

PATROL® for iSeries – Predict

Accurately predict and improve system and application performance using user-defined workloads created from IBM Performance Data

PATROL for iSeries – Predict:

- > Predicts and prevents performance problems, testing solutions without expense or disruptions to your environment
- > Allows users to deploy new applications while ensuring capacity and performance needs
- > Helps balance system use to eliminate under-used resources and simplify management
- > Aids justification of system investments through predictive modeling
- > Lets users take advantage of decreasing hardware prices through just-in-time system upgrades

PATROL for iSeries – Predict is part of the BMC® Performance Assurance® Suite for iSeries, which allows users to accurately measure, manage, and improve system and application performance.

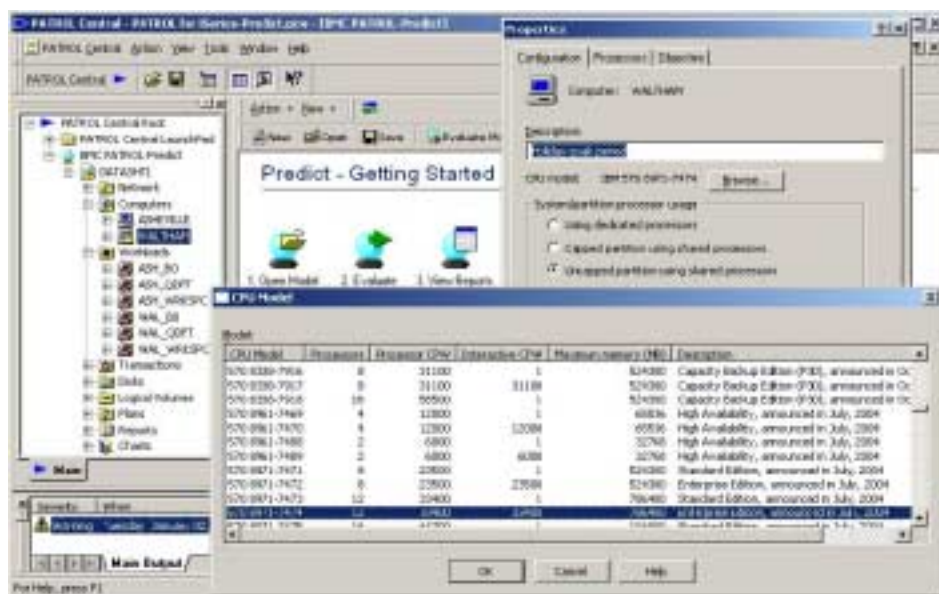
With advancements in technology creating new ways of doing business, information systems have taken center stage as key business tools. As a result, information systems have become increasingly complex and diverse. To stay ahead of the competition, systems must be proactively managed. Upgrades and replacements must be scheduled efficiently and cost-effectively.

The variety of systems and applications available today certainly can help IS professionals successfully meet changing business needs in cost-effective ways. The

challenge is to choose solutions that enable you to work proactively—predicting problems and then preventing them from occurring—while delivering superior performance at the lowest cost per transaction.

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PATROL for iSeries – Predict lets you model capped and uncapped partitions, dedicated and shared processors, single or multiple partitions and/or systems, and select from all announced CPU models.



The product modeling capabilities provide information and insight into key capacity management activities, including:

- > Modeling and evaluating proposed configuration changes made due to anticipated growth before committing to changes in the iSeries environment
- > Determining how systems can be more efficiently deployed to optimize resources
- > Justifying and scheduling system upgrades by creating graphs and reports that demonstrate the need for additional resources and the most cost-effective time for implementation

By asking what-if questions, IS professionals can gain insight into potential configuration changes and workload scenarios. Combining the questions with workload-oriented performance data, PATROL for iSeries – Predict can accurately model changes in hardware, applications, transaction rates, and response times, or model solutions that involve multiple systems. This predictive modeling delivers business value in several ways:

