

High-performance HP Integrity servers
on Linux[®] deliver a sunny forecast for
The Weather Channel[®]

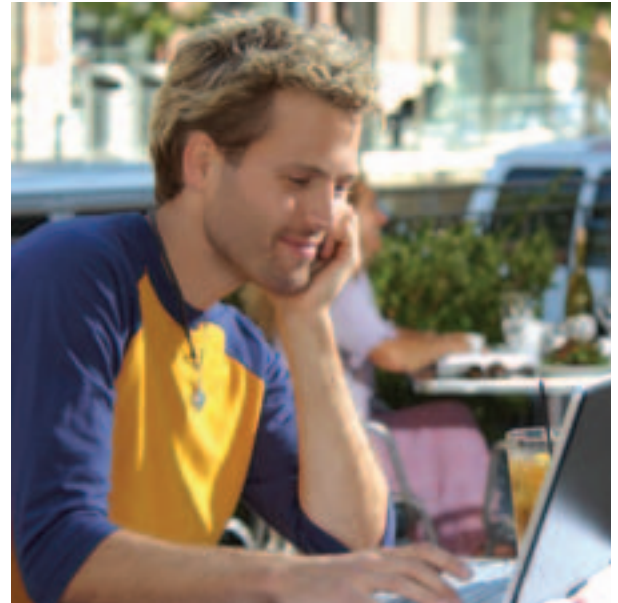


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Vicki Hamilton, Vice President of
Shared Services and IT Operations,
The Weather Channel



weather.com



The Weather Channel challenge

Doing something about the weather

American humorist Mark Twain is famous for saying that everybody talks about the weather, but no one does anything about it. Twain clearly didn't know about The Weather Channel Companies. The family-owned, Atlanta-based outfit has created a thriving business out of packaging weather-related programming information and serving it up to cable television viewers. Whether they're planning a vacation, scheduling crop plantings, or tracking a hurricane, consumers and businesses alike look to The Weather Channel (TWC) for up-to-the-minute forecasts and weather-related lifestyle information.

Founded over the objections of skeptics in 1982, TWC has developed into one of the most ubiquitous cable TV networks in the U.S. An estimated 85 million U.S. cable TV households receive The Weather Channel, along with another 10 million throughout the rest of North and South America.

Having achieved that coverage, the company's challenge is to keep growing—by expanding its viewership, leveraging its brand, and rolling out new products and services. To encourage viewers to tune in more often and watch longer, TWC is developing a broader variety of programming, including documentaries and entertainment programming such as its popular *Storm Stories* series. The goal: higher ratings that will allow TWC to boost its advertising rates, thereby increasing revenue.

In addition to cable programming, The Weather Channel Companies have developed a variety of technology-based products and services. Some send personalized weather information to consumers' PCs, PDAs, and pagers. Others provide customized content to Internet service providers, hotels, Web sites, and other customers. Services such as Weather Scan Local provide a 24-hour regional service for distribution over digital cable to 6.7 million households. There's also The Weather Channel radio network, a syndicated newspaper weather page, and international weather sites, among other products and services.

Powerful infrastructure to enable transformation

Information technology is essential to TWC's success. "People live by the weather," says Vicki Hamilton, vice president of shared services and IT operations at TWC. "In extreme weather conditions, they make important decisions based on the information and analysis we provide. Our server infrastructure is crucial in enabling us to make that information and analysis as accurate as possible and deliver it as fast as possible."



The demands on TWC's server infrastructure have risen in conjunction with the company's growth. "TWC is constantly developing new services to better serve our customers' needs," says Hamilton. "We also have the same need any company does to run our business efficiently and cost-effectively. So when old platforms reach their end of life, we research the market very carefully to make sure we choose the right technology to meet TWC's requirements."

When TWC needed to replace RISC database servers that were reaching their end of life, it chose HP Integrity servers powered by the Intel® Itanium® 2 processor. "On a number of important database routines, their performance was double anything else we looked at," says Kevin Gungiah, TWC director of system administration. "The ROI is very high and easy to justify."

Making the change

Benefiting from an open environment

TWC's choice of Itanium 2-based HP Integrity servers running Red Hat Enterprise Linux was just the latest step in the company's move to an open standards-based computing environment. "In the past three years, we have made a concerted effort to move off traditional RISC architectures and leverage the cost efficiencies, range

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of choices, and strong development environment of the Intel-based environment," says CIO Brian Shield. "We have to be fleet on our feet. The ability to rapidly change direction, create new products, and get them to market quickly probably has higher value for us than for any other programming network. Leveraging the capabilities of the Intel environment absolutely gives us a competitive advantage."

