

▶ Heartland Energy

This is a case study of Heartland Energy, a hypothetical manufacturer of diesel and gas generators, as well as hydroelectric, wind turbine, and solar power systems. Heartland frequently experiences web performance problems that are representative of a typical company whose web site is critical for driving revenue, streamlining business operations, and maintaining a competitive edge. As one of the larger OEMs in this market niche, Heartland Energy sources their product components from a global supplier base and sells their product line through a network of retail distributors. Both constituencies link to Heartland's vendor, product, and distributor databases via the company web site. Distributors may also purchase products directly over the web.

Running on an NT server farm using Microsoft IIS, Heartland's web infrastructure also includes an F5 Big-IP load balancer, Cisco network devices, BEA WebLogic application server, an Oracle database, and a personalization server.

Everyday Challenges

Dave Johnson, the network administrator responsible for maintaining the health of the Heartland Energy site, has had a difficult month. The site has experienced numerous performance problems, ranging from slow page load times to complete outages. The causes have varied from the expected to the obscure. The following chronology describes Dave's experience, as well as how it would have been different if he had been using Holistix Web Manager.

1. Early Wake-up Call

About a month ago, Dave received a frantic call at 3 a.m. reporting that the web site had crashed. Dave wasn't sure where to begin to figure out what had caused the problem. It could have been the database, one of the web servers, or possibly the load balancer. So he began systematically checking each component. Foremost in his mind was that he had to get the site up and running as quickly as possible to support Heartland's global customer base.

After several hours of trial and error, Dave discovered that something very simple had caused the problem: The web

server log files had filled his hard drive, causing the web server and various sub components to fail. Because Heartland had never experienced this kind of problem before, it hadn't occurred to Dave to look for it.

What if they had Holistix? If Heartland had been running Holistix Web Manager, the product's Windows NT/2000 profile (one of the many detailed system monitoring templates that ships with Web Manager) would have alerted Dave when the hard drive was near capacity. Furthermore, by using a simple service monitor, Web Manager would have notified Dave that the IIS service had stopped. (See Figure 1.)

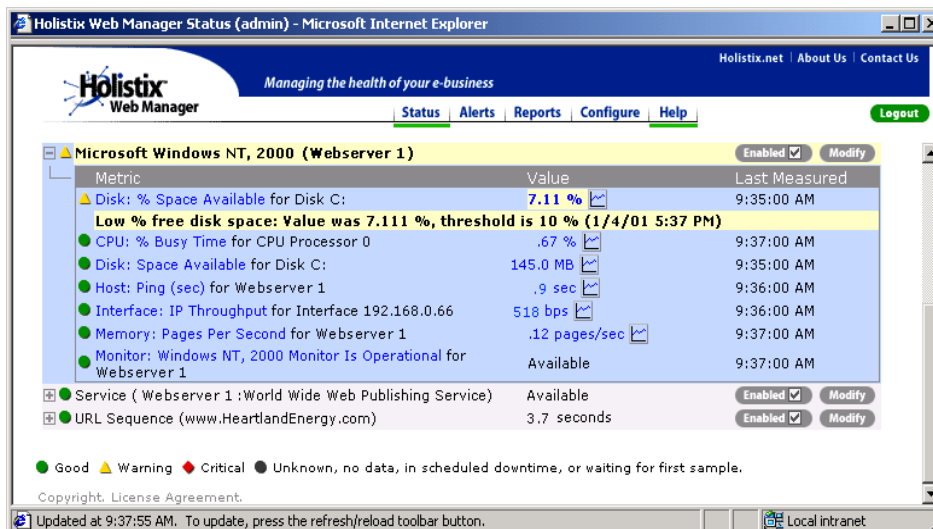


Figure 1: The yellow warning message alerts Dave to a hard drive nearing capacity. The default NT/2000 profile also includes various other server metrics.

2. Endless Waiting

Heartland's site also utilizes third-party content that helps distributors track the delivery of the items they order. Three weeks ago, Dave got word from customer service that the images and content provided by World Delivery Service were loading unusually slowly, if at all. Because the WDS content was tightly integrated with the Heartland site, it appeared from a user perspective that the problem was stemming from Heartland. However, after many hours of researching this problem, Dave realized that there was a routing problem between the two sites. He contacted Heartland's ISP, who resolved the routing issue, and the WDS content was able to load normally.

