



TEAMQUEST PREDICTOR®

Advanced automated predictive analytics and capacity planning

- ✓ Business/financial decision support
- ✓ Optimized usage of resources
- ✓ Problem avoidance
- ✓ Root cause prediction

Benefits

TeamQuest Predictor helps optimize IT by delivering advanced predictive analytics in two ways: Traditional Capacity Planning - predicting optimal IT configurations for the future and Automated Predictive Analytics - continuously predicting future application health.

Automated Predictive Analytics

- TeamQuest Predictor's automated predictive capability saves you time. It's called "TeamQuest Risk Prediction" and it runs *automatically*.
- Notifies you well in advance of problems, delivering the information you need to avoid and prevent bottlenecks.
- Tells you where to focus your money and attention, and when, to keep applications running smoothly.
- Regularly analyzes hundreds of applications and thousands of servers in your datacenter.
- Works in highly dynamic virtualized environments.
- Provides advanced analytics for comprehensive application, service and system health monitoring.

Traditional Capacity Planning

- Helps you find cost-effective configurations that maximize business productivity.
- Allows you to accurately provision systems to avoid costly and time-consuming performance bottlenecks.
- Finds optimal configurations for new application rollouts, by ensuring production systems will handle new workloads at minimal cost.
- Provides unbiased, vendor-neutral guidance, showing what you really need as opposed to what your vendor says you need.
- Reduces or eliminates over-provisioning, by identifying the least expensive way to accommodate service level requirements.
- Aids virtualization & server consolidation decisions, helping find the most cost-effective combination and configuration of resources.

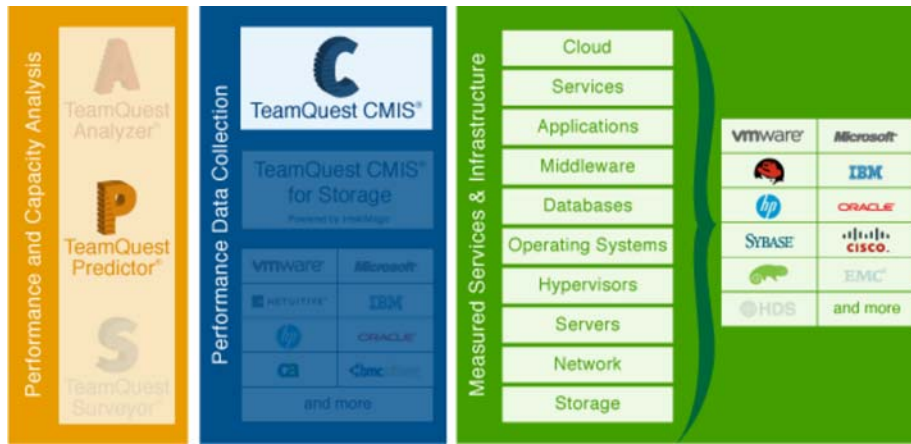
How it works

TeamQuest Predictor takes the rocket science out of predictive analytics, putting the speed and accuracy of a powerful analytic queuing network solver into the hands of everyday systems administrators and capacity managers.

TeamQuest Predictor can be used either for Traditional Capacity Planning, or as a predictive monitoring and analysis tool via its **Automated Capacity Analytics** capabilities.

Traditional Capacity Planning

When used for traditional capacity planning, the tool uses baseline measurements and configuration information from the distributed TeamQuest CMIS to calculate an accurate starting-point or "baseline" analytic model. The results of that baseline model can oftentimes reveal problems with existing configurations, showing which infrastructure components are responsible for the largest portion of response time.

