JENNIFER V5

Product Introduction

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JENNIFER

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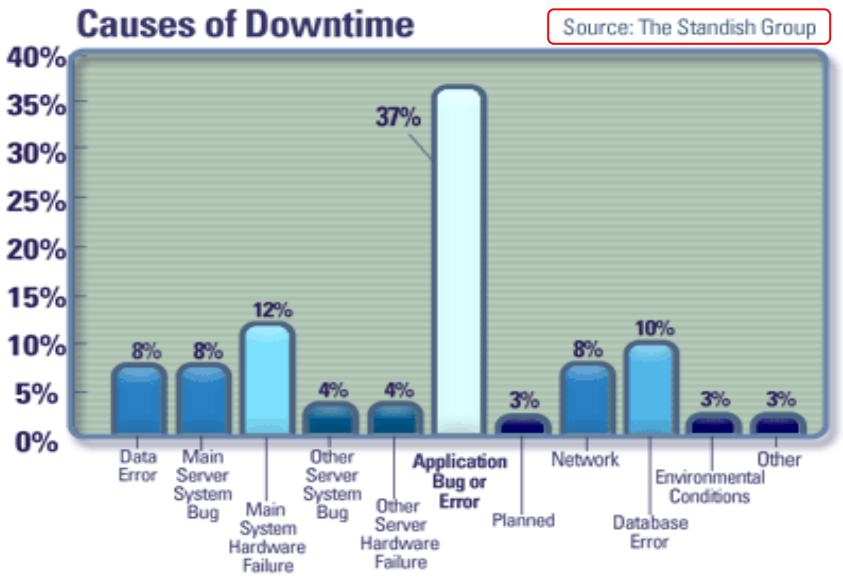
JENNIFER
Application Performance Management

1.1 What Is Application Performance Management

APM, or Application Performance Management, is an approach to IT system management that focuses on monitoring and managing the performance of enterprise applications to ensure the usability of services for end users.



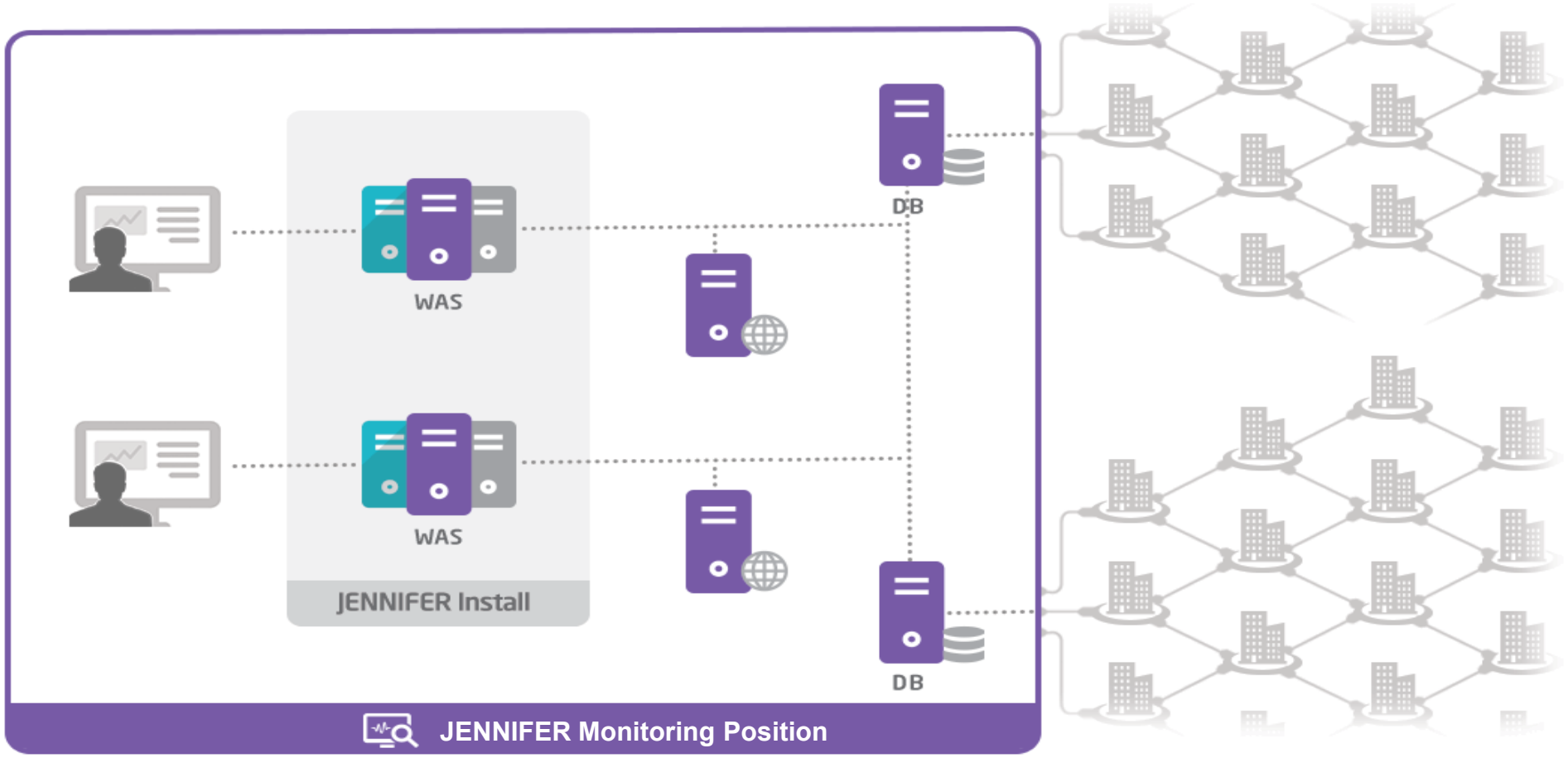
Is Application Performance affecting Bottom Line of your organization?

Key Points

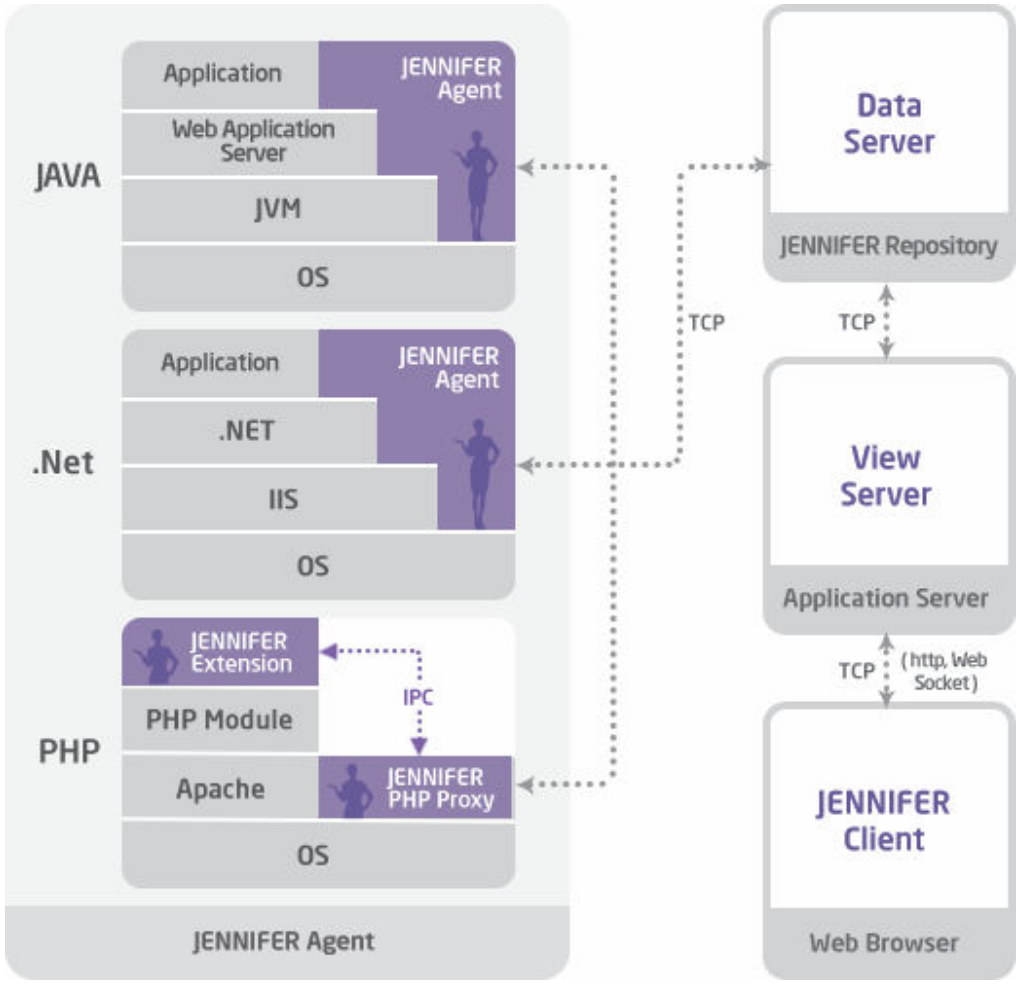
- What is APM
- Why Need It?
- Application Performance is Business Performance

1.2 JENNIFER APM: Monitoring Position

JENNIFER is an APM solution that effectively can manage various and complex IT systems around the application servers



1.4 JENNIFER APM: Architecture



01 JENNIFER Agent

- Installed in the application server, collect various performance data and send it to the data server.

02 JENNIFER Data Server

- Receive performance data from JENNIFER agent, process and store it in JENNIFER repository

03 JENNIFER View Server

- Requests data required for dashboard from data server and transmit this data to web browser

04 JENNIFER Repository

- Store the performance data.

05 JENNIFER Client Console

- HTML5 based client console, access to JENNIFER dashboard.

1.5 JENNIFER APM: Supported Platforms

JENNIFER supports most of the operating systems, Java (IBM, Oracle, HP) and WAS operating in the current IT environment. When a new version of OS, Java or WAS is released, JenniferSoft can provide you with a process and supporting organization to help you verifying the product compatibility within 24 hours.

