	Octets/s: current value = 10,770, High Threshold = 2,000
	14828	Agent-72-239	172.21.72.239	2/8/07 6:55 PM	2215	Packets/s: current value = 234, High Threshold = 150
	14831	Agent-71-196	172.21.71.196	2/8/07 6:55 PM	2154	Packets/s: current value = 446, High Threshold = 150
	17922	Agent-71-196	172.21.71.196	2/8/07 6:54 PM	6	Collisions/s: current value = 4, High Threshold = 1
	17921	Agent-71-196	172.21.71.196	2/8/07 6:54 PM	6	Errors/s: current value = 4, High Threshold = 1
	17936	Agent-71-196	172.21.71.196	2/8/07 6:54 PM	2	Window Frozen - TCP: [172.21.63.149] - [172.21.72.216] Port 1146 - 1463
	17926	Agent-72-239	172.21.72.239	2/8/07 6:42 PM	3	Collisions/s: current value = 3, High Threshold = 1
	17925	Agent-72-239	172.21.72.239	2/8/07 6:42 PM	3	Errors/s: current value = 3, High Threshold = 1
	17928	Agent-72-239	172.21.72.239	2/8/07 6:42 PM	1	Utilization(%): current value = 3, High Threshold = 1

Traverse captures, processes and displays a variety of events such as SNMP traps, Windows Events, and syslogs. The functionality is completely web based. Traverse supports acknowledgement and annotation of events. Selected events can be suppressed until a given time, and deduplication and correlation of events of the same category is supported. From the device–level view, application users can invoke the event manager and initiate ondemand customized actions, such as creation of remediation work tickets.

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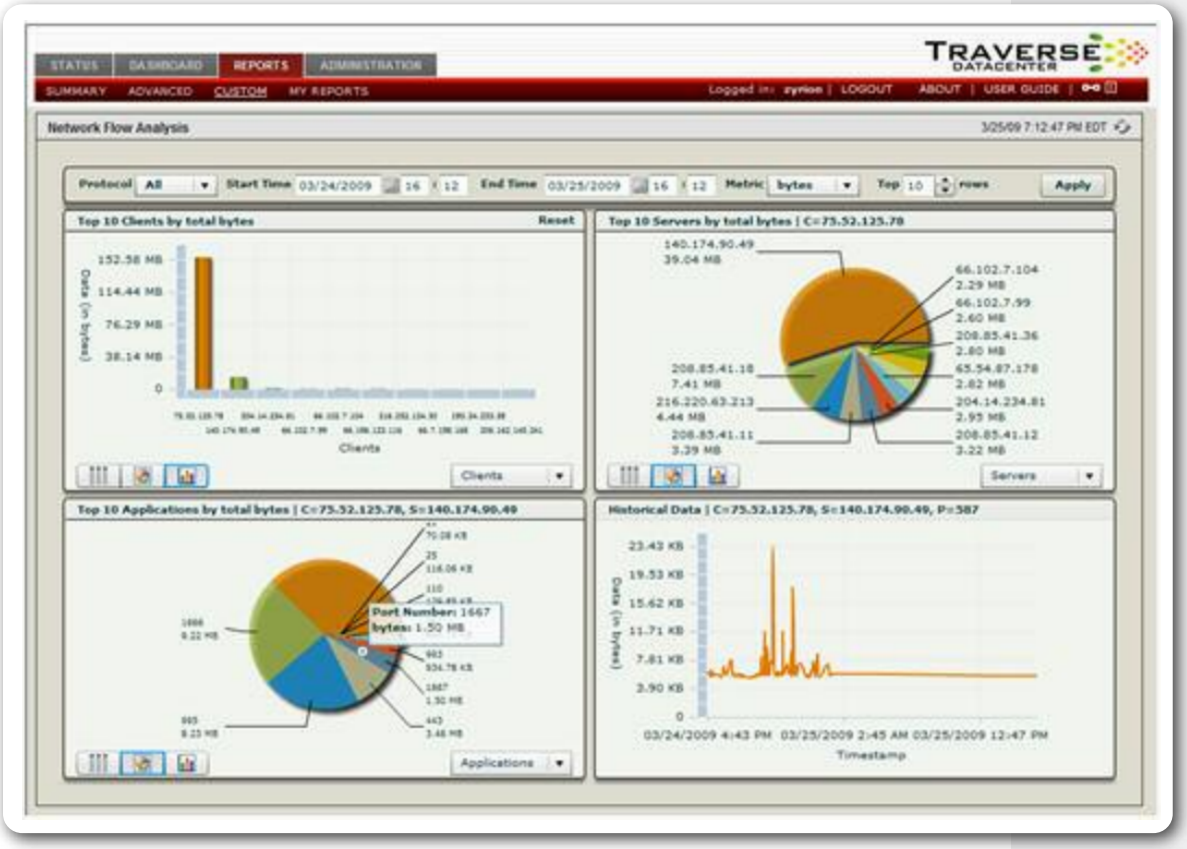
Incident Management

The main purpose of Incident or Problem Management is to find and resolve the sources of problems and prevent incidents or impacts to the business. Incident Management involves identifying and resolving the root causes of IT problems with the goal of minimizing the adverse impact of these problems on the business, and to prevent recurrence of problems related to specifically identified causes. Root cause analysis in today's organizations concentrates on minimizing "business downtime."

