

## Solution Offering



### Infosys RADIEN CASPER

Capacity Assessment and Performance Engineering Framework (CASPER)

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Enterprises recognize the importance of performance as a key contributor to the success of any application, but continue to suffer high costs with software projects performing poorly and failing at the threshold of deployment. Studies have revealed that the primary reason for these failures can be traced back to shortcomings in the way applications are developed and maintained once they are rolled into production.

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### Pre-Deployment (Application Development)

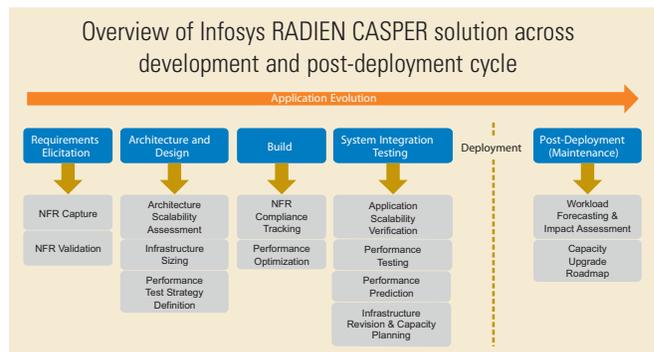
- Incomplete and/or ambiguously stated Non-Functional Requirements (NFRs)
- Scalability issues with the application or with the architecture itself
- Inappropriately identified performance test scenarios
- Performance testing not performed correctly

### Post Deployment

- Inappropriately sized infrastructure
- No way to track application workload and correlate its impact on the underlying infrastructure

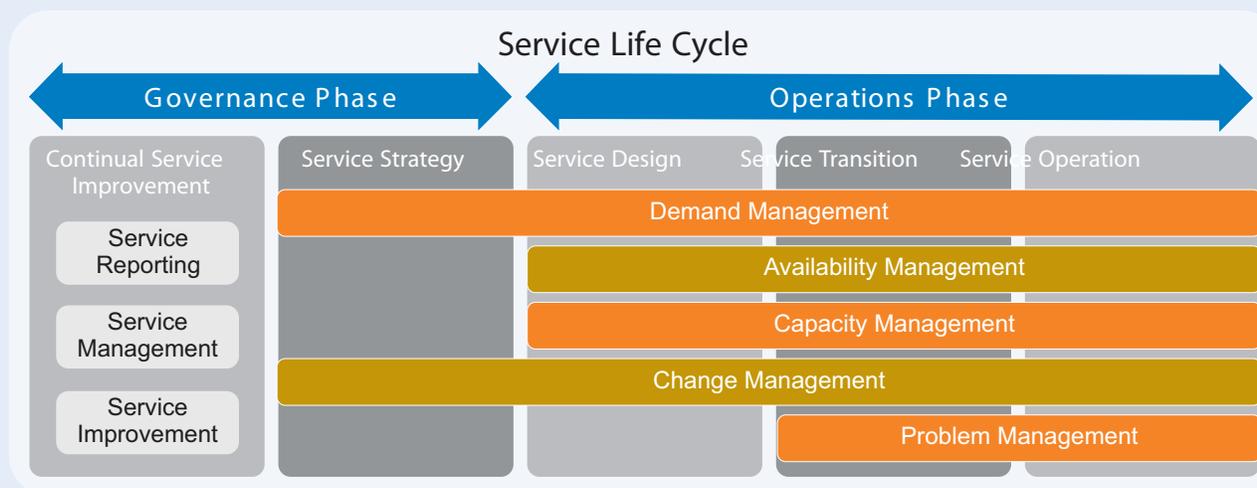
## Infosys RADIEN CASPER

Infosys RADIEN CASPER addresses performance problems by proposing a comprehensive framework for engineering and managing application performance during the evolution to post-deployment phases. It consists of powerful tools for work load modelling, predictive simulation, performance monitoring, and forecasting. Moreover, it supports processes from industry best-practices defined by ITIL and COBIT. It has been proven and time-tested in large spectrum of engagements.



