



**Stay Bullish:
How Finance Sysadmins
Bridge New and Old IT**

OPSVIEW

THE PUSH FOR CHANGE IN FINANCE IT ENVIRONMENTS

As a system administrator in the finance industry, you probably spend a lot of your time making plans. Banks, insurers, trading companies, payment processors and other financial services firms have no tolerance for downtime, so they spend considerable money and effort building and maintaining a redundant network that can instantly recover from even a momentary service interruption.

So, you plan ahead. You spend time on capacity management, relying on IT monitoring software to tell you if parts of your network are overworked and in need of help. You set safeguards to ensure that if a critical server fails, you're able to switch resources to a new machine instantly. You schedule planned maintenance months in advance to repair, replace or upgrade important parts of your IT.

But even that doesn't mean your network is guaranteed not to fail.

Many financial institutions still rely on old mainframes and systems that compromise the overall stability and security of their networks. Transitioning away from old IT requires a delicate balance between maintaining operations, managing costs and implementing the most effective solutions for the future.

IT monitoring can help you walk that fine line, making you an agent of change in your organization and making life as a sysadmin that much easier.

DO YOU RELY TOO MUCH ON OLD SOFTWARE?



"IBM 1620 in Computer Lab" by Ed Uthman is licensed under CC BY 2.0 (with modifications)

Financial firms are creatures of habit. If a 30-year-old mainframe still does the job, why bother spending the time and effort to replace it?

This line of thinking isn't without merit. One senior IT professional told ComputerWeekly in 2014 that many banks keep their legacy IT in place because they are "good quality, proven systems" that have stood the test of time and are more durable than cheaper solutions.¹

At the same time, not every old piece of IT can be relied upon years after it's installed. When Microsoft ended its security support for Windows XP in 2014, reports revealed that 95 percent of American bank ATMs still ran on the 14-year-old operating system, putting those institutions at risk of security lapses beyond the end of support deadline.²

It's a similar story for Windows Server 2003, which Microsoft says it will stop supporting with security patches and updates on July 14, 2015.³ Some financial institutions may run thousands of servers on the dated operating system, and they face substantial monetary, compliance and security risks if they fail to upgrade.

Sysadmins are well aware of these risks. Hackers will look to exploit the vulnerabilities of unpatched Windows XP and Server 2003 machines with targeted attacks. Financial institutions that fail to upgrade could be vulnerable to compliance violations if they continue to run unsupported software. And those that choose to pay for Microsoft's premium extended support will pay a whopping \$600 per server for the privilege to run Windows Server 2003 after July 2015.⁴

These are just a few of the potential pitfalls organizations face by running old software, but that doesn't account for the time and effort finance sysadmins spend supporting out-of-date systems. There's a clear and compelling reason to upgrade your infrastructure, but how do you make your case to cost-conscious management?

2 Ways Opsview Helps You Monitor Old and New IT Together

When it's time to upgrade your IT, it's more likely you'll want to make a gradual transition than a full overhaul. Flexible IT monitoring mitigates the risks of hanging onto old IT and incorporating new systems. Here's what Opsview offers to help you bridge the gap.

Automated Event Handlers

Shorten your response time by specifying what a service should do immediately after an interruption or failure. Send an automated alert, automatically restart the service, or script nearly any other action.

Endless Service Plugins

Write plugins for any service to monitor new and old IT together. Plugins allow you to monitor 30-year-old mainframes right alongside your Amazon cloud environment for complete IT coverage.

The screenshot shows the 'Overall view' of services in Opsview. It features three service cards: Google.com (red), CRM (red), and Google Search (green). Below the cards is a table with columns for Business Service, Availability, Status, and Operational Detail.

Business Service	Availability	Status	Operational Detail
CNN.com	0%	Offline	1 of 4 Component(s) failed; 2 impacted
CRM	0%	Offline	1 of 6 Component(s) failed; 2 impacted
Google Search	100%	Operational	1 of 5 Component(s) impacted

STOCK EXCHANGES SET THE LINUX STANDARD

Desiring better security, stability and flexibility, many finance sysadmins today are lobbying for an open source, Linux-based IT architecture. It's part of a broader trend that started nearly a decade ago and that was pioneered in part by some of the world's biggest stock exchanges.