If only they had used Holistix. Holistix Web Manager would have made Dave's job much easier by identifying and verifying the content coming from the third-party site. Using Web Manager's URL and URL sequence monitors as well as simple Ping monitors, Dave would have known when this functionality was unavailable—and he would have resolved the problem before customer service ever heard of it. (See Figure 2.)

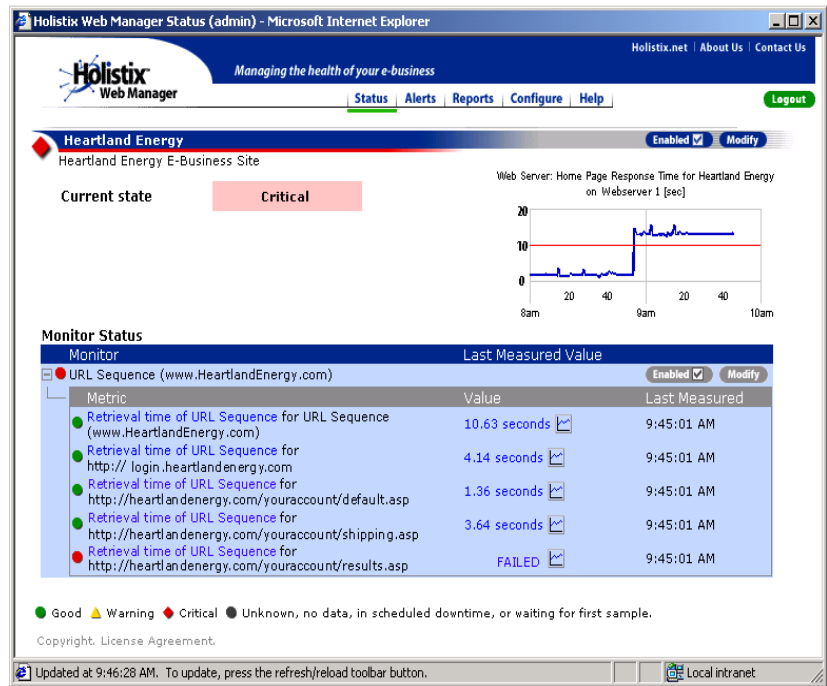


Figure 2: A URL Sequence monitor showing a multi-step process of logging into the Heartland site and performing an account lookup, just like an end user would.

3. Overwhelming Response

The latest in this series of events happened just last week. NBT Global News picked up the press release from Heartland's R & D division announcing their first successful trials of a new, energy-efficient power system. In the hours after the NBT broadcast, Heartland received an unprecedented number of hits to their web site from

users trying to read the announcement. Such a response would have been great if Heartland's site hadn't slowed to a crawl. Instead, many of those new visitors came away with a negative experience.

Better still with Holistix. Once again, if Heartland had been running Holistix Web Manager, Dave would have seen the increased load and URL delivery times using URL monitors, HTTP throughput monitors, and IIS/NT profiles. In addition, a Web Manager report would have shown him the page load time broken down into DNS, HTML, images, and graphics. Dave and his team could have quickly modified the site to make it load faster—making the initial page smaller with fewer images, off-loading the press release to another server, or contracting with a third party to take over some of the load. (See Figure 3.)

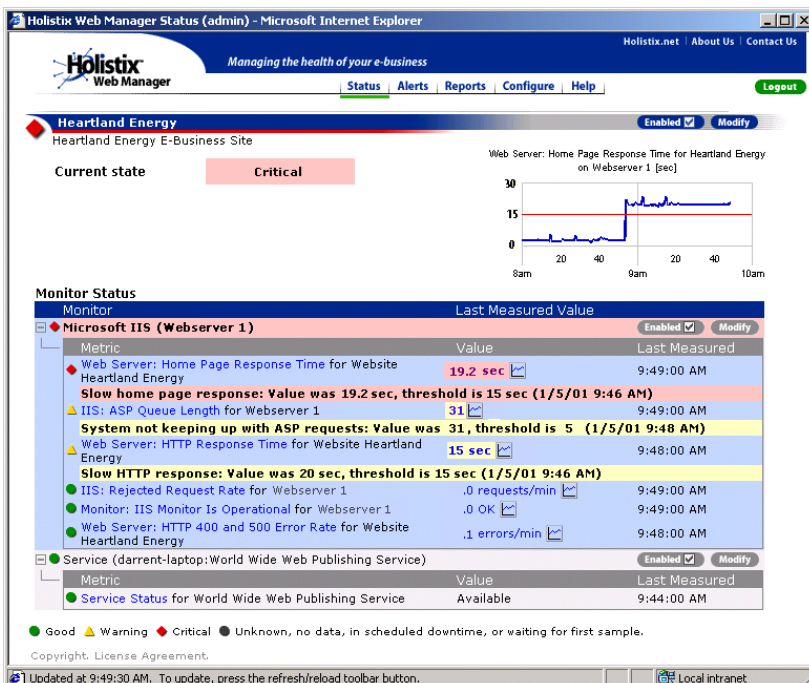


Figure 3: Multiple warning signs about the Heartland web server are displayed here. These metrics help isolate the problem so Dave can resolve it quickly.