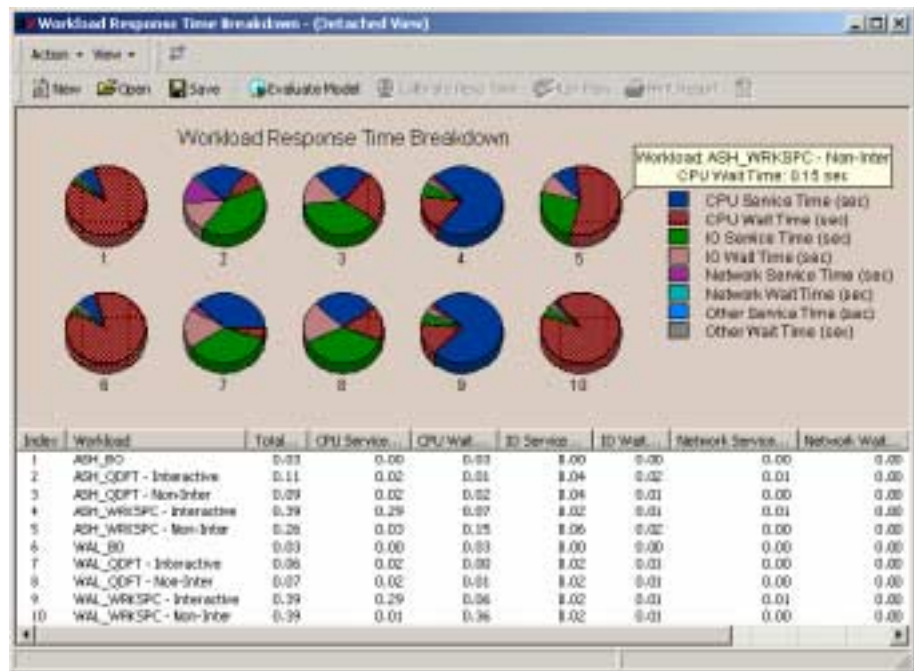
- > Controls cost through optimized system utilization and deferred hardware expenditures
- > Ensures compliance with service level agreements, increasing user and customer satisfaction
- > Increases manageability of the environment - additional infrastructure growth does not necessarily require additional management resources

BMC Advantage Capacity Planning versus Trending

PATROL for iSeries – Predict provides a technical advantage that translates into a solid business benefit for growing systems. Consider, for example, a plan that adds 100 users to the messaging system each quarter. Because expected growth in system use is linear, you might expect that the resulting changes in response time would grow at a constant rate. Many modeling tools make this assumption, and estimate the breaking point of a system based upon extrapolation of single resource trend lines. Furthermore, their trend line is always an irrelevant linear straight line. Unfortunately, this is not correct.

In reality, response time is non-linear with respect to utilization because computers and their applications, being queuing-based transaction processing systems, **behave like non-linear queued systems**. Trending a single resource when trying to determine the overall performance of a system does not accurately reflect reality because applications use and share multiple resources (memory, CPU, I/O). By allowing you to understand the combined effects of multiple non-linear resources on application response time, PATROL for iSeries – Predict puts vital planning information in your hands.

PATROL for iSeries – Predict shows you response time details for workloads and transactions. 20 charts exist, plus predicted values are written to a .csv file, for importing into graphics programs.



The product's advanced modeling techniques are unique in the ability to accurately predict the point at which responsiveness will become unacceptable, taking into consideration both micro-partitioning overhead and changes in CPU efficiencies as the number of processors change. PATROL for iSeries – Predict can also determine current response time, helping to identify and quickly eliminate bottlenecks.