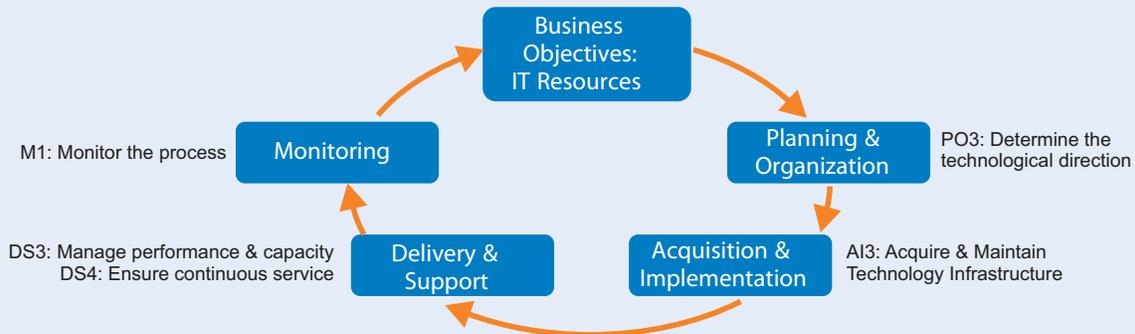
## ITIL and Infosys RADIEN CASPER

Infosys RADIEN CASPER can best support the following ITIL (Information Technology Infrastructure Library) process. ITIL is the framework of best practice guidance for IT Service Management. For more information about ITIL, please refer to: <http://www.itil-officialsite.com>

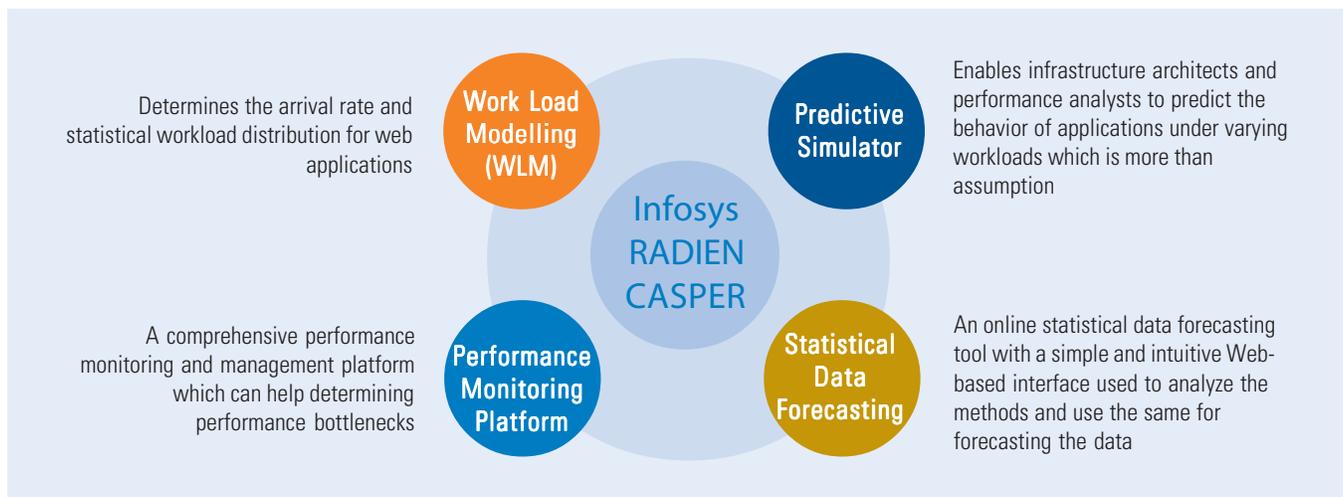


## COBIT and Infosys RADIEN CASPER

Infosys RADIEN CASPER help in the following process defined in COBIT (Control Objectives for Information and related Technology). COBIT is the best practice framework for IT Management/ Governance which emphasizes the need for IT to deliver information that enterprises need to achieve their objectives. For more information about COBIT, please refer to: <http://www.isaca.org/cobit>