TWC began the shift to an open source environment by migrating nonstrategic applications. "We rapidly progressed to our Web site, on-air platforms, and infrastructure as our confidence grew," says Shield. "Today, some of the most high-growth areas of our business run on the Intel platform. We trust our Intel and open source infrastructure to provide weather forecasts for over 50 million television viewers on both The Weather Channel and WEATHERSCAN networks. That tells you how mission-critical the Intel environment is to us."

Intel-based technologies have become the company's de facto standard, together with FreeBSD, Linux, and other open source operating systems. As Shield puts it, "We have firmly embraced this environment, to the point that when we look at our legacy platforms, we ask: Why do we still have those? Why haven't we converted them? What's holding us back?"

Databases get double the per-processor performance

For its database servers, TWC chose HP Integrity servers, which combine HP's expertise in system design with the Intel Itanium 2 processor's high-performance architecture to produce an exceptionally powerful, scalable server family with multi-OS flexibility, high availability, and unmatched investment protection.

TWC had a strong track record with HP. "We've had great support from them, and both they and Intel have provided us with outstanding engineering resources," Gungiah says. "In addition, their price was very competitive and they released a scalable product line. Our acquisition costs were roughly 75 percent less than if we'd purchased comparable RISC systems."

The Itanium 2-based HP Integrity servers were shattering industry records for 64-bit performance, but TWC wanted the assurance that the platform and the Red Hat Linux environment could handle the company's demanding workloads and business-critical databases. The company was migrating more than 40 Oracle® business and technical databases, which are used by applications ranging from PeopleSoft Financials to TWC's Weatherfacts personalized delivery service and Weather Scan Local digital cable service.

Gungiah's team spent several weeks developing and running a series of performance tests. The team then put their proof-of-concept platform through its paces in Atlanta at the Oracle Enterprise Technology Center and the HP Solution Center, one of 80 HP Solution Centers worldwide. Intel's technical support teams assisted with troubleshooting and enabling.

The results removed all doubt. Analyzing the performance on some of their own Oracle databases, Gungiah's team found the system far outperformed other platforms, with key tasks executing twice as fast. "The [Intel] Itanium 2 processor was faster than anything else we looked at, at that point in time," says Gungiah. "The HP Integrity servers delivered consistent results during the tests and displayed better performance results than the previous RISC-based servers and other technologies tested. We started out hoping we could get equivalent performance. Instead, we got a significant improvement in performance per processor."

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Consolidation drives cost savings

The Intel Itanium processor's high performance allowed TWC to consolidate and simplify its IT infrastructure and generate enough savings to pay for the equipment. The company is consolidating 138 RISC processors from its previous 64-bit database infrastructure onto 42 Intel Itanium 2 processors: 17 two-way HP Integrity rx2600 Servers and two four-way HP Integrity rx5670 Servers. The 3:1 shift enables a variety of operational cost savings.

“This move has driven our operating costs down to an extent that the savings justified the capital expenditure,” says Gungiah. “The yearly maintenance contract on our previous boxes was very high. With HP's three-year maintenance program and maintenance uplift costs, we significantly reduced our operating costs. Over a three-year period, the savings realized will justify the capital expenditure.”

The consolidation onto a smaller number of more powerful processors has generated dramatic savings on licensing costs—incurred on a per-processor basis for many applications. “The savings on licensing alone makes the consolidation easy to justify, when licensing models are based on a per-CPU basis. Scaling down the environment reduced licensing costs,” Gungiah says. “There are so many dimensions to our savings—licensing costs, scalability, fewer CPUs to perform the same functions, fewer points of failure, higher uptime, heating and cooling, floor space savings, network infrastructure savings. The savings are compounded when you factor in the system costs for contingency planning, which is almost impossible to do cost-effectively in a RISC environment when you have to match environments. We were able to take advantage of the high performance of the [Intel] Itanium 2 processor and HP Integrity servers to make this possible.”

Accelerating the transition

Gungiah says the support TWC received from Intel, HP, Red Hat, and Oracle was crucial in enabling the company to proceed with confidence. “We were in uncharted waters in deploying Linux-based solutions in an enterprise environment for mission-critical databases,” he says. “Having that team behind us reduced our risk exposure and gave us confidence that Linux is there to support an enterprise environment. All the pre-work we did confirmed our decision to scale down our environment from proprietary RISC platforms to Red Hat Linux-based solutions on the Itanium 2-based HP Integrity servers.”