The New York Stock Exchange, the London Stock Exchange and NASDAQ all switched to Linux in recent years, primarily because the operating system's low networking and transactional latency enables high-frequency trading, an emerging part of the stock market.⁶

At the same time, the exchanges appreciated that Linux's open source architecture could be modified to enable even better performance, deliver new features and fixes faster, and suit unique IT needs. Christoph Lameter, who has contributed to the Linux kernel, told Computerworld that NASDAQ customized its own version of Gentoo Linux to manage its exchange.⁷

Today, nearly all exchanges favor Linux, encouraging many more financial services businesses to consider switching to open source (and, by the way, significantly increasing demand for Linux developers on the job market, according to Linux Foundation executive director Jim Zemlin).

With more financial services firms thinking about upgrading to Linux-based environments, sysadmins will need to be ready to manage that transition. Legacy IT monitoring solutions that only monitor Windows technology don't offer the customizability and depth of coverage to look after the finance infrastructure of tomorrow, requiring the adoption of flexible alternatives.

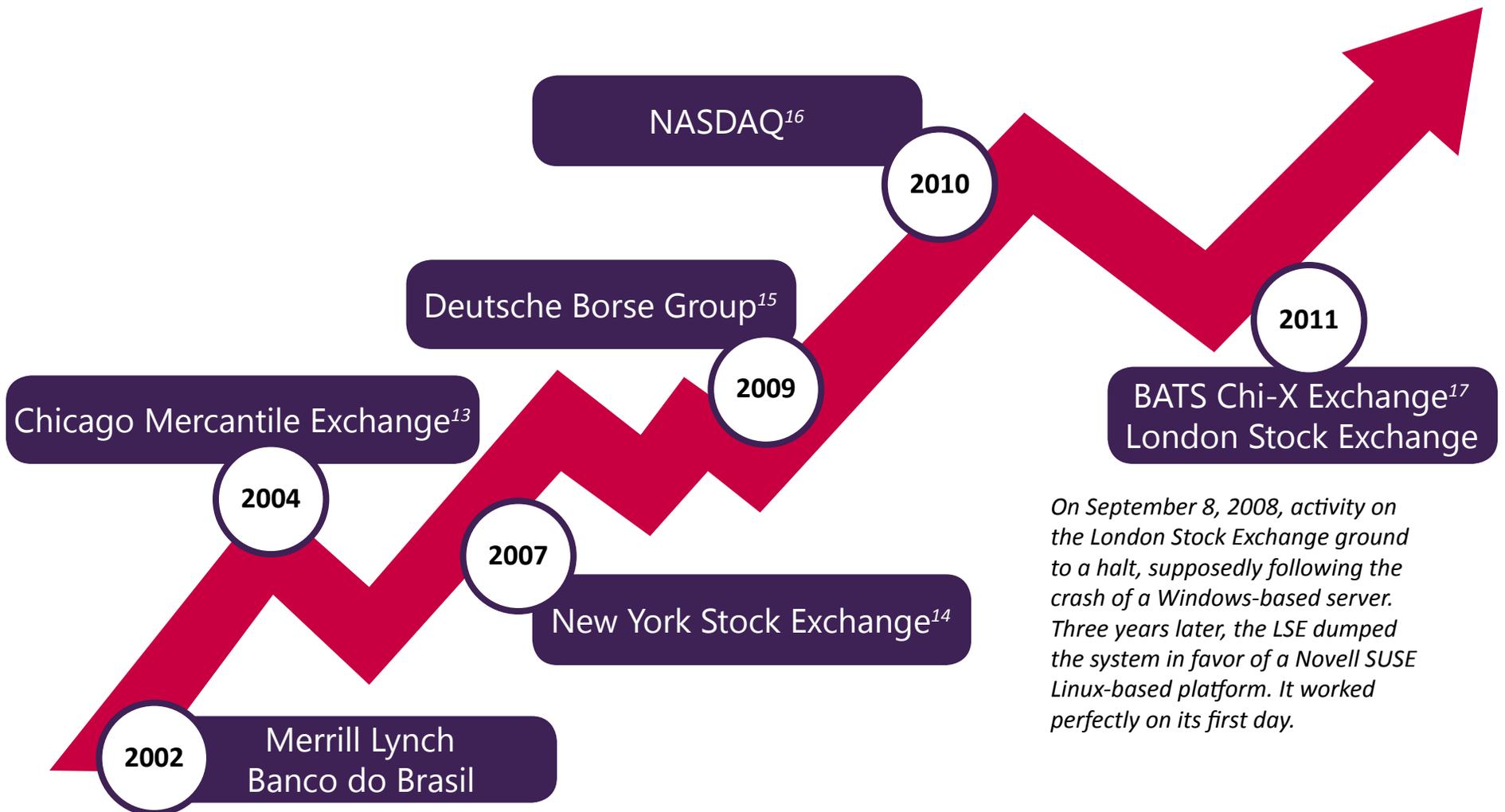
"The trading shops saw that the lowest-latency solutions would only be possible with Linux...The older Unixes couldn't move as fast as Linux did."⁸