JAVA

OPERATING SYSTEMS
- AIX 5.x, 6.x, 7.x 32bit, 64bit
- HP-UX 11.x 32bit, 64bit, Itanium 64bit
- Oracle Solaris 2.8, 2.9, 10, 11 32bit, 64bit, x86
- Intel Linux 32bit, Redhat Itanium 64bit
- Microsoft Windows 2000, XP, 2003, 2008, 7, 8
- IBM iSeries(AS400) for WebSphere
- IBM z/OS for WebSphere, zLinux

APPLICATION SERVER
- BEA WebLogic 9.x, 10.x, 11.x, 12.x
- IBM WebSphere Application Server 6.1, 7.x, 8.x
- Tmaxsoft JEUS 4.x , 5.x, 6.x, 7.x
- Oracle Application Server ERP
- SUN Application Server 8.x, 9.x
- Fujitsu Interstage 5.x, 6.x, 7.x
- Hitachi Cosminexus 7.x, 8.x, 9.x
- Sybase EAServer 4.x, 5.x
- Apache Jakarta Tomcat 5.x, 6.x, 7.x, 8.x
- Caucho Technology Resin 3.x, 4.x
- RedHat JBoss Application Server 6.x, 7.x
- GlassFish 2.x, 3.x

PHP

Web Server
- Apache 2.2 in prefork, worker, event mode

PHP version : operation apache module
- 5.2, 5.3, 5.4 (except 5.5)

GNU libc version
- 2.5 or higher

Operating Systems
- Linux kernel version 2.6.8 or higher
  (RHEL 5 or higher Ubuntu 7 or higher)

SQL collection Interface
- Mysql, Mysqli, PDO, pgsql, oci8

.NET

Web Server
- IIS 6.0 or higher (6.0, 7.0, 7.5, 8.0, 8.5)

.NET framework
- .NET Framework 2.0 or higher (2.0, 3.0, 3.5, 4.0, 4.5)

Operation System
- Windows Server 2003 or higher
  (2008, 2008 R2, 2012, 2012 R2), x86 and x64

SQL collection interface
- System.Data.SqlClient
- System.Data.Odbc
- System.Data.OleDb
- Oracle.DataAccess.Client (ODP.NET)
- Npgsql (PostgreSQL)

1.5 JENNIFER APM: Key Features

JENNIFER features include real time monitoring of individual transactions of a given system in a complex IT environment . The scalable architecture of JENNIFER makes it easy to support those kind of complex environment as well as cloud. The topology view will visualize the aspects of the system which makes it easy to spot the areas experiencing poor performance.

Real Time Monitoring

- Role Based dashboard
- Real time Topology View
- N-Screen monitoring environment support
- Individual Active Service Monitoring
- Real time transaction analysis
- Alert

Performance analysis and statistics

- Detailed transactions profiling (X-View)
- Smart Profiling
- Real User Monitoring
- Statistical analysis and repots

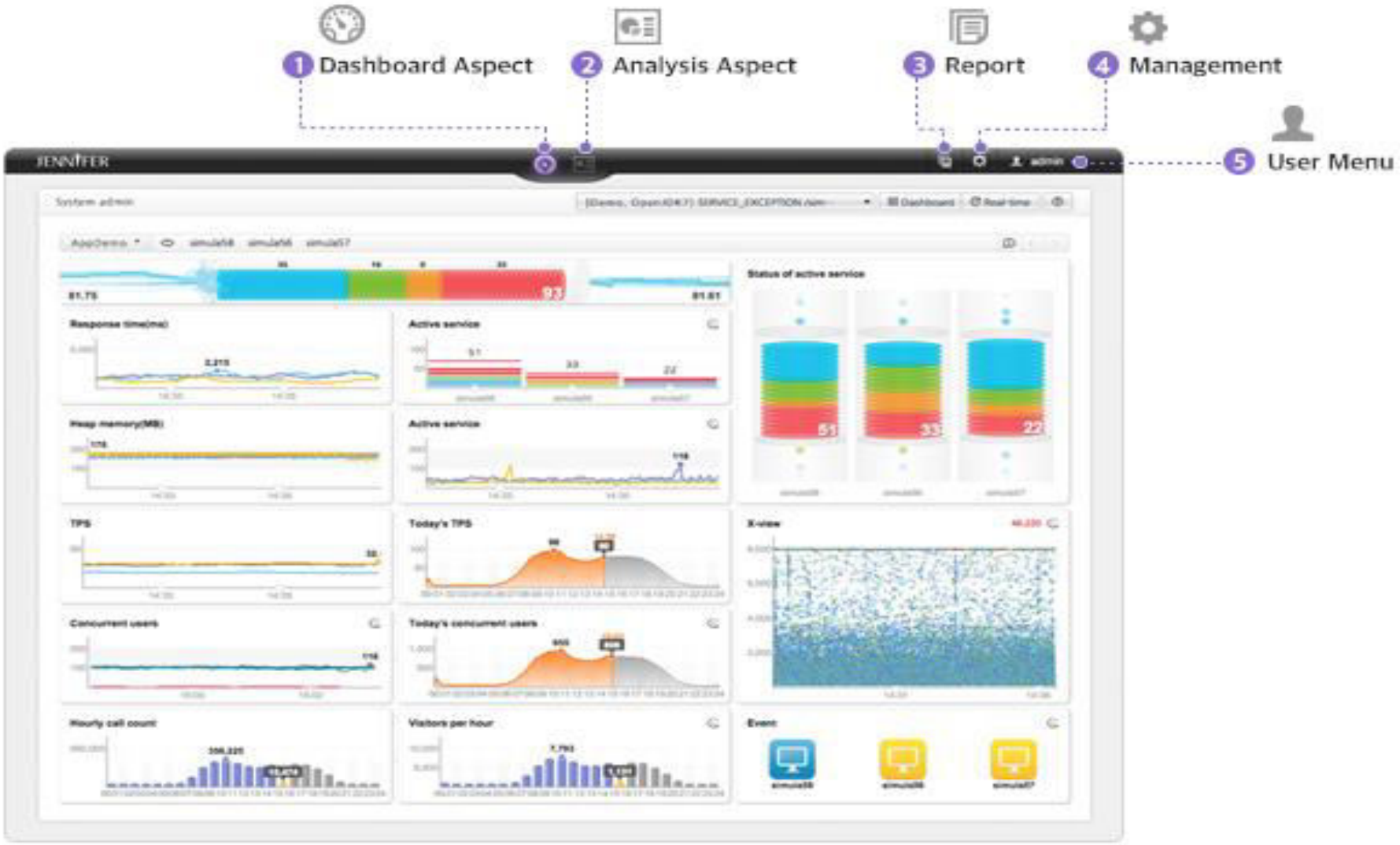
Problem diagnosis and management

- Peak Load Control
- Memory leakage tracing
- Role based Event management
- Application and SQL tuning

CLOUD Support

- Central agent distribution and upgrades
- Auto detection of expanded systems: JENNIFER agent auto detection
- Central agent management and settings

1.8 Dashboard: Role Based Dashboard



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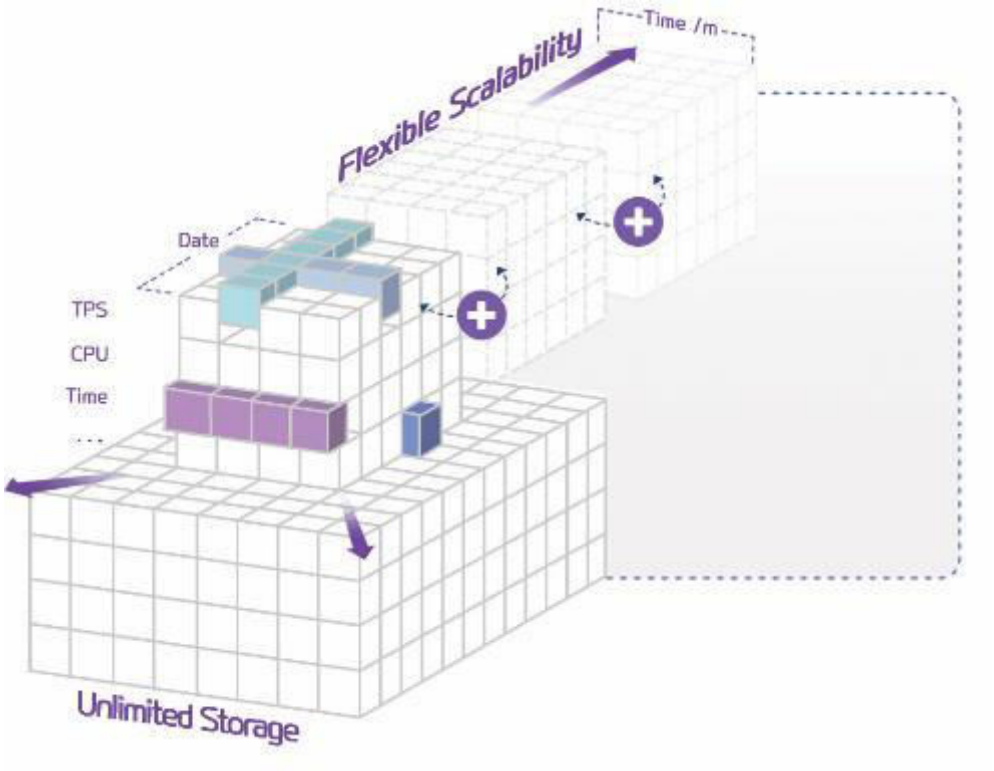
2.1 JENNIFER Repository

JENNIFER V5 exclusive repository called **JENNIFER Storage**, can guarantee unlimited data storage and flexible expandability.

This feature can help users to quickly analyze large amount of performance data and store them for long time. In addition using the '**per second repository processing mechanism**', users can perform high speed inquires about the real time performance metrics in units of second.



2.2 JENNIFER View

Without installing additional applications, users can perform monitoring in all kinds of browsers as long as they support the **HTML5** specifications.