The work also made for a faster rollout. “Once the decision was made, the acquisition and deployment was done within a couple months,” says Gungiah. “We planned it as a three-month project, and we finished it with two weeks to spare. The support from our vendors probably shaved a month off the time to value.”

Flexible deployment strategies

TWC's Itanium 2-based HP Integrity servers run as standalone systems, with the four-way servers handling the high-workload databases and the two-way servers assigned to smaller databases and applications. This arrangement gives TWC flexibility in configuring an optimal solution for each application or database while maintaining a consistent, easily managed environment.

It also provides options for scaling as business needs change. “Can we scale easier now than in the RISC environment?” Gungiah asks. “Absolutely, we can scale horizontally at a significantly lower cost. We have more flexibility in scaling the application and server layers. Having commodity-based architecture rather than monolithic systems makes it easier and more affordable to have the agility to meet business demands.”

Further flexibility comes from combining the open source software environment with powerful, scalable servers. “Our new infrastructure gives us a great environment for developing new services,” says Shield. “We have performance and choices in the hardware, plus all the choices of open source software. We're not locked into one vendor's pricing structure and road map, so we have more flexibility to find solutions that work best for The Weather Channel Companies.”



Phase 2 and beyond

Having had such impressive results from both its 3:1 consolidation and the previous phases of its migration, TWC is marching toward a 1Q2005 platform conversion for its core weather forecasting databases from RISC systems to Itanium 2–based HP Integrity servers running Red Hat Enterprise Linux. The company is also increasing its use of Intel processors in other areas. A cluster of four-way Intel Xeon™ Processor MP–based servers runs TWC’s WeatherPro solution, adding graphics to forecast data and packaging it for on-air playback. TWC is rolling out 2,000 new Intel-based servers to support its new Intellistar™ deployment, which enables greater localization and significant improvements to The Weather Channel network.

“Our migration into the open source, Intel-based environment is perceived very much as a success within the company,” says Shield. “We’ve seen tremendous reductions in TCO and great savings on capital expenditures—plus we can take advantage of continuing advances. The Intel environment gives us flexibility, and the performance across the board has been extraordinary. We’re very excited about what’s been accomplished so far and look forward to having virtually all our operations on open source platforms by the end of 2005, as we continue to process weather data more rapidly and extend the reach of our products and services. In doing so we gain a competitive advantage.”

The lessons learned

- **Modernize your IT infrastructure.** A strategic shift to open source environments, coupled with powerful HP Integrity servers based on the Intel Itanium 2 processor and Red Hat Enterprise Linux, are aligned with The Weather Channel’s business goals and provide the agility TWC needs to rapidly develop new services.
- **Run enterprise databases on the Intel Itanium 2 processor.** The Intel Itanium 2 processor, co-developed by Intel and HP, offers exceptional performance. That performance enabled TWC to consolidate its RISC servers at a rate of better than 3:1, achieving dramatic savings.
- **Drive down costs.** TWC says its Itanium 2–based HP Integrity server solution costs 75 percent less than a comparable RISC solution. The consolidation has slashed maintenance and software licensing costs by 90 percent, generating enough savings to cover the acquisition costs of the servers.
- **Take advantage of expert services.** Working with HP Solution Centers, Oracle Enterprise Technology Centers, and technical support from Intel, TWC thoroughly tested its proposed solution in a no-risk environment. That effort paid off in peace of mind and a smooth deployment, completed a month ahead of schedule.

For more information

For more information, visit:
www.intel.com/business
www.hp.com
www.landmarkcom.com

Challenge

- Align business and IT to introduce new weather-based services faster
- Accelerate analysis and delivery of weather reports by speeding database performance
- Reduce complexity of IT environment
- Reduce costs
- Move to open standards-based architecture and open source operating system software

Solution

- Replace aging Sun RISC database servers with 17 two-way HP Integrity rx2600 Servers and 2 four-way HP Integrity rx5670 Servers running Red Hat Linux and Oracle9i RAC
- Consolidate from 138 RISC processors to 38 Intel Itanium processors
- Test solution at HP Solution Center and Oracle Enterprise Technology Center
- Affordable HP maintenance contract

Results

- The Weather Channel achieved its business goals:
 - Business aligned with IT to deliver new services quickly
 - Rapid ROI
 - Fast 3-month rollout
 - Lowered operating costs over 3 years enough to cover the system purchase
 - Licensing costs reduced by 90%
 - Doubled database performance
 - Increased flexibility and exceptional reliability

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