Case Study

Third Screen Media
Today, Millions of Ads ...Tomorrow Billions

Case Study Profile

Organization: Third Screen Media

Locations: Boston, New York

LEVANTA®

Get More Out of Linux

LEVANTA CASE STUDY

LEVANTA®

1825 S. Grant St., #350
San Mateo, CA 94402
1-877-LEVANTA

www.levanta.com

The Company's Challenge

Today a quarter of the world's population owns a mobile phone – that's 1.5 billion handsets. And with a 15% compound annual growth rate, Internet-capable devices have become the primary driver of the mobile phenomena giving advertisers a new way to instantly deliver their message directly to billions of customers worldwide.

A pioneering company addressing this burgeoning advertising market is Boston-based Third Screen Media with one of the largest mobile media networks in North America. Their customers are top-tier Web publishers and mobile carriers with very high traffic and on-demand expectations. "As we grow there may be a point where we get a hit on our servers every time a subscriber opens their phone browser – we have to be prepared for that," said Adam D'Amico, Third Stream Media's IT operations manager.

As the mobile ad market has taken off the demand for Third Screen Media's services has skyrocketed. With their anticipated growth rate it is likely they'll need a global presence - with multiple data centers and hundreds more servers - and when they do it'll have to happen very quickly.

By 2008, 89% of major brand advertisers will use mobile data channels to reach their audience, according to an independent study sponsored by Airwide Solutions and cited by Telephony Online.

Solution Overview

REQUIREMENTS

- Deliver ads without delay.
- Significantly reduce costs.
- Automate the deployment of servers, application, and software updates.
- Clone and deploy new servers rapidly.
- Scale from millions of impressions per day to billions.
- Ability to globally scale very quickly.

LEVANTA SOLUTION

- Builds new Linux instances in minutes, not hours.
- Increases flexibility to easily adapt to unpredictable surges in demand.
- Supports server virtualization.
- Increases reliability, availability and manageability for Web-enabled ad delivery to mobile devices.

RESULTS

- Save time with rapid provisioning and configuration deployment.
- Boost staff productivity: High system-to-administrator ratio.
- Save 50-60% in cost per server.

Third Screen Media initiated a 'ground up' design that would be capable of managing a complex and ever-changing environment. The design goals for the data center were simple, build a system with: 1) exponential scalability, 2) unlimited flexibility, and 3) rock-solid reliability … at a cost that the CFO would approve.

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The IT design team implemented an application architecture comprised of classes of functionality with specific software components built on open source MySQL, AJAX and inexpensive Linux servers. They knew they'd have a large number of boxes to manage. What they needed to complete the design was a powerful tool that could provision, deploy, manage change and perform disaster recovery quickly and efficiently.

Their two top requirements for a Linux management solution were:
1) seamless capacity expansion
2) simple configuration management for all of their application components and hardware combinations.

Initially, Third Screen Media technology executives saw limited options to meet these design criteria. They could:

- build their own
- use a commercial software solution
- move to open source software

But these would be laborious and costly. "We could safely say that these scenarios would have cost tens of thousands of dollars and a considerable amount of staff-hours to implement and master," said D'Amico. They needed a better solution.

"The decision to use the Intrepid M became a no-brainer because we had to be able to efficiently manage large Linux deployments. The Intrepid M uniquely offered that and more in a drop-in appliance."

– Adam D'Amico, IT Operations Manager, Third Screen Media

Third Screen Media's tech team did some research and discovered an article that mentioned Levanta's Intrepid M Linux management appliance. "The decision to use the Intrepid M became a no-brainer because we had to be able to efficiently manage large Linux deployments. The Intrepid M uniquely offered that and more in a drop-in appliance. An unexpected benefit of the Intrepid M is that we can reliably and rapidly scale our operation, essentially on demand. I don't know of any other product like the Intrepid M," D'Amico said.

The Levanta Solution

Third Screen Media solved its most difficult design and operational problems by deploying Levanta's Intrepid M Linux server management system which could match their demanding operational standards for scalability, performance and budget. Because the Intrepid M could easily manage thousands of servers, Third Screen Media's tech team realized that a "Google-type" hardware strategy was within reach.

Rather than using high-end systems they could deploy many inexpensive - and easily replaced - commodity servers as a virtual environment, and manage them from the Intrepid M's central repository: With the Intrepid M if one of Third Screen Media's servers fails, they need only pull it out, plug in a new commodity server, update the MAC address in the Intrepid M, and the new server is fully-provisioned from bare metal[1] and up and running in less than 5 minutes.