- Christoph Lameter,
Linux kernel contributor



"The Market Economy" by Baer Tierkel is licensed under CC BY 2.0 (with modifications)

Timeline: Major Linux Users in Finance



On September 8, 2008, activity on the London Stock Exchange ground to a halt, supposedly following the crash of a Windows-based server. Three years later, the LSE dumped the system in favor of a Novell SUSE Linux-based platform. It worked perfectly on its first day.

Merrill Lynch was an early adopter, replacing its mainframe servers with IBM boxes running Linux software back in 2002 to achieve cost savings, improved stability and better scalability.⁹ Banco do Brasil,¹⁰ Cigna,¹¹ Bank of America and J.P. Morgan¹² are now all using Linux-based technologies within their infrastructure.

So, you know the risks of relying on out-of-date hardware and software, and you recognize the industry trends that are pushing more financial firms toward flexible IT environments. As you make the case to company leadership to upgrade your infrastructure, you also need to think about the solution you'll use to keep an eye on all that IT.

Just as finance is moving toward Linux in the data center, so too are sysadmins favoring Linux-based IT monitoring over Windows-based solutions. That's because finance IT environments are growing even more diverse and fit-for-purpose, requiring unique business service monitoring capabilities that sysadmins can't find from many legacy commercial monitoring products.

3 Reasons Finance Firms Need Linux IT Monitoring

Unique IT Architecture

Most major institutions develop their own internal software for nearly everything. And because developers are constantly creating new applications to serve crucial functions, sysadmins need monitoring that can scale and support any in-house application. Customizable IT monitoring allows you to write plugins to monitor anything.

Priority on Stability

A stable monitoring platform offers a consistent view of your IT infrastructure, which itself needs to be running nonstop. With Linux-based solutions, you don't need to restart your platform due to patching or stop monitoring your system to make an upgrade. You can maintain round-the-clock monitoring and install secure packages to avoid security threats.

Hunger for Data

Key stakeholders within your company may want to be kept in-the-know regarding the health of your IT system, which makes it vital to have a monitoring solution that can produce readable reports. Monitoring solutions that offer a MySQL backend allow you to customize and automate readable reports for corporate management and other important stakeholders.

Heartland Centralizes Windows, Linux Monitoring with Opsview Enterprise

Heartland Payment Systems operates a massive corporate IT environment, including two data centers and 10 server rooms across multiple geographic locations. This infrastructure, which runs on both Windows and Linux servers, powers more than 11 million daily transactions and \$120 billion annually for the credit card payments processor.

Looking to replace its existing monitoring solution – which lacked adequate coverage for its Linux servers – Heartland searched for a tool that had the flexibility of Nagios but better administrative capabilities.

Brian Honaker, Heartland systems engineer, began experimenting with free versions of Opsview, but decided to adopt the full Opsview Enterprise suite across Heartland's entire IT infrastructure. The payments processor now enjoys full visibility of its entire IT estate from one tool that can be extended with customizable plugins whenever new hardware or software is added.

"We have created high-level dashboards centrally and delegated them out for general use. But we also let each team build bespoke dashboards for their specific technology domains," Honaker said. "The result has transformed our IT support model from being merely reactive to fully proactive. Having a single pane of glass view of our all IT systems means issues are handled more efficiently, with many being identified and fixed before they impact end users."¹⁸

"Administering Nagios is insane! We wanted something that gave us all the flexibility but didn't come with all the associated risks and administrative bottlenecks."

