TeamQuest
Optimizing IT Performance

CAPACITY PLANNING

The Value of

Capacity Planning

Capacity Planning Defined

Capacity planning is a strategic process used to match data center resources with business demand to provide acceptable service levels at a minimum cost. It's a critical process that integrates tightly with performance management, service level management, and configuration management.

Capacity planning is used to plan hardware and software purchases, plan upgrades, and consolidate servers. It helps you make the most efficient use of resources, identify underutilized resources for redeployment, and predict resource requirements so you can meet service levels without over- or under-provisioning.

Capacity Planning Methods

Capacity trending is one approach to capacity planning. It looks at historical patterns, applies a linear trend line, then predicts capacity requirements based on this linear growth path. The advantage of this method is its simplicity. The disadvantages are that it often leads to inaccurate predictions—since most businesses experience non-linear performance swings due to changes in demand—and it does not take into account how applications and workloads consume resources.

Capacity modeling is a more sophisticated approach to capacity planning. It uses a slice of your performance data to create a model of your existing environment. You can then input growth projections and alter configurations to see how systems will perform. You can experiment with "what if" scenarios to accurately predict performance. What if workload grows by 15% per quarter? What if I add another CPU to this server? or move this workload to that machine? What if I add a server to this tier? Modeling lets you anticipate resource requirements for future workloads, and experiment to find optimal configurations before investing in changes.

Read more on capacity planning at www.teamquest.com/datacenter/capacity-planning

Top 10

reasons to create a capacity plan

1. Maximize the utilization of existing resources
2. Minimize the cost of meeting service levels
3. Justify expenses
4. Predict performance
5. Determine optimal configurations
6. Be proactive; avoid firefighting
7. Reduce data center complexity
8. Align business and IT goals
9. Upgrade just in time
10. Prepare for the virtualized data center of the future

TeamQuest® software for

Capacity Planning

TeamQuest Model

- Create a capacity plan that meets service levels while minimizing cost
- Know which system in a multi-tiered environment is likely to run out of capacity and when, given your growth rate
- Understand the components of response time so you can pinpoint where more resources are required
- Determine proper hardware configurations for optimal application performance
- Minimize the risks associated with server consolidation
- Prevent capacity shortages for application roll-outs, business expansion and workload growth

TeamQuest Performance Software

- Collect performance data from heterogenous servers, applications and databases
- Analyze system behavior and resource usage
- Define workloads to categorize the work being done on the system
- Use performance data you gather as input to TeamQuest Model

TeamQuest® Optimizing IT Performance

SOLUTION

TeamQuest solution for capacity planning

To effectively create a capacity plan that meets service levels, we recommend these four steps:

1. Determine current and future system requirements.

Define categories of work being done on your system (workloads) using TeamQuest Performance Software. Identify acceptable service levels for each workload and forecast changes in workloads.

2. Analyze current system capacity.

Measure current service levels using TeamQuest Performance Software and compare to objectives. Measure overall component usage and component usage by workload to determine resource utilization and availability patterns. Look for workload that are in jeapordy of missing service level objectives, and look for over- and under-utilized components.

3. Build a model of your current system.

Analyze the performance data you've collected to select a time frame that's representative of critical processing periods for your business using TeamQuest Performance Software. Use that data as input to a baseline model, creating a representation of your existing environment with TeamQuest Model.

4. Manipulate and solve models based on future requirements

Use TeamQuest Model to apply workload forecasts to your model and experiment with what-if scenarios to predict the effect of configuration changes. Create a capacity plan that best meets service level objectives at the minimum cost based on the results of accurate, objective predictions.

Many vendors make claims about their modeling capabilities. Be careful. There are many definitions of modeling. TeamQuest is the only vendor to offer both analytic modeling and discrete event simulation in addition to trending.

Read more and request a free trial, online demo, or a Proof of Concept at www.teamquest.com/datacenter/capacity-planning