## Infosys RADIEN CASPER Tools



## Benefits

Accurate assessment of application scalability and the identification of performance bottlenecks are the most important areas of performance engineering that require extensive domain expertise. The Infosys RADIEN CASPER tools and methodologies help application architects design systems that are tailored to the special requirements of each client. It facilitates:

- The development of applications that meet the stated performance requirements of the end user
- Accurate infrastructure sizing leading to an increase in the ROI
- Faster time-to-market through reduced cycle time in application development
- Reduced time-to-diagnose of performance bottlenecks leading to lower downtimes
- Scalable execution model for deploying performance engineering best practices into software projects

## Infosys RADIEN CASPER: Work Load Modelling tool

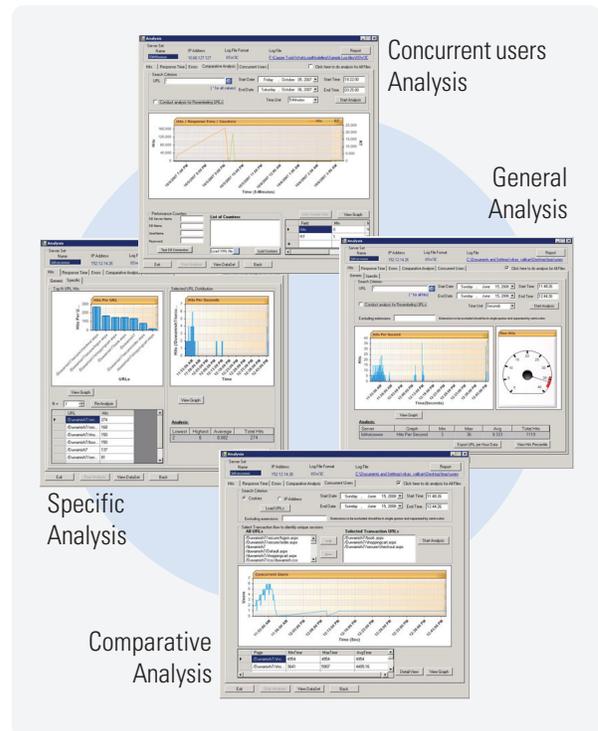
Work Load Modelling (WLM) is a tool that determines the arrival rates and statistical workload distribution for web applications. It sieves through the Web Server logs to analyze the hits, response times, errors per page and concurrent users per transaction in a given period of time. It also provides a comparative analysis between hits and response time in a given time interval.

### Features

- Extract useful information to support analysis about application performance in Web Server logs
- Generic and specific analysis of the key factors that influence the performance of the web applications
- Comparative analysis with monitored performance data, to track the exact performance problem area in the web application
- Provide top-N analyzed results in colorful graphs

### Benefits

- Reduce IT spend by faster and accurate identification of problem areas in web applications
- Authentic data analysis report from direct use of web server logs
- Optimize capacity through improved web applications' performance and resource planning



## ITIL Capacity Management Support

ITIL (Information Technology Infrastructure Library) is the framework of best practice guidance for IT Service Management. It requires a number of operational capacity management activities that must be performed on a regular ongoing basis as part of service operation which include the 8 items listed below.

1. Capacity and performance monitoring
2. Handling capacity- or performance-related incidents
3. Capacity and performance trends
4. Storage of capacity management data
5. Demand management
6. Workload management
7. Modeling and applications sizing
8. Capacity planning

Infosys RADIEN CASPER: Work Load Modelling tool can —

- Monitor the following components and elements: Web application error, Transaction response time, Internet page hits, Internet response time, and number of application concurrent users.
- Identify the capacity and performance trends as they become discernible
- Capacity management data are stored in web server logs
- Handle incidents by a comparative analysis with the monitored performance data to facilitate in drilling down to the extract performance problem area in the application
- Manage demands by the top-N results from the web server logs
- Modeling the applications sizing to specify the problem areas in the application
- Making capacity plan which will cover current performance details with recent trends for all components and elements, and report specific difficulties encountered in the past period.