The Breaking Point

These three problems happened in just under a month, and Dave had reached his limit of frustration. He and his overworked IT staff were spending most of their time being reactive rather than proactive. Dave wanted to find a long-term solution for managing web system performance issues.

Keeping track of all the systems was a real burden for Heartland Energy's IT staff. They had tried using shareware and homegrown tools before, but soon realized those products couldn't meet their needs.

Commercially available framework and point products like HP OpenView and BMC Patrol were other alternatives, but while they provide excellent functionality in some areas, they offer an incomplete solution from a web application perspective. Also, those products often require a dedicated administrator to set up and maintain them. Dave was looking for a product that was a solution in itself, not another system that required dedicated 24x7 care or ran the risk of becoming "shelfware."

Needless to say, Dave was skeptical that any product could get him out of this jam.

Comprehensive Monitoring

Holistix Web Manager monitors all of the underlying components in your web infrastructure and correlates their health with the performance of critical e-business applications, such as user login, product purchase, account history, or search engine. Web Manager collects performance data on the following components:

- Application servers: BEA WebLogic and Allaire ColdFusion
- Database applications: Microsoft SQL and Oracle
- Operating systems: Solaris, NT/2000, and Linux
- Web servers: Apache, IIS, and Netscape Enterprise Server
- Network devices: Cisco routers and switches and F5 load balancers
- Internet services: HTTP, HTTPS, DNS, Ping, and FTP
- Web site content: URLs and key transactions such as purchase, search, or login
- Any other web system element using available data sources

Enter Holistix

Dave selected Holistix Web Manager because it offered:

Quick Implementation—Traditional management products take weeks or months to implement. Because Holistix Web Manager typically installs in two hours to two days, Dave saved precious time.

Central Configuration with Profiles—Web Manager uses a construct called a "profile" to simplify configuration and management of a wide variety of web system elements. Profiles are collections of configuration information that allow Web Manager to gather the most important metrics for a given web system component. Holistix develops profiles with the guidance of the component's vendor, yet they can be easily customized by the end user. Because a single profile can be applied to multiple systems, Dave can quickly add new components without having to configure each one individually. Reconfiguration is also simple, as a change to one of Heartland's profiles is quickly applied to all systems that use that profile.

Responsive Alerts—Dave now detects and resolves performance problems long before Heartland's distributors or suppliers realize anything is wrong. When the Holistix monitor detects an error condition, an alert triggers an action plan to respond to the problem condition. Dave chooses how he wants to receive alerts—by pager, phone, PDA, e-mail, or SNMP trap, and configures them to support existing escalation policies.

Detailed Data—Dave quickly generates real-time reports on the web system's health, availability, responsiveness, actions and alerts, and system configuration. (See Figure 4.)

