

TekTrakker® Reports

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Hardware Reliability Comparisons, Benchmarks and Monitoring



August Issue - Focus on Servers

In this issue we address two related themes – the need for reliability measurement for selecting the best servers for savings, and debunking the myth that redundancy has made reliability irrelevant.

In support of our message, we have included reliability comparisons for two major types of servers in common use – both commodity and mid-range functions.

Failure Rate (MTBF) in months Commodity-Type Servers

Range:

Poor Performers.....**18** months

Best Performers.....**331** months

Average for Tier 1..... **57** months

Data above is extracted from the TekTrakker® database and reflects field experience reported by users. Details regarding particular models, further parts details, and comparisons to your enterprise are exclusive to members of a TekTrakker Data Cooperative. For further information please visit us at www.tektrakker.com

Does redundancy make hardware reliability irrelevant?

Absolutely not. Reliability is not the same as Redundancy. Redundancy is a *technique* for buffering users from downtime – but is no substitute for highly reliable devices.

Just as we are annoyed, inconvenienced, and put at risk by a flat tire, the spare tire in the trunk is no substitute for better tires. Each failure causes a cascade of management problems with significant hidden costs and burdens to the organization. Fewer failures translates into superior ...(continued pg 2)

Commodity Servers :

July, 2009 Failure Rates

Commodity servers are reporting an enormous range of failure rates even between models made by the same manufacturer. There is no discernable pattern to the type of parts failures – each model must be considered on its own.

For this report we considered only those models reported in quantities of over 1,000 device months. Manufacturers represented in the summary include HP, IBM, Sun, and Dell products.

Use Failure Rate to Project Repairs

Repairs per Year 100 Commodity Servers

Average Repairs: **21 repairs per year**

Best Servers: **4 repairs per year**

Worst Servers: **67 repairs per year**

Comparing servers on the basis of their repair requirements opens the door to negotiating break-fix service contracts sensibly, planning refresh and life-cycles more logically, and always improves operational quality.

Redundancy

(continued from pg 1)

operations, more stable environments, and more satisfied users.

Hidden costs of repairs are significant and important to consider in any cost-control effort. Starting with the initial trouble reporting system (service desk/help desk) ticket creation (cost \$25 each) through escalation (cost \$175 each), the process is not free. Repair actions require access control (security access \$100), management escort (\$200), not to mention the inconvenience of weekend or after hours access.

Once the repair is made, the ticketing system is updated (\$25) to reflect the root cause (\$200). At the very least,

simplest of repairs is \$725 in hidden costs plus the direct costs of the repair contract.

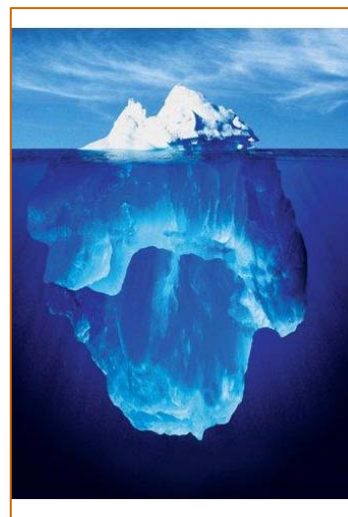
Warranty is therefore never "free". The real burden to the organization is properly evaluated when comparing products on the basis of reliability.

Comparing hidden repair costs based on MTBF for 100 servers, the costs per year to the organization are calculated below:

Average: **\$ 15,750**

Best: **\$ 3,000**

Worst: **\$ 50,250**



Using Reliability Measurement for Virtualization & Consolidation

It is obviously desirable to consolidate/virtualize on platforms with superior reliability than the devices they will replace. The most obvious use of TekTrakker data is provide the backbone for evaluating current products as well as comparing possible options.

Even with such fundamental information, execution of this task is made difficult because most consolidations are logically being designed to use midrange platforms (running Unix and variants) which as a group are reporting far less reliability than simpler devices.

Midrange servers are more complex devices and have many more on-board features. The overall failure rates of midrange devices are far worse than those for commodity servers – currently 33 months MTBF. Unlike commodity servers with multiple models posting extremely strong reliability (over 300 months MTBF), the best of midrange models are almost all reporting under 100 months MTBF.

This means that consolidations are particularly vulnerable to poor product selections. Consolidating products posting a failure rate over 300 months MTBF onto devices with the average of 33 months is a ten-fold increase in risk.

Failure Rate (MTBF) in Months Midrange-Type Servers

Average for Midrange:	33 months
Best Performers:	104 months
Poor Performers:	14 months

Coming up – September Issue Focus on Electric Meters

TekTrakker methodology not limited to IT devices. We are positioned to evaluate equipment used by utilities for metering and SmartGrid applications. Our product launch for the Utility Data Cooperative will be at Autovation in Denver Sept 12-16, 2009.

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