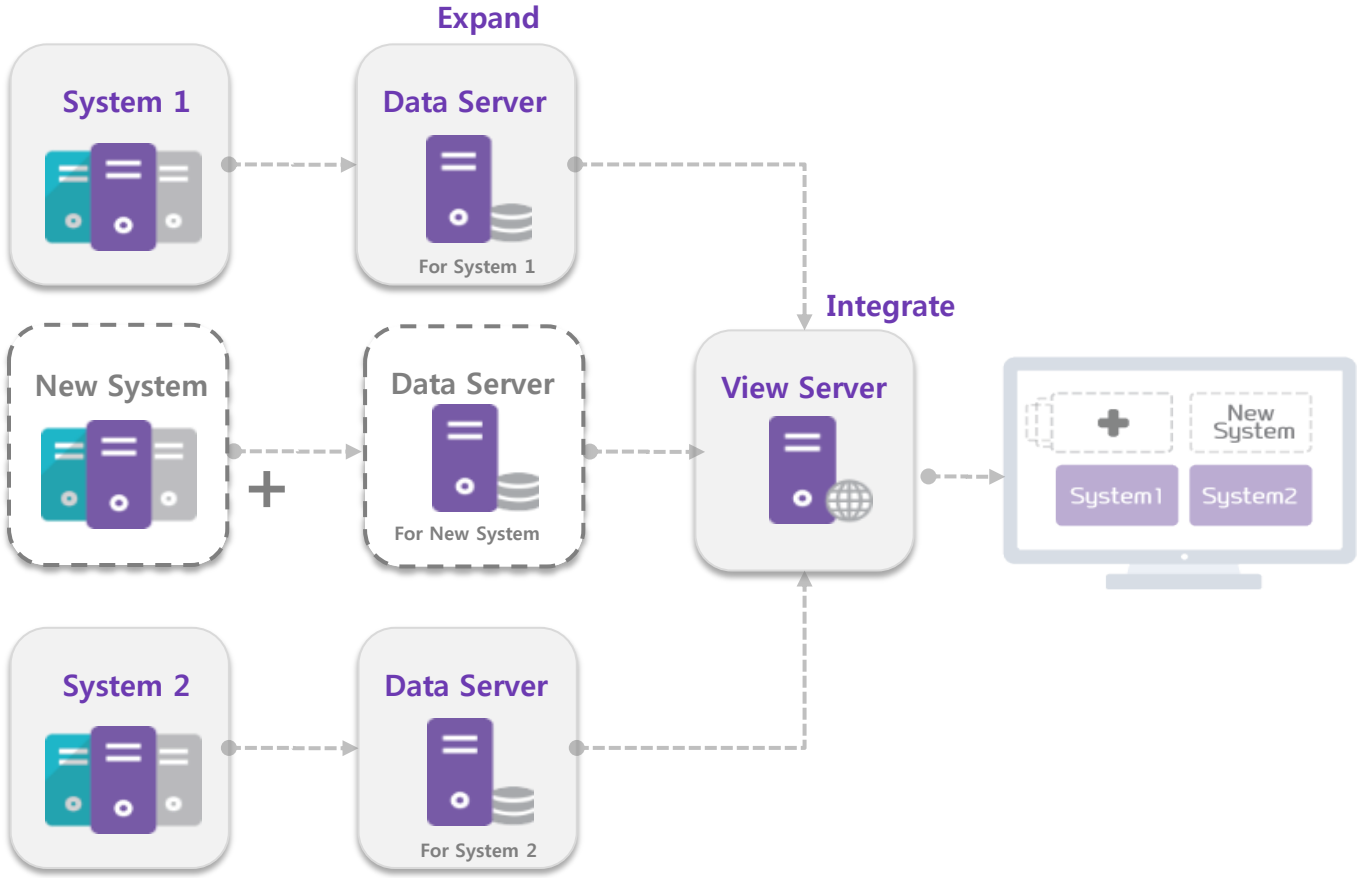
In addition, it supports N-screen that allows users to perform monitoring in all the environments including Smart devices , Mobile and PC.

2.3 Scalable architecture

The most significant change in the architecture of JENNIFER V5 is that the existing 'Agent/Server' structure is divided into the Data Server (Data collection server) and the View Server(Viewing Server).

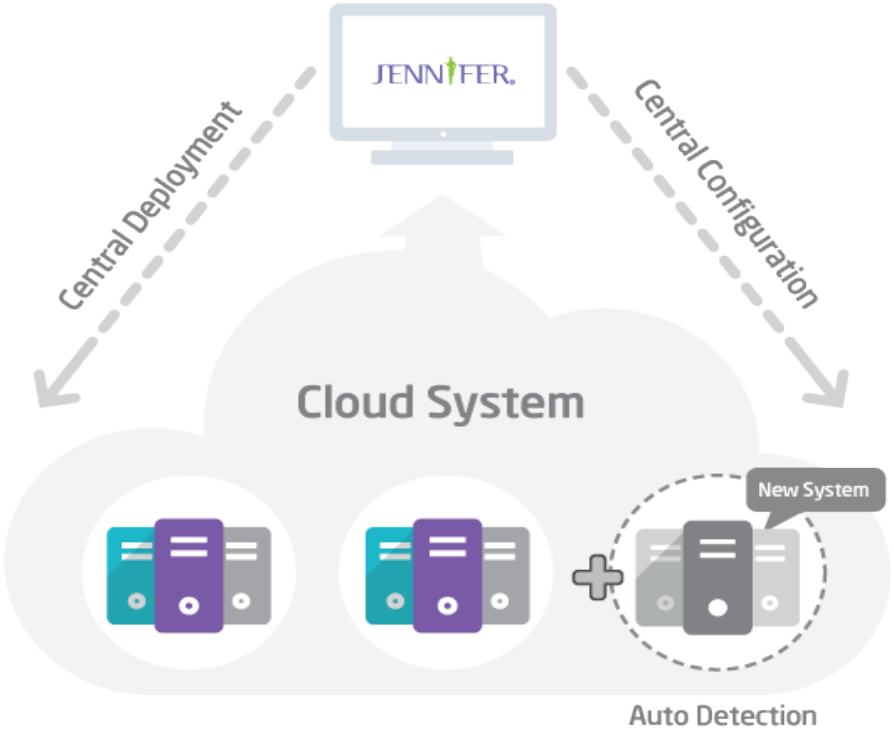
This architecture change allows users to cope with the increasing number of agents from which data should be collected, by expanding the data servers accordingly.

In addition, data collected from different data servers can be all viewed in the single view server.



2.4 Cloud Support

Cloud computing is revolutionizing how IT resources are used and managed. Administrators can now setup or take-down virtual servers in minutes as needed - also the applications that run on them. To really benefit from a cloud environment, the flexibility and convenience that it offers in terms of hardware resourcing has to be matched in the application deployment and performance management space. JENNIFER provides the following three features, which support application performance monitoring in a cloud environment



Key Points

- Automated detection of system expansion
- Integrated agent management (Deployment and Upgrade of JENNIFER agents)
- A dashboard for the service (domain) perspective

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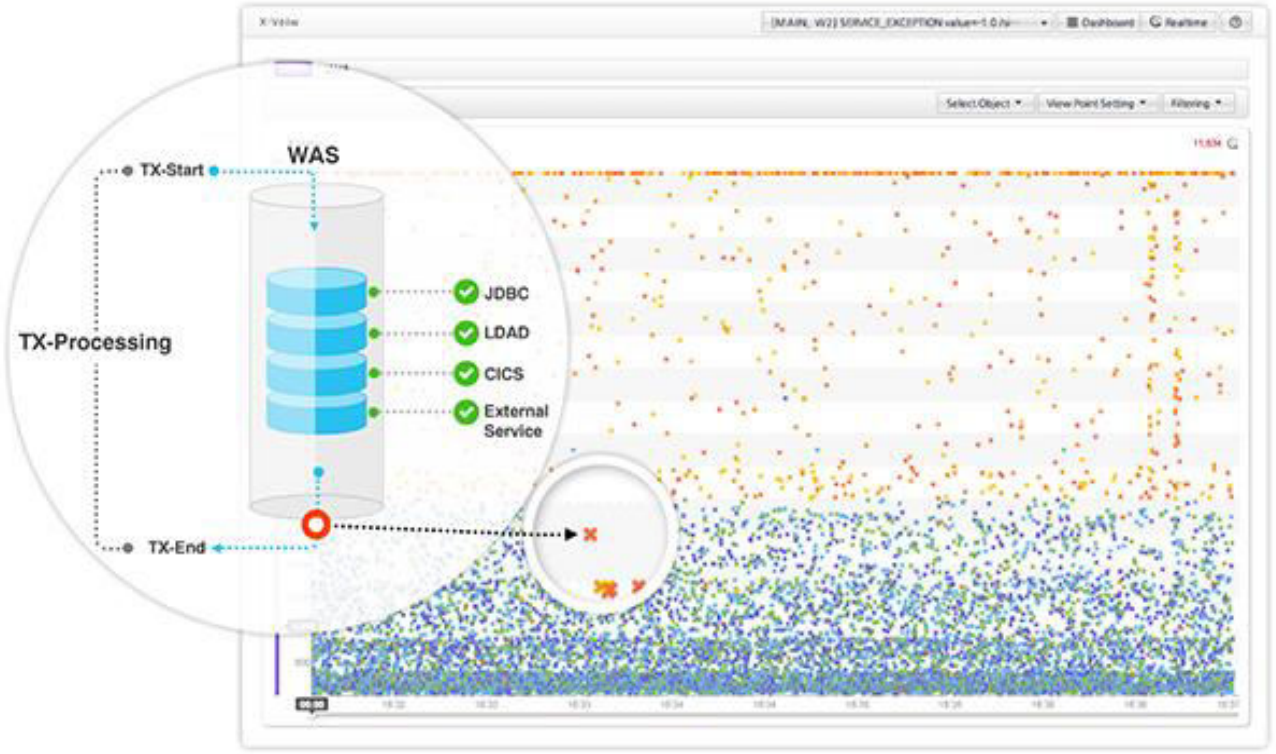
3.1 X-view: Individual Transactions Monitoring