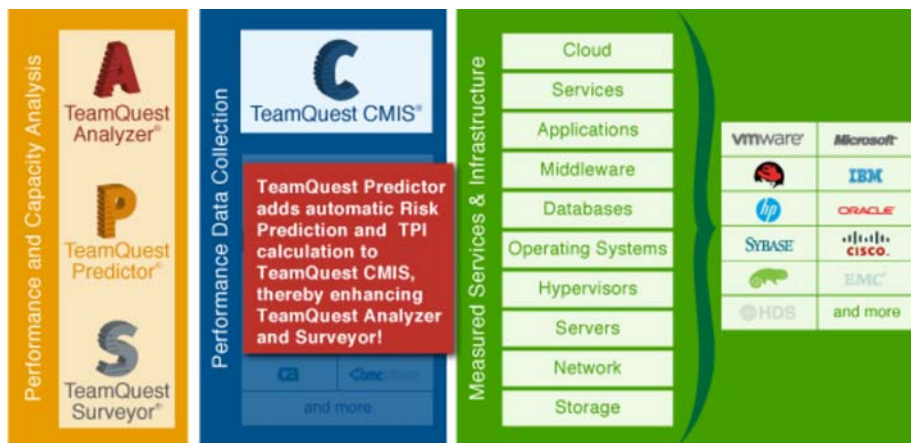


TeamQuest Predictor Architecture Diagram

After a baseline model has been calculated, the user can make changes to the hardware/software configuration being modeled and TeamQuest Predictor will reveal how the changes will affect performance. TeamQuest Predictor can also determine how applications will perform if workloads increase, even helping to identify which infrastructure components will become bottlenecked first, and when.

Automated Capacity Analytics

TeamQuest Predictor can provide a automated version of the predictive technology that drives it's powerful capacity planning tool. To provide this automation TeamQuest Predictor uses TeamQuest CMIS to calculate predictions on the fly. You get near real-time calculations of service health, see [TeamQuest Performance Indicator](#). You can even get predictions of future service health, see [TeamQuest Risk Prediction](#).



TeamQuest Predictor adds Risk Prediction and TPI calculation to the TeamQuest CMIS

TeamQuest Performance Indicator

The TeamQuest Performance Indicator (TPI) is a single, easy-to-understand, but sophisticated metric reflecting overall application or system health. It's yet another tool for optimizing capacity and minimizing risk.

TPI is more accurate than other summary KPIs, because it is based on an advanced analytic queuing network solver. TPI is a single 0 to 100 metric that facilitates at-a-glance application and system health reporting using tools such as TeamQuest Analyzer and TeamQuest Surveyor.

Automated TPI calculations are added to TeamQuest CMIS by TeamQuest Predictor, and because TeamQuest CMIS can supply data to TeamQuest Analyzer and TeamQuest Surveyor, all these tools are effectively enhanced when you get TeamQuest Predictor.

TeamQuest Predictor's automated TPI calculations can be calculated in near real time and stored by [TeamQuest CMIS](#) to be picked up by [TeamQuest Analyzer](#) and [TeamQuest Surveyor](#) for health analysis and reporting. Also available together with the TPI calculations are components-of-response time estimates that make it easier to determine where exactly bottlenecks are occurring.

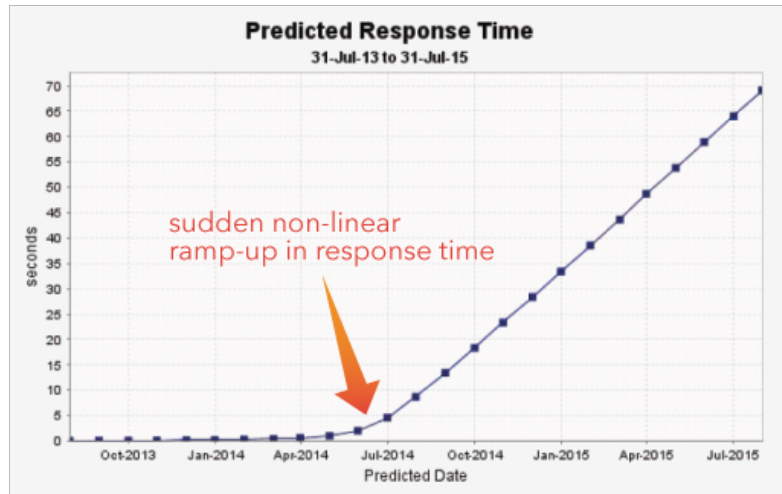
TeamQuest Risk Prediction

TeamQuest Risk Prediction provides automated, forward-looking predictive analysis of all your IT services. It can alert you in advance of trouble, providing a specific and focused warning so that you can avoid disaster. It tells were to focus your attention to avoid predicted problems.

