

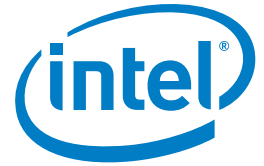
CASE STUDY

Intel® Xeon® processor 5600 series

Enterprise Server

Automation and Cost Savings in the Cloud

Energy Efficiency, Environment, and Performance



Building a high-density cloud

Hosting provider NaviSite uses Intel® Xeon® processors to build a dense cloud environment that produces 10 times the revenue per rack of managed services

NaviSite, Inc., a Time Warner Cable Company, is a leading worldwide provider of enterprise-class, cloud-enabled hosting, managed applications, and services. When the company launched its cloud computing solutions, it used Intel® Xeon® processors as the foundation, building a dense cloud environment that delivers more than 10 times the revenue per rack of non-cloud services. By expanding the environment with the Intel Xeon processor 5600 series, the company has further increased server density and enabled customers to move more and larger workloads to the cloud.



NaviSite®

“With a cloud computing environment built on Intel® Xeon® processors, we are generating 10 to 15 times the revenue per rack of our managed hosting services.”

– Chris Patterson,
Senior Product Manager,
Cloud and Hosting Services,
NaviSite

CHALLENGES

- **Launch new cloud services.** Introduce cloud computing services to meet growing demand for flexible, cost-effective enterprise IT services and to generate new revenues for NaviSite.
- **Expand the cloud.** Scale cloud capacity while controlling the infrastructure footprint.
- **Accommodate larger workloads.** Help customers to maximize the benefits of cloud computing by enabling them to move larger, mission-critical workloads to the cloud.

SOLUTION

- **Cloud computing infrastructure based on Intel® Xeon® processors.** NaviSite built a cloud computing environment with blade servers based on the Intel Xeon processor 5500 series and subsequently expanded the environment with the Intel Xeon processor 5600 series.

IMPACT

- **Increased revenue.** Per square foot of data center space, the cloud computing environment generates 10 to 15 times the revenue of managed hosting servers.
- **Greater capacity, improved density.** NaviSite added 33 percent more servers to its cloud environment while gaining 50 percent more cores. Now the company can efficiently support continued growth.
- **Provided new cloud opportunities.** By using processors that support more memory per server, NaviSite enables customers to migrate larger, mission-critical applications to the cloud.

After more than a decade of offering managed hosting and managed application services, the NaviSite product team saw a clear opportunity for launching new outsourced infrastructure-as-a-service (IaaS) solutions. “Enterprise customers are looking for new ways to increase the efficiency and agility of IT while reducing costs. Many are now turning to the cloud computing model,” says Chris Patterson, senior product manager of cloud and hosting services at NaviSite. “We realized that introducing managed and self-service cloud computing solutions would enable us to meet this emerging demand and create a new revenue stream.”

When searching for a processing platform, the team made core density and support for large-scale memory capacity high priorities. “We are always trying to increase the revenue we can generate from each data center floor tile,” says Patterson. “To build this cloud infrastructure, we needed processors that would allow us to support the maximum number of workloads in each square foot.”

Building the cloud with Intel Xeon processors

After evaluating other processing architectures, the NaviSite team decided to build its cloud environment using Intel Xeon



Launching new services with Intel® Xeon® processors

processors. "We had been using Intel processors for a large percentage of our physical and virtualized server environments for several years, and we saw no reason to make a change for the cloud infrastructure," says Patterson. "The Intel processors deliver strong performance and reliability. We also know that each new generation of processor will work well with previous processors as well as the latest software running in the environment. By selecting Intel processors, we have one less thing to worry about."

The NaviSite team initially built the cloud environment on blade servers equipped with the Intel® Xeon® processor 5500 series. When it was time to expand the cloud two years later, the team adopted new servers with the Intel Xeon processor 5600 series. "The Intel Xeon processor 5600 series enables us to capitalize on greater core counts and memory capacity per server," says Patterson. "As a result, we can accommodate more and larger workloads without significantly increasing our footprint."