## Infosys RADIEN CASPER: Predictive Simulator

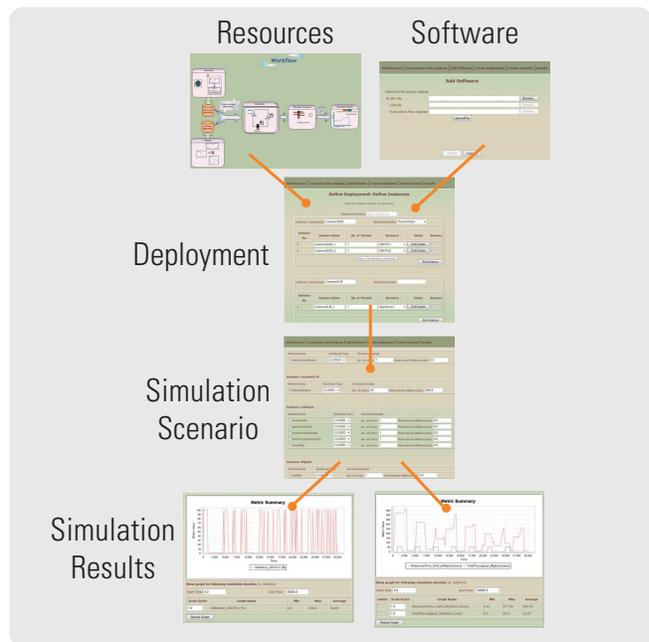
Predictive Simulator tool enables infrastructure architects and performance analysts to predict the behavior of applications under varying workloads and different configurations. The tool can predict performance of computer systems under varying load conditions and changing hardware configuration or deployment environments. It can be used in two phases of application evolution: requirement elicitation and system integration testing.

### Features

- Create models of software components using standard UML diagrams
- Create hardware resources to simulate real hardware like disk and processor
- Create deployment for mapping between software and hardware
- Create different deployment scenarios for a comprehensive 'what-if' analysis in a plug-n-play environment
- Generate comprehensive graphical report of the simulation, for analysis like: hardware level utilization, software level throughput and response time.

### Benefits

- Create virtual software and hardware, based on real data even before development
- Empower architects to carry out what-if analysis of their application behavior under varying workload conditions
- Enable IT managers to proactively predict capacity outages and provisioning for IT resources well in time
- Reduce production cost by predicting the resources.



## ITIL Capacity Management Support

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Infosys RADIEN CASPER: Predictive Simulator can	
• Demand management	• Modify demand for a particular resource or service accordingly
• Workload management	• Manage workload by optimization of infrastructure resources to maintain of improved performance of throughput
• Modeling and applications sizing	• Modeling and application sizing to predict performance
• Capacity planning	• Make capacity plan according to modeling report
• Capacity and performance trends	• Identify capacity and performance trends as they become discernible
• Storage of capacity management data	• Valuable capacity management data can be stored in the output reports for further use
• Capacity and performance monitoring	• Identify the cause and find out resolution for the performance related incidents
• Handling performance-related incidents	

# Infosys RADIEN CASPER: Performance Monitoring Platform

Performance Monitoring Platform is a comprehensive performance monitoring and management platform which can help in determining performance bottlenecks. It automates the task of collecting relevant system and application level metrics needed to analyze the performance of application based systems.