Manage Application Performance

Using data collected by the standard performance monitor that is supplied with the operating system, PATROL for iSeries – Predict organizes and reduces the performance data to create model files. These are transferred to a Windows-based workstation where PATROL for iSeries – Predict can use them for modeling and "what-if" analysis. One key aspect to successful Capacity Planning is the ability to focus on application performance by classifying jobs on the system into relevant workloads that can be modeled. This is especially important if you have service level objections tied to any of your applications and need to know the impact of business changes or system changes on meeting that service level. PATROL for iSeries – Predict allows you to create workloads based on any combination of the following job characteristics:

- o Job type
- o Job name
- o Subsystem
- o User ID
- o Accounting code
- o Main storage pool
- o Communications line
- o Job number

Optimize and Justify System Acquisitions

Using PATROL for iSeries – Predict, you can schedule and test an upgrade before actually making a resource investment. Modeling determines whether the proposed configuration is adequate for the anticipated demand or whether an application design change is needed. You can also use your modeling results to justify hardware purchases by assessing the best time to upgrade, as well as the consequences of not upgrading. Use predictive modeling to schedule a capacity increase to occur at the optimum time. Upgrading too soon is not cost-effective and waiting too long can result in degraded responsiveness or service interruptions. Just-in-time system upgrades let your business take advantage of decreasing hardware costs.

Long-term Planning

PATROL for iSeries – Predict helps develop long-term planning scenarios that ensure stable service levels and customer satisfaction. Using projected growth rates over time for individual workloads, you can model the resulting system and application response times. This accurate projection of performance issues provides valuable input into hardware budget forecasts so you can schedule upgrades or consolidations at a time that is least disruptive to your business processes.

Top level configuration and predicted values give an overall view in this HTML-formatted report. Over 75 other reports are available, both for single evaluations and for growth scenarios.

Predict - Model Summary										
Computer	CPU Model	Memory (MB)	CPU Utilization (%)	Processor Information (Cfgr/Avail Virt Shr Tot)	Queue Length	Throughput (tran/hr)	Resp Time (sec)	Number Of Disks	Avg DiskUtil (%)	Total I/Os
ASHEVILLE - Total	570 8971-7474	31200	98.37	3.50 / 3.70 5 9 12	12.52	1.04M	0.05	30	21.47	3.76K
- Interactive			67.31		2.91	38.03K	0.32			
- Non-Inter			31.06		9.61	1.00M	0.04			
WALTHAM - Total	570 8971-7474	31600	117.75	4.50 / 5.56 6 9 12	21.76	1.69M	0.05	68	30.34	12.75K
- Interactive			80.18		4.30	75.76M	0.24			
- Non-Inter			37.56		17.45	1.61M	0.24			

Server Consolidation and Load Balancing

Insufficient computing resources often cause performance problems. In many cases, capacity is adequate but inefficiently used. You can improve load balancing by using PATROL for iSeries – Predict to model the effects of moving application workloads between systems. This alleviates the need for more capacity and quickly resolves performance problems - at no expense.

PATROL for iSeries – Predict can also help with server consolidation, an easy way to simplify management tasks by reducing the number of business-critical systems. Whether you consolidate work on existing systems or replace several smaller systems with partitions on a single larger one, our predictive modeling will tell you if your plan is a good one.

Supported Environments

PATROL for iSeries – Predict is supported for System i and iSeries systems running V5R2, V5R3, and V5R4. PATROL for iSeries – Predict can process performance data from systems running OS/400 V4R2, V4R3, V4R4, V4R5, V5R1, V5R2, V5R3, and V5R4. The Windows component in PATROL for iSeries – Predict runs on Windows 2000, Windows 2003 Server, and Windows XP Professional.

Helping you maintain advantage

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About BMC Software

BMC Software delivers the solutions IT needs to increase business value through better management of technology and IT processes. Our industry-leading Business Service Management solutions help you reduce cost, lower risk of business disruption, and benefit from an IT infrastructure built to support business growth and flexibility. Only BMC provides best practice IT processes, automated technology management, and award-winning BMC® Atrium™ technologies that offer a shared view into how IT services support business priorities. Known for enterprise solutions that span mainframe, distributed systems, and end-user devices, BMC also delivers solutions that address the unique challenges of the mid-sized business. Founded in 1980, BMC has offices worldwide and fiscal 2006 revenues of more than \$1.49 billion. Activate your business with the power of IT. www.bmc.com.



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