JENNIFER X-view (Response Time distribution Graph) plots the end time of each individual transaction on the X-axis and the response time of the Y-axis. Each point represents a transaction, dragging the mouse around a transaction(s) will show details (profile) of the transaction



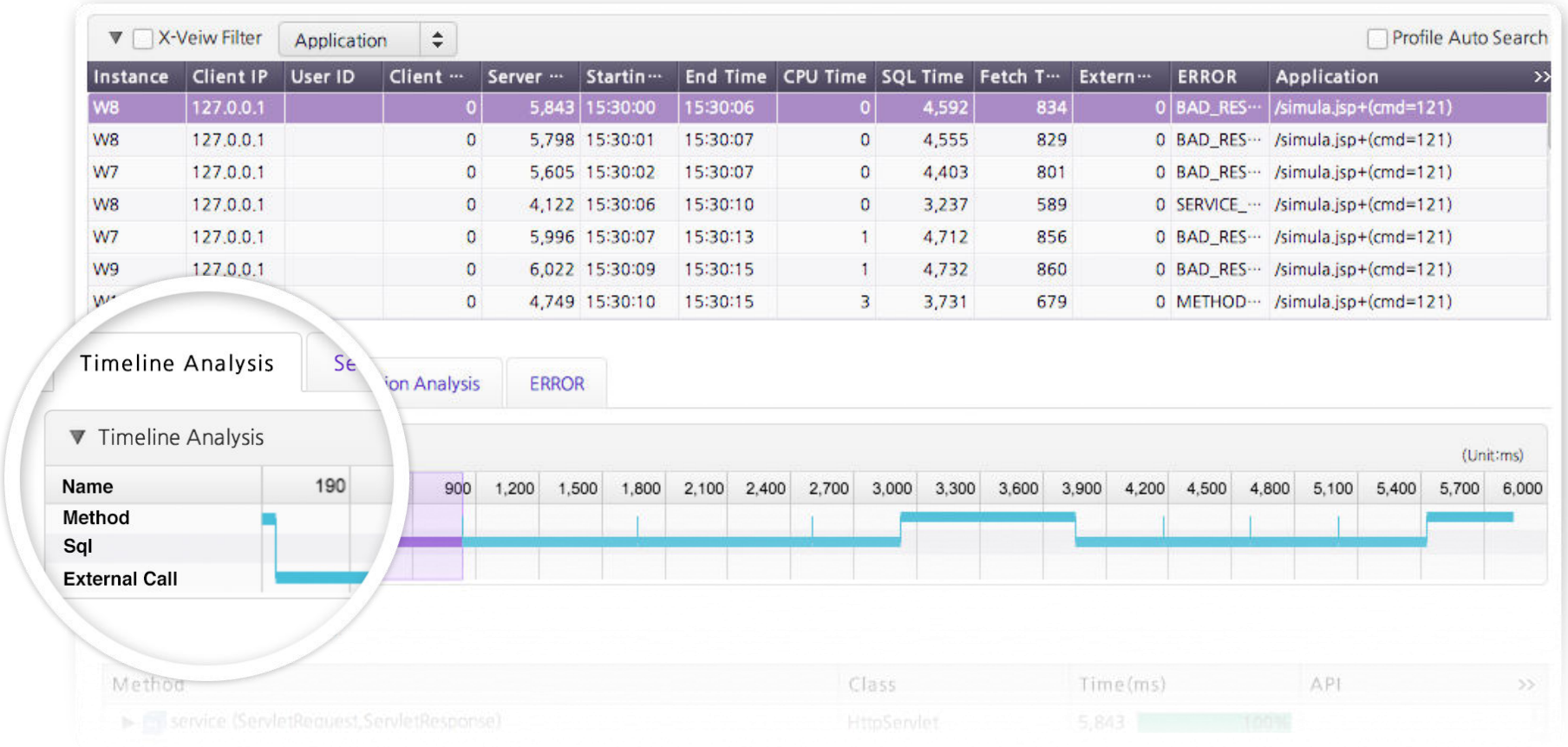
Key Points

- Application name/transaction call basic information.
- JDBC & every SQL query (BIND variable included) tracking.
- File/Socket interconnection tracking
- Provides detailed information by using large scale profiling data processing technique.
- Support user defined class/method profiling
- Tracking arbitrary method and parameters,(return value)

3.4 X-view: Smart Profile

A new addition to JENNIFER V5, Smart Filtering Slider provides an improved way to sort through thousands of codes to get to bottom of any performance problem faster, and more accurately.

By simply manipulating slider within the X-View Profiling screen, JENNIFER user can quickly narrow down the candidate for performance problem and help



3.5 X-view: Smart Profiling

A new addition to JENNIFER V5, X-View Timeline Analysis provides an improved way to sort through thousands of codes to get to bottom of any performance problem faster, and more accurately.

The Timeline Analysis allows even non expert users to get to the bottom of any performance problem faster and more accurately.

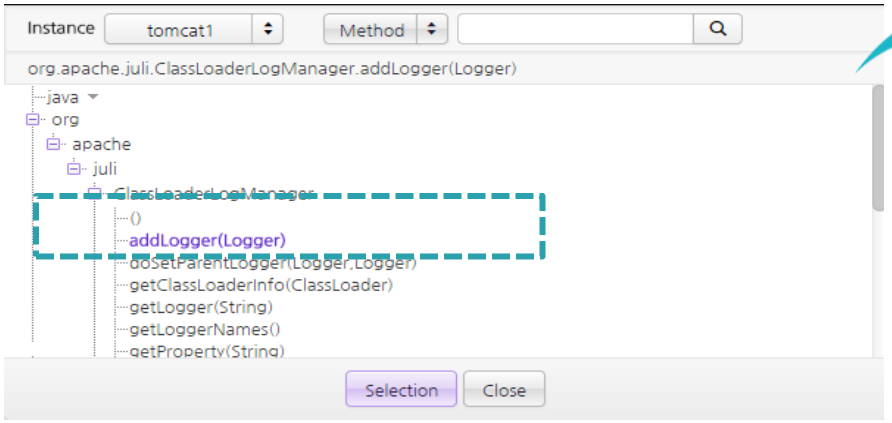
Key Points

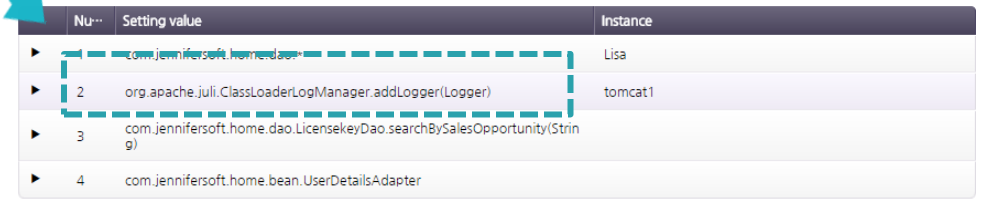
- 5 factors influence application performance:
  - Database Calls
  - File I/O
  - External Services
  - Thread
  - Exception and Errors
- JENNIFER V5 has been designed to provide real-time monitoring for each factor listed above

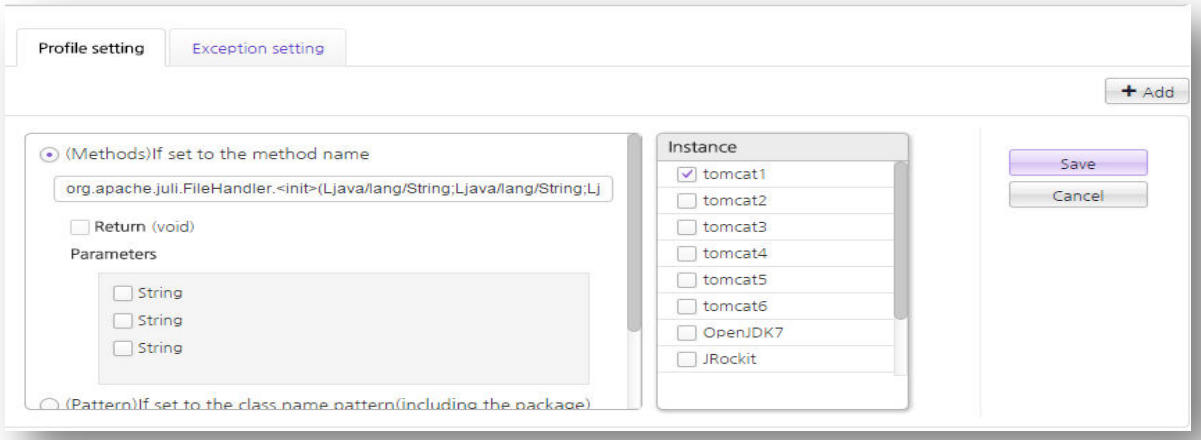
3.6 Dynamic Profile

In order to find cause of performance problem, profiling is used. However, profiling is often causes high overhead, negatively impacting the system performance if applied in wide range.

Jennifer provides Dynamic Profiling feature which allows administrator to increase/decrease the profiling level at rune time without application restart while minimizing the overhead.