Traverse provides advanced root cause analysis features that extend beyond traditional network-level analysis. The root cause analysis engine is based on a Service Object Model designed for analyzing end–to–end business impact instead of just stopping at the network layer. Traverse also provides integrated NetFlow capability, allowing users to drill–down from a business view to the component view and down to the specific offending metrics with a couple of mouse clicks. This enables quick identification of impacted services, trouble areas and problem sources. Flow–level analysis, packet mining and decodes help identify problem sources.



Service Desk / Help Desk

The Service Desk is meant to provide a single contact point for information on IT problems, and for users to report and record discovered problems. The Service Desk has to quickly identify impacted applications/business processes (what is affected), trouble areas (where to look) and problem sources (what to analyze further and resolve). Most importantly, the Service Desk has to have a consolidated, end–to–end view of the IT infrastructure in order to provide relevant updates and information to their business user constituency.

With Traverse, the Service Desk has access to all the key information related to the performance and availability of the IT infrastructure, and can collaborate with business users to identify and resolve problems. Traverse has a built–in federated security model which supports multiple departments, users or customers in using a single instance of the software.

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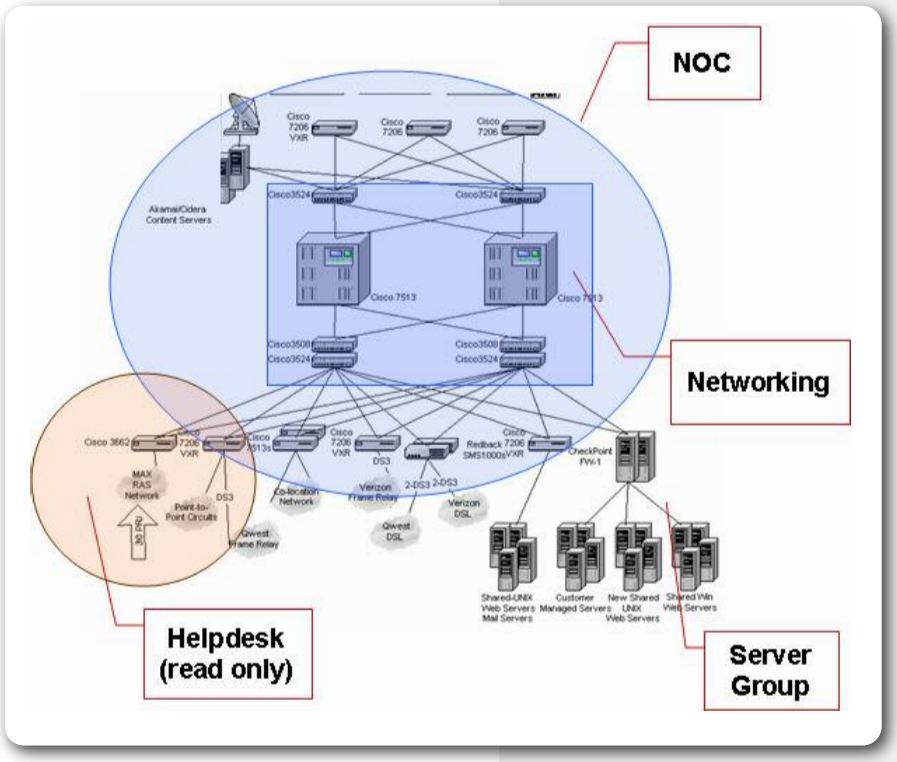
The flexible security model allows creating read–only or read–write users, administrative users within a department/domain, or administrative users across departments/domains. Private departmental or user–specific views can be enabled in a single deployment of Traverse. Traverse's federated security model allows defining flexible policies on what views are available to different departments.
A read–only high-level view can be provided directly to the Service Desk team, so that they are looking at the same data as the IT operations staff or the engineers, and can provide well-informed answers to their end customers.



Conclusion

Adoption of ITIL techniques can help organizations improve the overall quality of IT services and reduce the total cost of ownership. Traverse supports several critical disciplines in the ITIL framework and provides the critical business service management and monitoring tools that enable business process owners and the IT operations team to collaborate in ensuring the smooth running of business services. Traverse is an advanced ITIL–compliant network and systems management application that provides instant visibility into the performance of business services.

Leading global organizations such as Sony, Cisco, US Army, US Navy, United States Postal Service and Veterans Affairs trust Traverse for monitoring real–time fault and performance metrics of business services and IP infrastructures. A free trial of Traverse can be downloaded from **http://info.kaseya.com/Traverse-Trial.html**

ABOUT TRAVERSE

Traverse is a next-generation monitoring solution from Kaseya, a global software solution provider with over 10,000 customers globally. Traverse's patented technology offers a distributed, scalable monitoring platform with rich data analytics and unified cloud & network management. Traverse allows enterprises and Managed Service Providers to optimize their IT operations with faster mean time to resolution for slow or failed IT services within their infrastructure. Customers leveraging Traverse include the Fortune 100 as well as small-sized and medium-sized businesses worldwide. For more information, visit **www.traverse-monitoring.com**

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