- Brian Honaker
Systems Engineer, Heartland

11 million
daily
transactions

\$120 billion
annual
transactions



BRIDGING THE GAP

In finance, IT is a matter of dollars and cents. Your organization will only allow you to make so many changes to your IT infrastructure given the substantial investments of time and money required to upgrade systems. At the same time, there may be certain parts of your IT estate that you feel are worth holding onto even as you favor certain newer solutions.

It's all about balancing cost, time, security and reliability. Finance sysadmins need a way to support both the old and new, and be sure that no matter what systems are running in their data center, the front-end services that customers rely on are fully operational and running 24/7.

IT monitoring can help. A monitoring platform that offers a full breadth of technology coverage – whether you need to monitor a decades-old mainframe or a brand-new server – helps bridge the gap. And flexible management capabilities, automation and deep reporting offer the tools you need to minimize interruptions, conduct seamless system improvements and identify opportunities to further modernize your infrastructure.

Finance IT environments have changed a lot in recent years, but it's only the beginning. With the right monitoring platform, sysadmins have the foundation to react to the evolution of finance IT – and make their lives much easier in the meantime.



Thanks for reading our eBook!

We're Opsview, an IT monitoring company that's helping take finance IT monitoring tools to the next level. We work with organizations around the world to deliver enterprise-grade IT monitoring that offers finance sysadmins greater oversight of their IT environments.

Our highly configurable platform empowers you with everything you need to keep an eye on thousands of devices, from a multi-tenant architecture, to clean and detailed reports, to seamless integrations with the rest of your IT tools.

We believe that to keep your customers connected around the clock, you need a IT infrastructure that is agile and automated. Opsview is here to help.

**DOWNLOAD A
FREE TRIAL TODAY**

What We Do



Real-time / Historic
SLA Reporting



Scalability



Dashboard GUI



Multi-tenant



Business Service
Monitoring



Autodiscovery



Network Traffic
Analysis

www.opsview.com
info@opsview.com
+1.866.662.4160

800 West Cummings Park
Suite 6350
Woburn, MA
01801-7200

- 1 "Big Banks' Legacy IT Systems Could Kill Them," ComputerWeekly, January 2014
 - 2 "95% of Bank ATMs Face End of Security Support," CNN, March 4, 2014
 - 3 "Windows Server 2003 End of Support," Inc.com, September 30, 2014
 - 4 "Got \$600 for Every Win Server 2003 Box You're Running? Uh-Oh," The Register, February 16, 2015
 - 5 "2014 State of Readiness for Windows 2003 End of Support: Webinar Poll Results - Market Checkpoint," AppZero, October 2014
 - 6 "The London Stock Exchange Moves to Novell Linux," ZDNet, February 14, 2011
 - 7 "Jim Zemlin to Wall Street: Why Open Source Will Lead the Way," ZDNet, June 24, 2014
 - 8 "How Linux Mastered Wall Street," Computerworld, August 15, 2011
 - 9 "Merrill Lynch Banks on Linux," ComputerWeekly, January 2003
 - 10 "Major Brazilian Bank Votes for Big Blue, Linux," The Inquirer, November 2002
 - 11 "Cigna Named 2013 Red Hat Innovator of the Year," Red Hat, July 15, 2013
 - 12 "Linux, Open Source Still 'Money' in Financial Services," Computerworld, November 8, 2011
 - 13 "Chicago Mercantile Exchange Uses Red Hat Enterprise Linux to Double Daily Trades and Halve Hardware Costs," Red Hat, 2004
 - 14 "New York Stock Exchange Runs Trades on Red Hat Linux," InformationWeek, May 14, 2008
 - 15 "Linux Powers World's Fastest Stock Exchange," Computerworld, September 1, 2009
 - 16 "NASDAQ OMX Upgrades to Genium Inet," Futures & Options World, October 27, 2010
 - 17 "BATS Trading platform to Replace Chi-X Instinet Following Acquisition," ComputerworldUK, February 21, 2011
 - 18 "Heartland Payment Systems" Case Study, Opsview, retrieved March 2015
- Coverage image: "New York City, Lower Manhattan, Bowling Green Park: Charging Bull, Arturo Di Modica"
by Vincent Desjardins is licensed under CC BY 2.0 (with modifications)