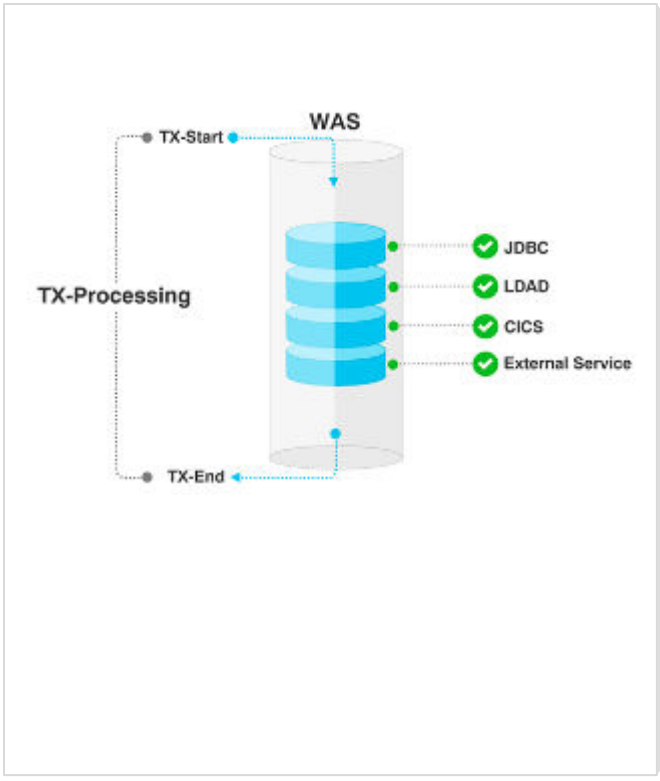


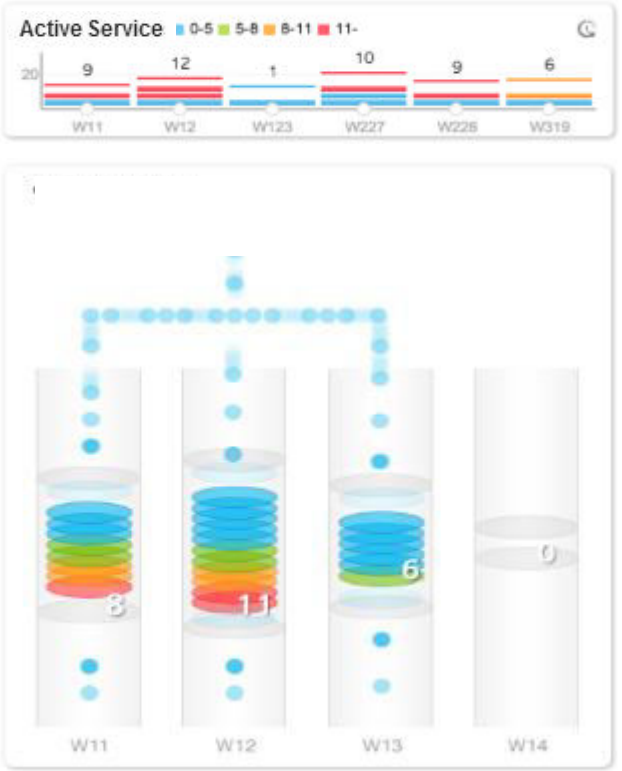
Key Points

- Profile level On/Off during runtime.
- Class/Method Profile level
- Method Parameters and return values
- Regular expression settings
- Package/Class/Method/Interface and super class profile settings.

3.7 Active Services Monitoring

Active services equalizer graph shows current active services count in each application server with different colors to distinguish the elapsed time for the active services.



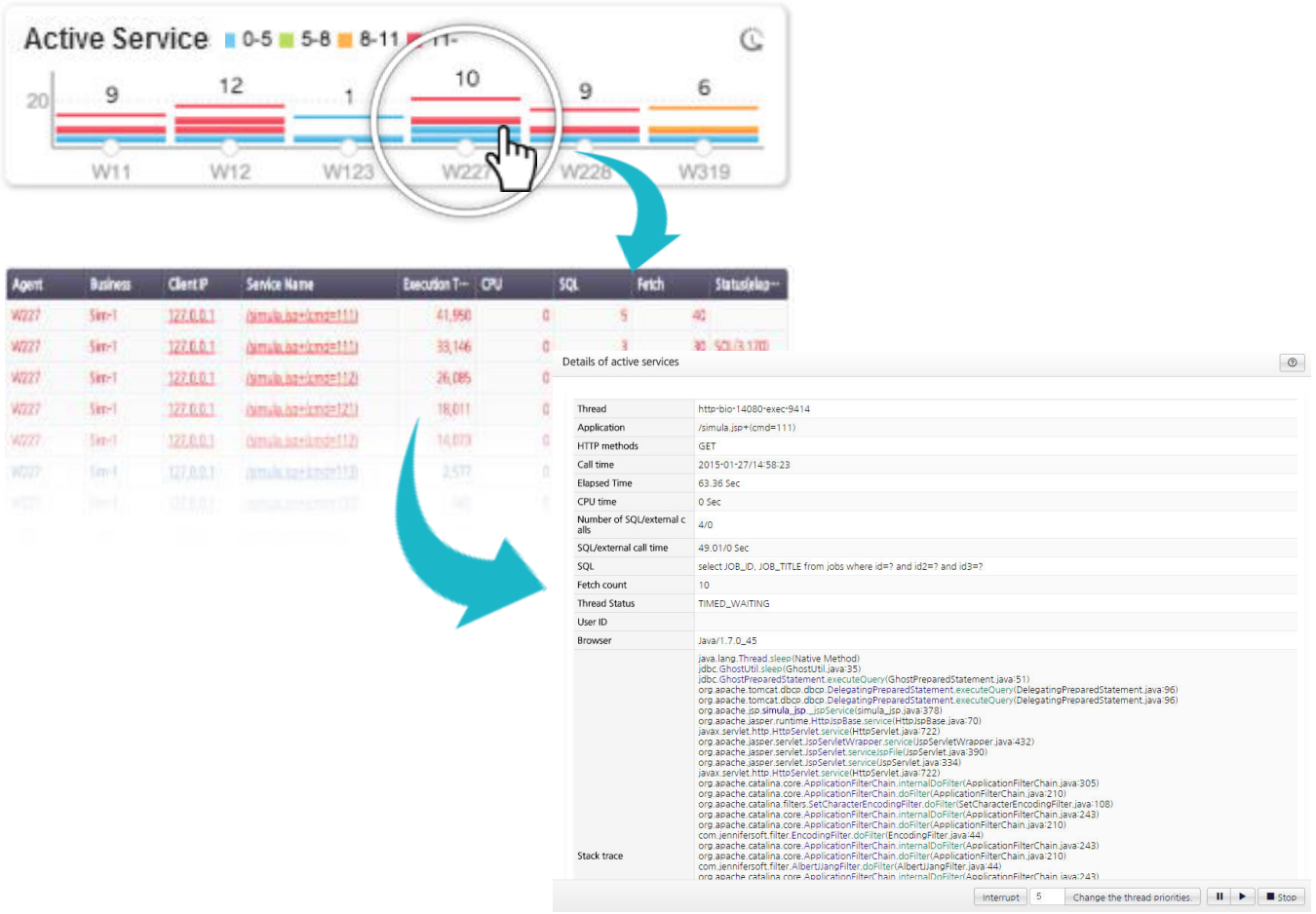


Key Points

- Transactions being processed by the application server are referred to as active service
- Symptoms of performance problems are presented in increase in active services

3.8 Active Services Details

Active service details can be shown by double clicking on the Active Service Equalizer graph. The list includes executed application's information such as Stacktrace (Class/Method level), SQL queries, Client IP, Elapsed Time and CPU processing time.

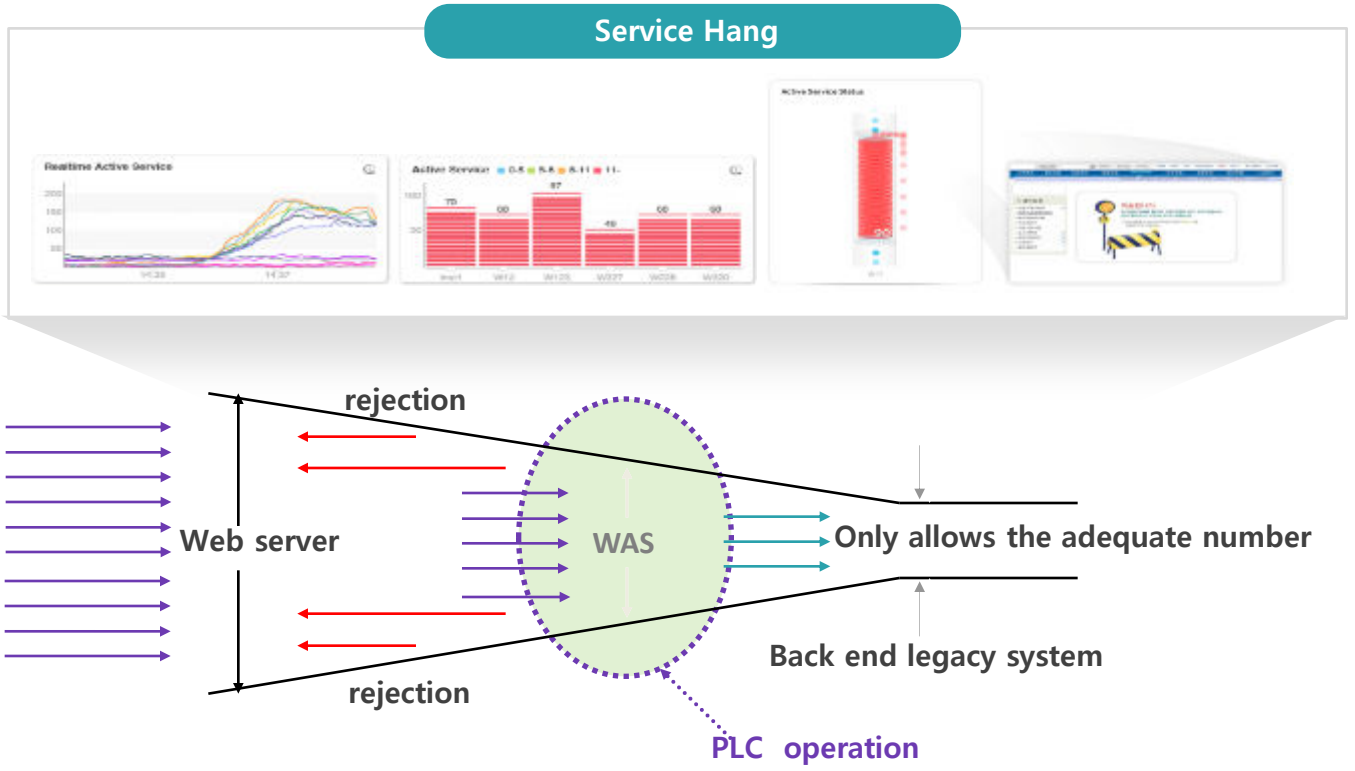


Key Points

- Active Service details in real time
- Service Name
- Last execute query
- Active Stack
- Active Profile
- Client IP
- CPU Time
- Kill pending threads*

3.9 PLC: Load Control during service queuing

JENNIFER's PLC (Peak Load Control) prevent system crashes due to overflow of incoming service requests by redirecting the excess.