For more information, see our dedicated [TeamQuest Risk Prediction](#) page.

Why it's better

TeamQuest Predictor understands non-linear behavior, with powerful, proven technology based on queuing network theory.



This diagram shows the non-linear effects of increasing loads on response time

TeamQuest Predictor is:

- Automatic - predicting service health (TPI) and components of response across hundreds of applications and thousands of servers (see our [TeamQuest Risk Prediction](#) page.)
- Proactive - telling you BEFORE you have a problem.
- Accurate - typically within 95%, via an easy-to-use analytic queuing network solver.
- Simple - making sophisticated capacity planning easy, by automating all of the complicated math for you.
- Comprehensive - Understanding the details that affect capacity, such as multi-threaded environments & partitioning configuration options.

Features

- Enables automated predictive analytics in TeamQuest CMIS via Predictor's [TeamQuest Risk Prediction](#) capability.
- Adds sophisticated automated application health and system health calculations (TPI) to TeamQuest CMIS.
- Allows you to experiment with what-if scenarios to find the best configuration for handling forecasted workloads. Predicts how infrastructure will perform if workloads change.
- Predicts response time from different components in a multi-tiered environment, allowing you to pinpoint the component responsible for a bottleneck.
- Determines the effects of changes to I/O devices, network bandwidth, and size or number of CPUs.
- Forecasts the number of virtual systems your physical hosts will be able handle.
- Determines best candidates for virtualization projects. Allows you to consolidate and/or virtualize servers with confidence. Helps you find the optimal configuration for hypervisors.
- Predicts the performance impact of migrating from one operating system/hardware platform to another.
- Ensures selected configurations will satisfy service levels while meeting cost and power consumption limitations.
- Helps identify underutilized resources so they can be redeployed for other services.

The screenshot shows a 'Risk Evaluation' report for 'Service: Internet Banking'. It includes a table with columns for 'Time', 'Physical System', 'Logical System', 'Risk To Non-Compliance', 'Non-Compliance Date', 'Critical Resource', and 'Capacity Rule Exceeded'. The table contains several rows of data, with some cells highlighted in red and green to indicate risk levels.

Time	Physical System	Logical System	Risk To Non-Compliance	Non-Compliance Date	Critical Resource	Capacity Rule Exceeded
2013-10-01 00:00:00
2013-10-01 00:00:00
2013-10-01 00:00:00
2013-10-01 00:00:00

Enabling truly proactive management, reports like this one from TeamQuest Surveyor and TeamQuest Analyzer use TeamQuest Predictor's Risk Prediction feature to color-code future service status, so that you can take corrective action before critical services are impacted.



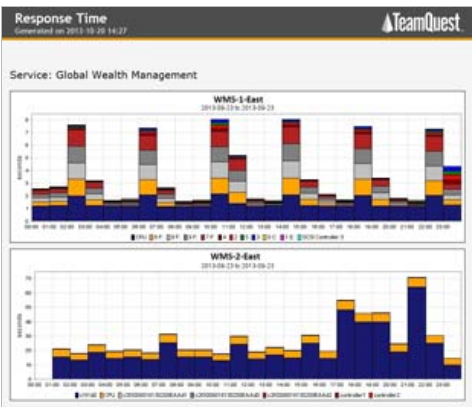
This Predicted Server Health report was produced by TeamQuest Surveyor. The report uses TeamQuest Risk Prediction analytics that were automated by TeamQuest CMIS and powered by TeamQuest Predictor. The report predicts what server health will be in the future, using our exclusive TeamQuest Performance Indicator. With information from this report, you can focus your efforts to avoid future outages and bottlenecks.