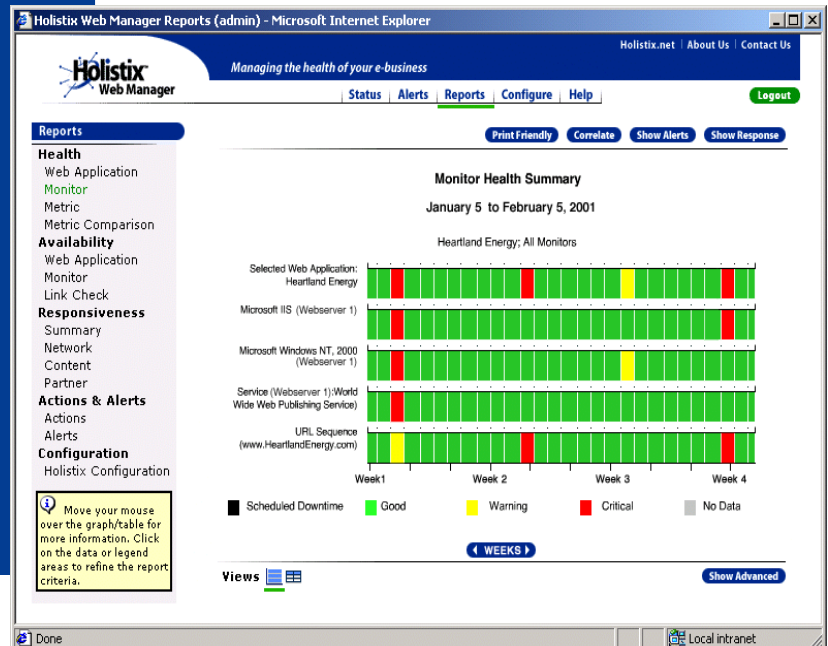


Figure 4: Outages or performance problems can be correlated to the offending device or system.

Comprehensive Reporting—

Web Manager's reports provide Dave and the company with critical information to manage many areas of Heartland's e-business:

Troubleshoot problems. Using Web Manager reports, Dave quickly pinpoints the root of the site's performance problems. Reports indicate critical performance thresholds and correlate the health of system elements to Heartland's e-business applications.

View performance over historical periods. Web Manager's built-in reports provide detailed hourly, daily, weekly, and monthly information. Dave can compare data over historical periods to prevent future problems and better allocate system resources. (See Figure 5.) Heartland's management team frequently uses the comparative data to predict web system trends.

Inform upper management. Web Manager's intuitive reports allow Dave to communicate information to upper management in a format they can easily understand. Management-level reports describe Heartland's web site performance in terms of web application response time, overall end-user experience, and availability. Site stakeholders get the statistics and availability numbers they need to run their e-business. Investors and partners continue to be impressed by Heartland's thorough data collection and long-term analysis.

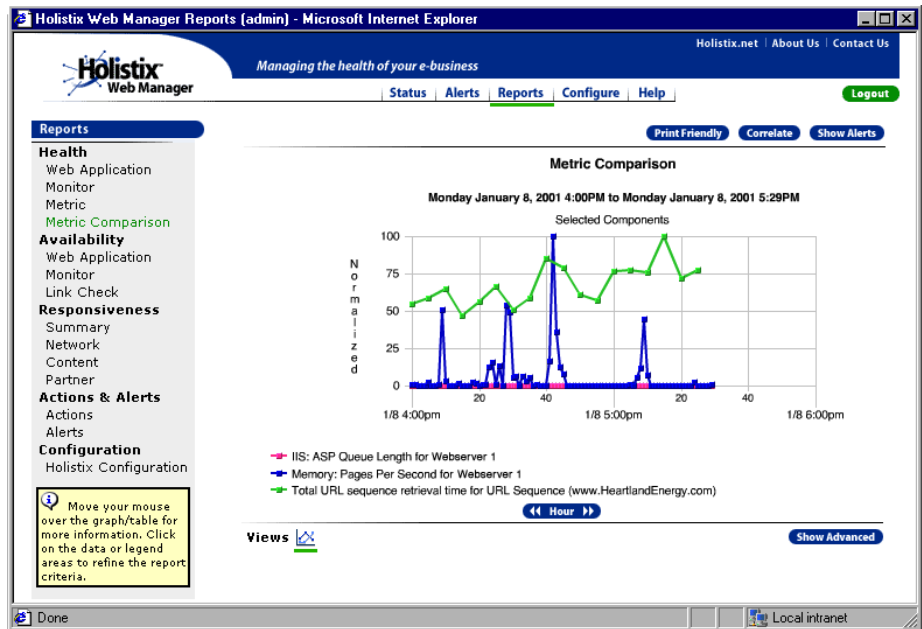


Figure 5: The Metric Comparison report presents data on multiple metrics in a single, normalized chart. For example, URL response time as it relates to memory pages per second and IIS's ASP queue length.

Healthy Future

Management of a complex web system will never be simple, but as Heartland Energy's experience shows, it is possible. Using Holistix Web Manager, Dave Johnson is now able to detect problem areas before they affect site users, troubleshoot and resolve problems rapidly, analyze performance trends for resource planning, and report vital information to e-business stakeholders.

To evaluate solutions for managing the performance of your web systems, contact Holistix.

Key Benefits

Dave receives these benefits by using Holistix Web Manager:

- Flexible alerting and escalation
- One centralized console
- Scalable architecture
- Detailed reporting
- Flexible data collection
- Rapid implementation

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