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[1] The Intrepid M also supports VMware and XEN virtual environments.

The Intrepid M stores a server's operating system and applications configuration on the appliance's 1.4 terabytes of disk space. That single instance of a configuration means updates are made once on the Intrepid M rather than individually to each server. When a newly provisioned server is needed, the Intrepid acts as the PXE server to boot the server over the network with the appropriate configuration. By provisioning the bare metal only when needed, Third Screen Media can maintain a virtual pool of resources and be assured that the server will always be running the latest configuration.

Third Screen Media's business operates on a simple premise. If the system fails, ads aren't delivered— and no ads served, means lost revenue. Even a slight dip in performance will cause page displays to pause while waiting for the ad to arrive. Third Screen Media's key metrics are system uptime and the amount of time it takes to serve up an image. Levanta's Intrepid M enhances both.

Third Screen Media relies on Levanta's predefined "personality templates" and the Intrepid M's quick provisioning to maintain a consistent and reliable level of service.

Third Screen Media simply tweaked the templates to establish the various configuration scenarios or profiles needed to ensure operational excellence. So, when a Quality of Service (QOS) threshold is reached or a failure occurs, the system administrator initiates the appropriate Third Screen Media-defined profiles to provision and deploy the proper operating system, software, and file systems onto servers in a virtual pool of available resources – all from a central location – the Intrepid M.

"We really like the idea that we can create a profile on the Intrepid and take a bare metal system out of the box, mount it in the rack and have it running in a matter of minutes as a functioning piece of our architecture," D'Amico said.

Intrepid M gives Third Screen Media an "environment-in-a-box." The Intrepid M's versatility and its virtual management architecture allow Third Screen Media to adapt to any change that could affect established service levels. For example, performance requirements are easily met by scaling system resources up or down. Likewise, the overall applications architecture can be managed to maximize performance. For example, if the forecasting and ad campaign management functions share a single server, IT can increase performance by cloning one of their class components, which are stored as images, and tweak the Levanta profile. In an instant, an entire collection of separate components is created and deployed on additional servers.

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> *– Adam D'Amico, IT Operations Manager, Third Screen Media*

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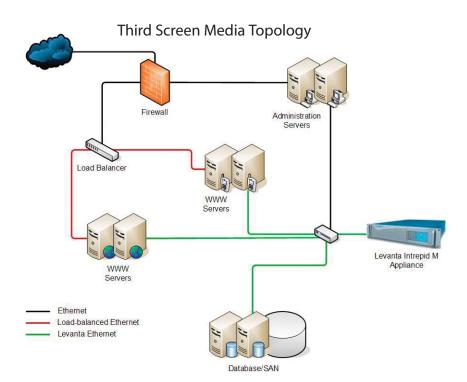San Mateo, CA 94402
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"We don't have to deal with manually configuring each machine or deal with a lot of frustrating software because the Intrepid M delivers instant capacity expansion, the ability to clone and deploy a component in a very short time," D'Amico said.

Third Screen Media has placed the Intrepid M in the critical path of its operation, reflecting Third Screen Media's confidence in entrusting Levanta with its lifeblood and revenue stream. "It's absolutely core to our operation, if our infrastructure hangs we stop making money. When an impression or advertisement gets in front of someone's eyeball—that's revenue value to my company," D'Amico said.

Results and ROI

Designing a data center for growth is not an easy proposition for a young company on the bleeding-edge of an emerging, rollercoaster market. Sporadic, unplanned growth spurts can be taxing on IT budgets. So Third Screen Media understood that their challenge was to manage growth without hindering it.

Building a state-of-the-art virtual IT environment can be tricky. It's not uncommon for a new engineering design project to begin with a tempting list of the newest — and often expensive — equipment until the budget is imposed. With the Intrepid M, Third Screen Media moved from the bleeding edge to the leading edge in IT operations. "The Intrepid allows us to avoid the sticker shock of high-end x86 servers. On a per-server basis, that saves us as much as 50-60%, resulting in tens of thousands of dollars in cost savings. We like that" said D'Amico, who expects the savings to increase even more over time. ❑

Third Screen Media Topology

Firewall

Administration Servers

Load Balancer

WWW Servers

WWW Servers

Levanta Intrepid M Appliance

Database/SAN

— Ethernet
— Load-balanced Ethernet
— Levanta Ethernet