NaviSite uses Intel® Virtualization Technology (Intel® VT) FlexMigration capabilities, which enable administrators to integrate multiple generations of Intel processors into a single cloud environment. "The ability to mix and match processor generations within the same environment is a huge advantage for us," says Patterson. "We need the flexibility to upgrade to new servers without having to build a new cluster. With Intel VT FlexMigration, we can quickly and easily expand the environment and integrate the latest-generation processors as demand grows."

The NaviSite team had created virtualized server environments several years earlier using VMware vSphere* virtualization software, and the team decided to stick

with VMware for the cloud environment. Customers can run their preferred operating systems on the hypervisor, such as Red Hat Enterprise Linux* and Microsoft Windows Server* 2008, and a broad range of applications, from basic Web servers and small databases up to large-scale Oracle Database* environments. Organizations that choose self-managed services can readily provision and manage their cloud environments through an easy-to-use Web portal.

Generating new revenues

Building a cloud environment has helped NaviSite accommodate the growing demand for flexible IT services while creating an important new source of revenue. "It was an easy business decision to launch cloud services for our customers," says Patterson. "With a cloud computing environment built on Intel Xeon processors, we are generating 10 to 15 times the revenue per rack of our managed hosting services—that is a tremendous benefit for our business."

Because NaviSite provides cloud services along with other hosting services, its customers can create a tailored environment for their application workloads. "Many of our customers take advantage of cloud services in conjunction with managed hosting services to achieve the right balance between the performance of physical servers and the flexibility of the cloud," says Patterson. "Being able to offer a combination of services gives us a competitive edge."

Expanding the cloud and increasing density

By adopting the Intel Xeon processor 5600 series for the recent expansion of the cloud environment, NaviSite significantly increased the cloud infrastructure's capacity while controlling power, cooling, and real estate costs. "We added approximately 33 percent more servers while gaining 50 percent more cores," says Patterson. "The Intel Xeon processors help us make the most of every square foot of data center space."

Supporting larger customer workloads

The Intel Xeon processor 5600 series also helped NaviSite offer new cloud opportunities for customers. "The Intel

SPOTLIGHT ON NAVISITE

NaviSite, Inc., a Time Warner Cable Company, is a leading worldwide provider of enterprise-class, cloud-enabled hosting, managed applications, and services. NaviSite provides a full suite of reliable and scalable managed services, including application services, industry-leading enterprise hosting, and managed cloud services for enterprises looking to outsource IT infrastructure while lowering their capital and operational costs. Enterprise customers depend on NaviSite for customized solutions, delivered through a global footprint of state-of-the-art data centers.

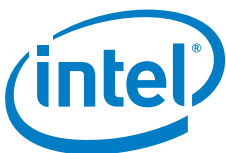
Xeon processor 5600 series supports three times more memory than the previous processors," says Patterson. "As a result, we can support much larger virtual machines. Initially, the average virtual machine size was 1.5 GB—today it is 3 to 4 GB. Our customers can move larger, mission-critical workloads, such as Oracle databases, from physical servers to the cloud and gain more of the flexibility, scalability, and cost-saving benefits of cloud computing."

Migrating managed application services to the cloud

NaviSite is now moving additional customer-facing services and internal applications to the cloud. "We have rolled out Microsoft Exchange*, Microsoft Dynamics*, Oracle E-Business Suite*, and other applications in the cloud to enable businesses to accelerate provisioning and streamline management," says Patterson. "We are also moving internal applications such as Web sites and other processes to a cloud, so our company can enjoy some of the same IT benefits as our customers."

Further expansion of the cloud is likely. "We have seen impressive response for our cloud offerings in just a few short years, and we anticipate continued adoption as more enterprises begin to see the potential for cloud computing," says Patterson. "By building our cloud on Intel processors, we know we have robust reliability to meet our customers' current needs and the scalability for growing demand."

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