Key Points

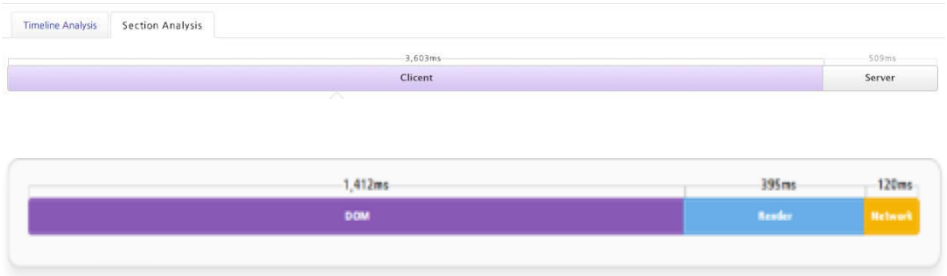
- Helpful during crises
- Only certain amount will be enabled to the application server
- Other services will be redirected
- Help preventing system crash
- Gives system administrator time to find out root cause of the problem.

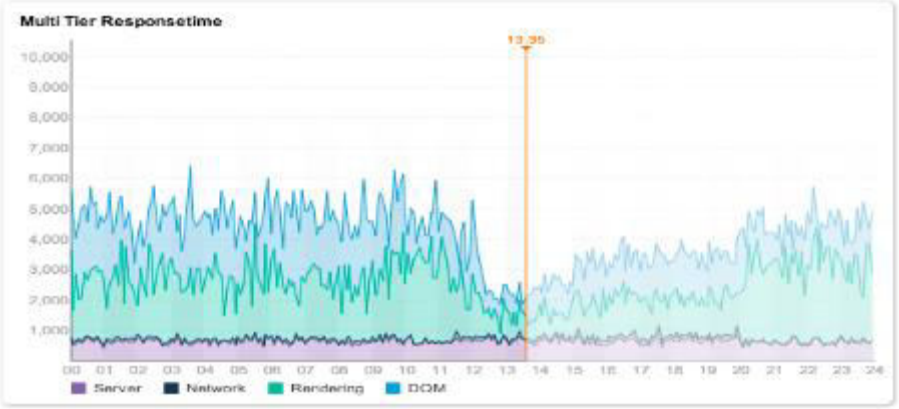
3.10 Real User Monitoring (RUM)

The performance of a web service is no longer measured in terms of hardware and software usage alone. Customer satisfaction is fast becoming a key performance indicator across virtually all industries, and web services are not immune to this movement. Companies are looking to monitor accurately what customers are experiencing when they use the services, so that they can make improvements to the process and achieve higher levels of customer satisfaction. To answer this need, JENNIFER now offers a Real User monitoring (RUM) feature. JENNIFER measures transaction response time from browser to server, providing a detailed analysis of the application's performance as it traces a user activity path employing the web service.

3.11 RUM Profile

The section analysis timeline bar in X-View shows the transaction's at the client side and the server side. Using the section analysis you can easily determine whether the response delay is at the server site or the client site.



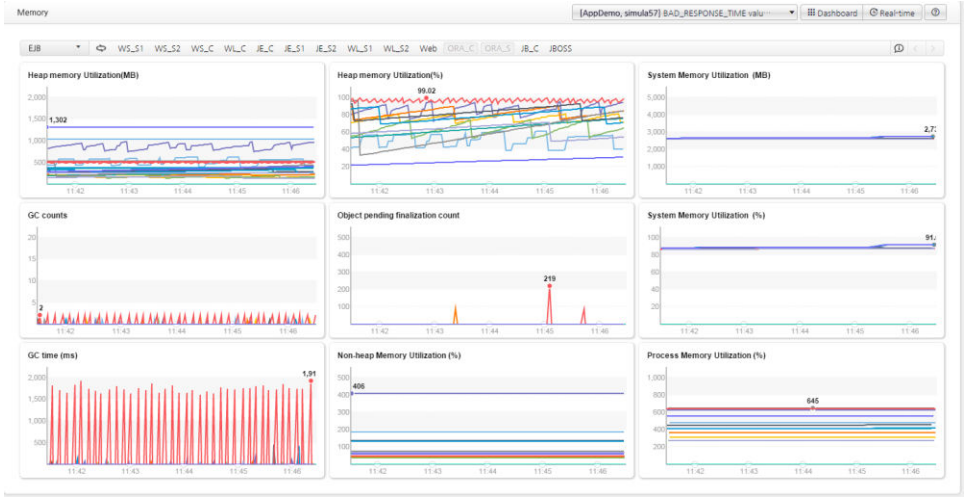


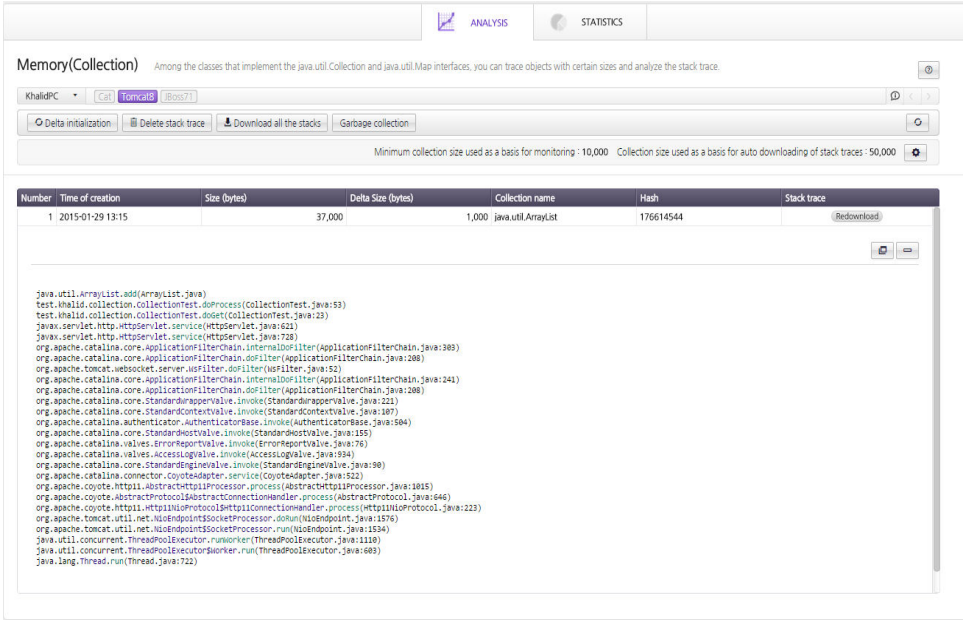
- **DOM:** Indicates the amount of time the browser takes to generate DOM structure.
- **Render:** How long does it take the browser to display the page.
- **Network:** The time taken on the network.

Multi Tier Response time shows application response time in different segments. Using the Multi Tier response time graph you can see how long does the application takes at the Server Side, Network area, Page Rendering and DOM processing.

3.16 Memory Leakage

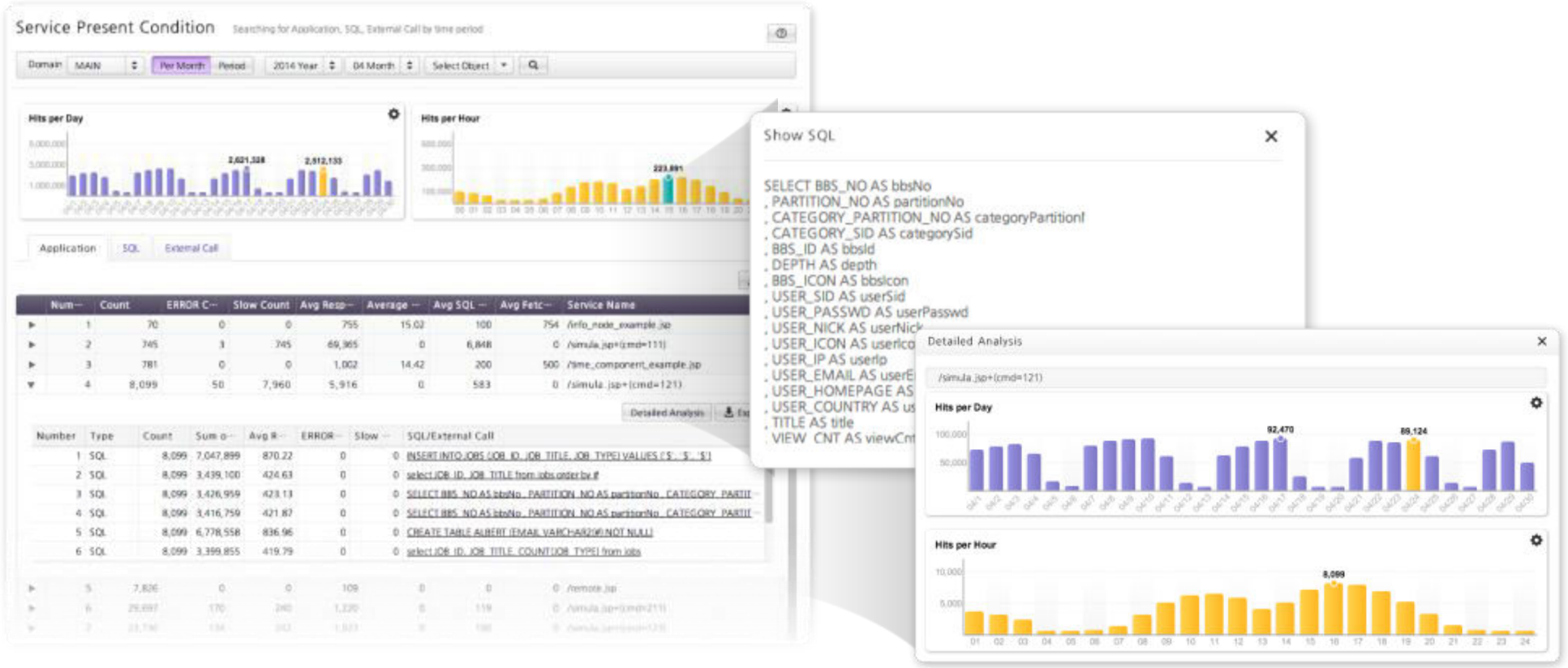
If your memory usage increases consistently, Java Collection objects (Vector, Hash, etc) may be one of major causes of memory leak. Generally, the process of monitoring the memory usage of Java object cause serious performance problem but Jennifer effectively traces the number of Collection objects without heavy load. Moreover, Jennifer provides application name and StackTrace data which is used in the object and Full Stack data. Thus, user can find out root cause of memory leak effectively.