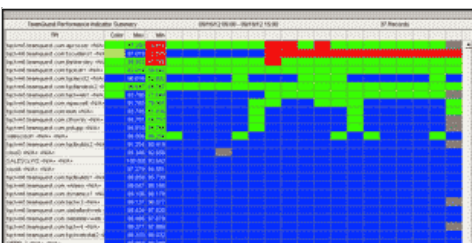
This Historical Server Health report was produced by TeamQuest Surveyor. The report uses analytics that were automated by TeamQuest CMIS and powered by TeamQuest Predictor. The report shows historical server health using our comprehensive TeamQuest Performance Indicator. With information from this report, you can quickly see which of your systems have been causing you problems.



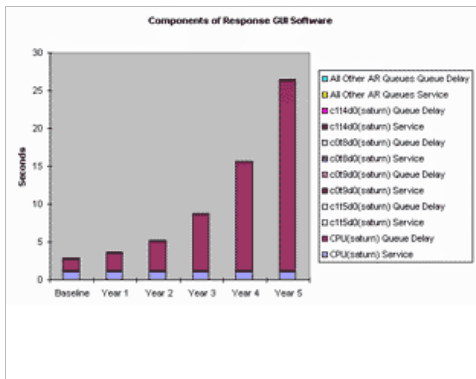
TeamQuest Predictor includes the ability to calculate the TeamQuest Performance Indicator. A measure of service health that is better than utilization-based metrics, TPI takes the response time impact of queuing behavior into account. Reports like this TeamQuest Surveyor report use TPI to summarize service health.



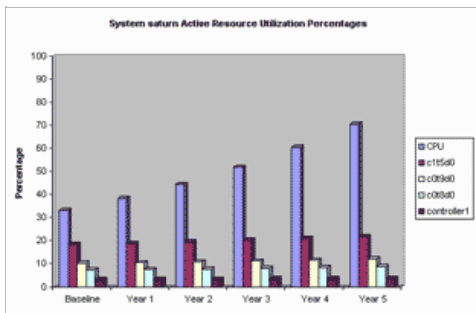
TeamQuest Predictor makes it easier to pinpoint your problem solving efforts by showing you which infrastructure is (or will be) creating a performance bottleneck. (Reports like this one can be generated by TeamQuest Analyzer or TeamQuest Surveyor showing components of response time as calculated by TeamQuest Predictor.)



This TeamQuest Performance Indicator (TPI) Summary Report is useful for detecting potential bottlenecks in a service or application. TPI is an ideal health indicator for detecting bottlenecks. This particular report shows TPI calculated for all active resources, including CPU and all I/O devices.



In this example, the predicted effects of a ramp-up in business is forecasted over the next five years. You can see processes are predicted to spend more and more time waiting on CPU each year, indicating that a CPU upgrade should be planned to ensure that service levels will be met. This report eliminates guesswork by showing that the CPU will become a bottleneck at year three, before the disk devices shown on the report experience significant queuing problems.



This sample Active Resource utilization chart shows the percentage of the active resources used by all of the workloads on a system based on forecasted changes in the business. Notice that the CPU is predicted to become more and more utilized, but there is almost no change in the utilization of disks and controllers. Fortunately, with the configuration being modeled here, none of the devices shown will be saturated within the five year timeframe shown.

Compatibility

TeamQuest Predictor predicts the performance and capacity of these platforms:

- Operating Systems
 - AIX (including WPARs)
 - HP-UX
 - Linux
 - Solaris (including Zones)
 - Windows
- Virtual Environments
 - Amazon EC2
 - IBM PowerVM
 - Microsoft Hyper-V
 - Oracle VM Server for SPARC
 - Red Hat Enterprise Virtualization (KVM)
 - VMware vSphere (ESX/ESXi)
- Processor Architectures
 - Itanium
 - PA-RISC
 - Power
 - SPARC
 - x64
 - x86

Customers using TeamQuest Products