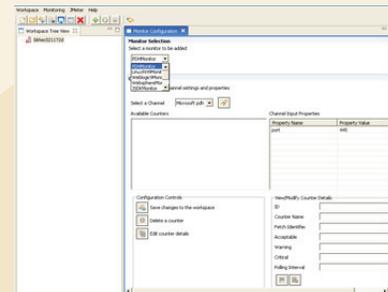
## Features

- Monitor performance statistics in real-time
- Monitor performance metrics across heterogeneous operating platforms (Windows, Linux, Solaris, etc.)
- Monitor performance metrics across all levels of the technology stack (infrastructure, OS, middleware & application)
- Uses protocol based monitoring (SNMP, RMI, JDBC, HTTP, and TCP) that makes it highly extensible architecture.

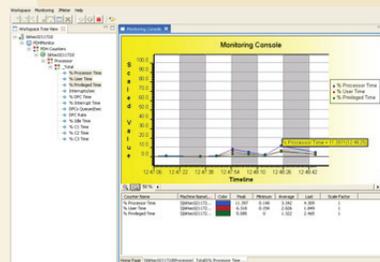
## Benefits

- Reduces the time taken by performance analysts and system administrators in arriving at the root cause of a performance problem
- Automates the collection of performance data from heterogeneous environments
- Consolidates data from multiple platforms, middleware components and applications into a single convenient view
- Seamlessly “plugged in” to infuse monitoring into the feature set of existing applications
- Key operations, such as starting and stopping the server, controlling monitoring or modifying the monitoring agenda, can be invoked seamlessly from within applications through these APIs
- The server component can be separated and embedded into any other application without any loss of functionality.

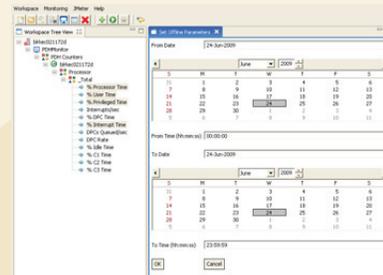
Add/ Select monitor



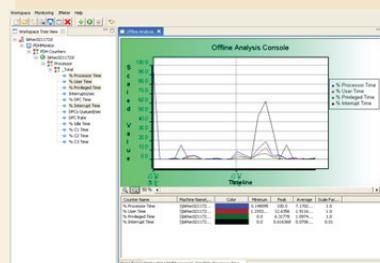
Real-time reports



Offline Analysis



Offline Analysis console



# Infosys RADIEN CASPER: Statistical Data Forecasting

Statistical Data Forecasting is an online workload forecasting tool with a simple and intuitive interface for analyzing future workload using various statistical models. It provides forecasting options for both a novice and an expert. It provides rich graphical reporting for comparisons of results from different methods.

## Features and Benefits

- Simple and attractive Web-based interface
- Provides forecasting options for both a novice (Automatic Forecasting) and an expert (User Specified) users
- Provides a best ARIMA and other models
- Provides various options for the user to input the model parameters which will help him analyze it better
- Provides the forecasted values and graphs for online analysis
- Provides an option for generating a report for offline analysis
- Analyze different forecasting methods and their results
- Perform both online and offline analysis
- Workload trends analysis and forecasting

The image displays three screenshots of the Infosys RADIEN CASPER web interface. The top screenshot shows the 'Automatic/ User Specified' selection screen with fields for 'Upload Input File?', 'Date Start', 'Date End', and 'Number of Forecasts'. The middle screenshot shows the 'Model configuration' screen with options for 'Forecast Type', 'Automatic Model Specification', and 'Number of Forecasts'. The bottom screenshot shows a 'Graph and forecasted values' screen with a line graph titled 'Hits per Month' and a table of forecasted values.

Time	Value
15-March-2008	3296
16-March-2008	3290
17-March-2008	3284

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## About Infosys

Many of the world's most successful organizations rely on Infosys to deliver measurable business value. Infosys provides business consulting, technology, engineering and outsourcing services to help clients in over 30 countries build tomorrow's enterprise.

For more information about Infosys (NASDAQ:INFY), visit [www.infosys.com](http://www.infosys.com).