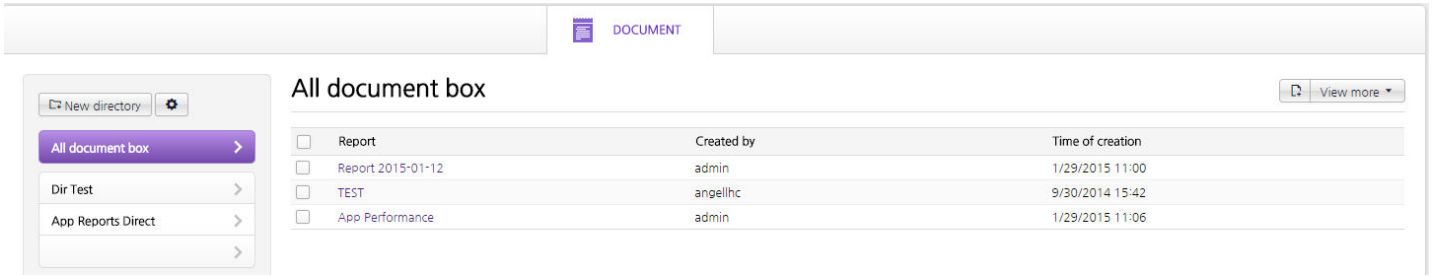
3.17 Application and SQL Tuning

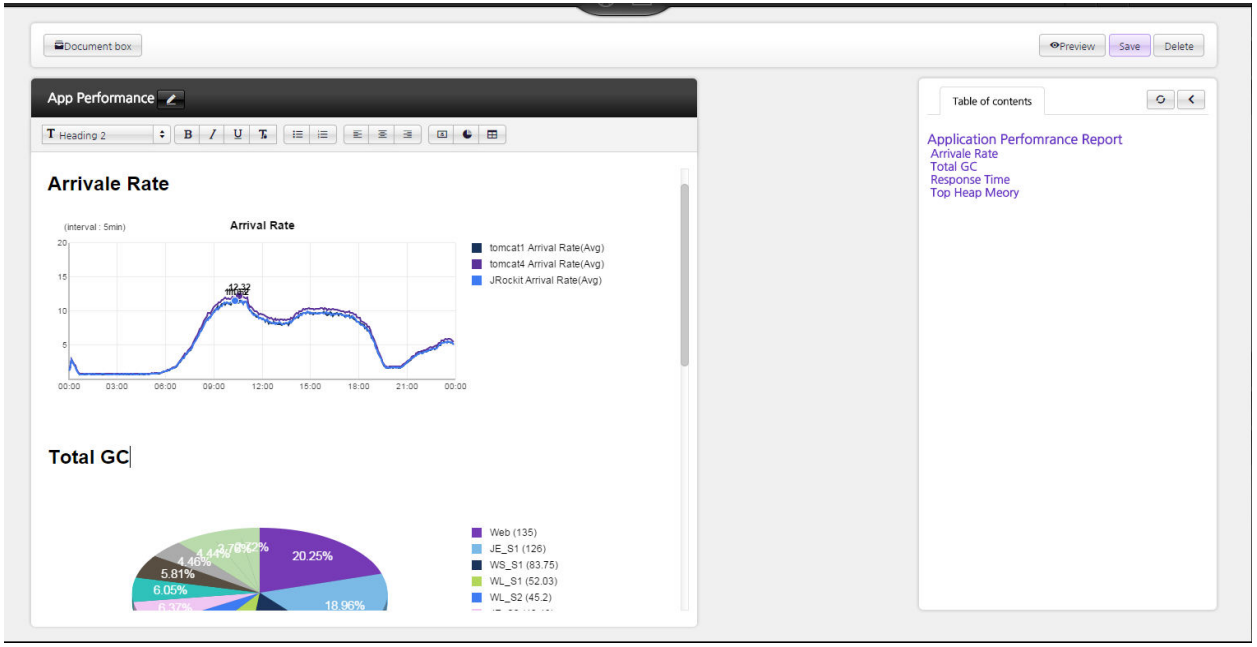
Jennifer can be used for tuning your application or SQL queries. By examining application CPU usage and response time per Class/Method, Jennifer can identify which module is experiencing performance problems. Comparative analysis of SQL Query execution time and total application elapsed time can be used in query tuning and identify bottle-neck issues. Jennifer is also capable of tracing communication between WAS and back-end systems (CICS, TUXEDO, WTC/Jolt, Mainframe CICS/CTG module) thus providing Min/Max response time, Request load, and other statistic data for all active transaction.



3.19 Report

JENNIFER Provides a customizable WYSIWYG report.



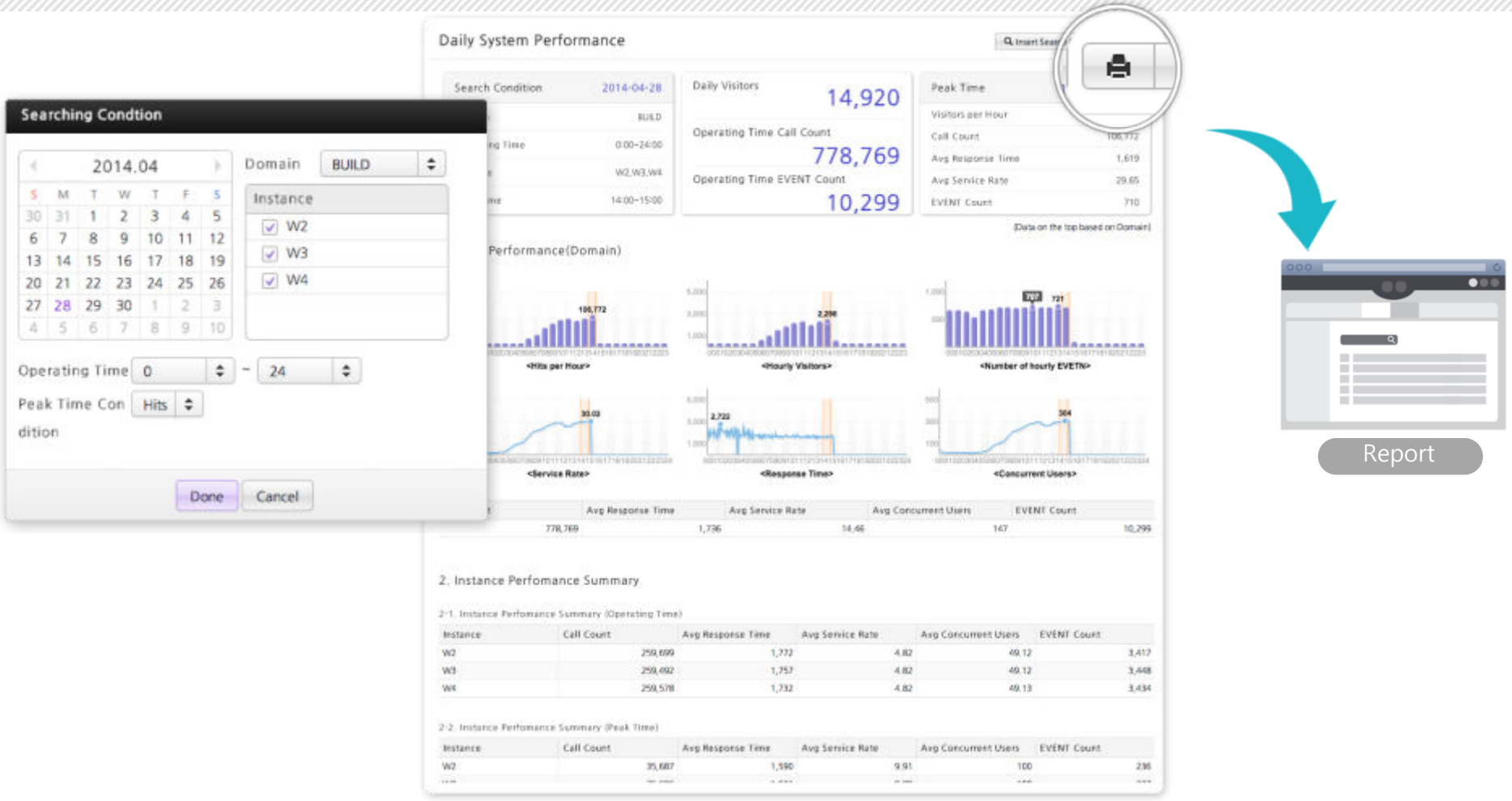


Key Points

- WYSIWYG repot generator
- Easy to use, similar to word editor
- Store report in directory structure
- Export to PDF

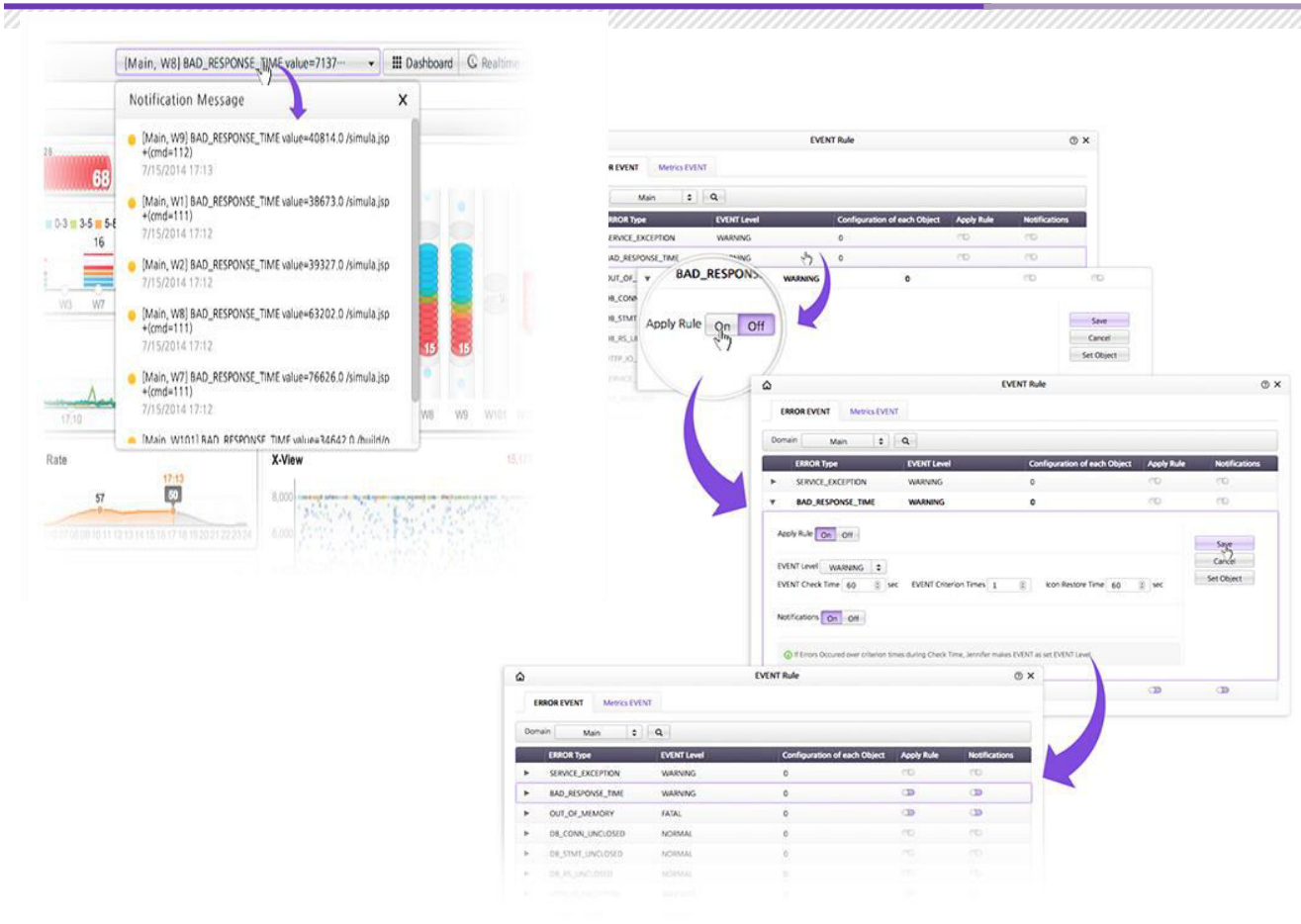
3.20 Statistical Analysis

Jennifer provides a statistical analysis for analyzing a wide range of performance data of the system and business perspective at a glance. Through this service you can analyze the number of occurrences of EVENT for each instance and business groups. You can also output the analysis screen.



3.22 Alerts and Events

JENNIFER is shipped with more than 50 alerts and error types which covers most of errors that might occur in the application. JENNIFER 5 introduces Events rule and smart alerts functions. System users can configure alert trigger interval and settings. Furthermore, they can also define a custom rule to be triggered for a specific error or exception.

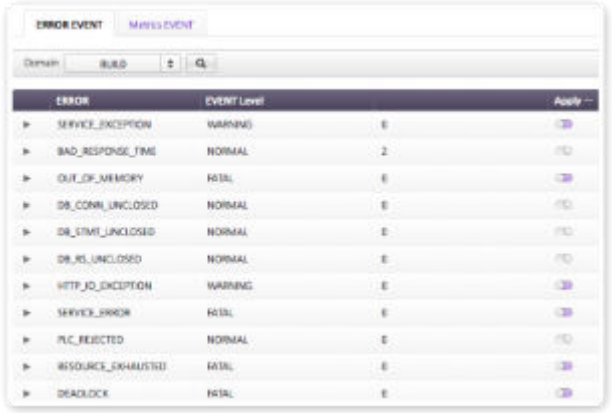


Key Points

- Predefined Alerts
- Smart Alert
- Event Rules Managements
- Notifications to system manager

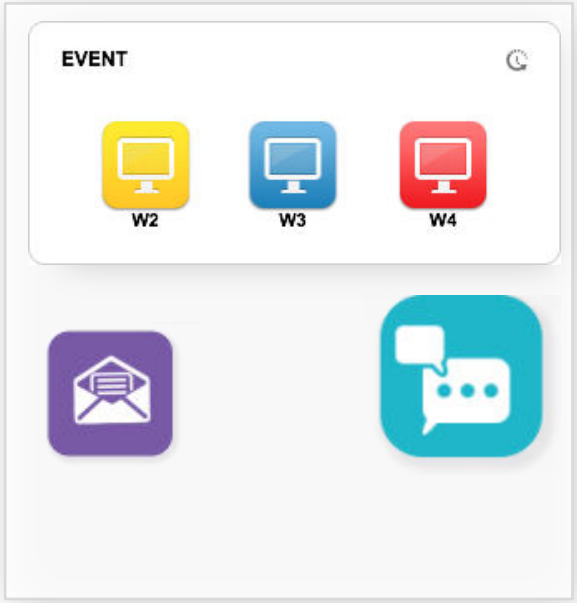
3.23 Event Based Monitoring

JENNIFER 5 introduces an event based dashboard. System administrators can now monitor individual instances as well as business group based on event status



Rule Settings

Event Occurrence

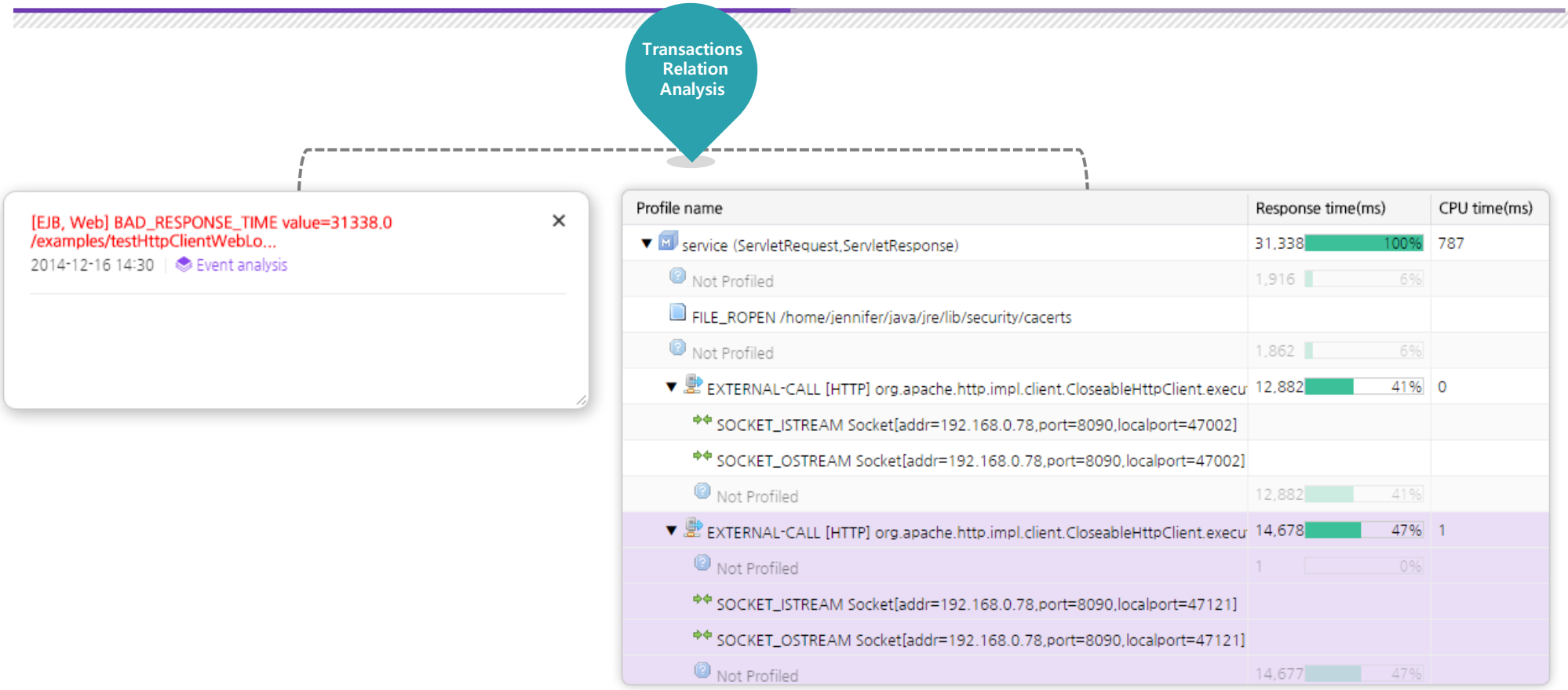


Key Points

- Event Based Dashboard
- User Defined Rules.
- Notifications
- Smart Alert
- Color coded and Icons
- Event Lists pop up
- Instance and Business Group Monitoring

3.24 Event Based Monitoring: Event Analysis

Linkage or Related analysis is provided in JENNIFER 5. When an event originating from an ERROR, a pop-up windows is displayed that enables analysis of the transaction in matter in the X-View



Summary

Key Features

- True Real Time & Insight.
- Monitoring every single transactions (X-View)
- Active Service Monitoring
- Real-Time Topology View
- Real-Time User Monitoring
- Cloud Support

Distinct Features

- Profile On/OFF Settings
- Dynamic Stack-trace
- Integrating monitoring for multiple domains.
- Monitoring functionality expansion visa API and Adapters

Q & A

THANK YOU