Customer Spotlight:

The Depository Trust & Clearing Corporation

eG Innovations

World's Largest Financial Transaction Settlement Firm Reduces Complexity of IT Infrastructure Monitoring with eG Enterprise

DTCC

The Depository Trust & Clearing Corporation

Overview

For more than 30 years, DTCC's family of companies has helped automate, centralize, standardize and streamline processes that are critical to the safety and soundness of the capital markets.

DTCC, through its subsidiaries, provides clearing, settlement and information services for equities, corporate and municipal bonds, government and mortgage-backed securities, money market instruments and over-the-counter derivatives. In addition, DTCC is a leading processor of mutual funds and insurance transactions, linking funds and carriers with their distribution networks.

DTCC's depository provides custody and asset servicing for 3.6 million securities issues from the United States and 121 other countries and territories, valued at $33.9 trillion. In 2009, DTCC settled nearly $1.48 quadrillion in securities transactions.

Philosophy

DTCC is a values-driven company. Its purpose is to help grow the world economy by furthering the development of low-cost, efficient capital.

Its mission is, by 2010, to be the acknowledged world-class provider of servicing solutions to financial markets through leadership, innovation, technology, risk management and strategic alliances.

Its values provide the moral compass by which it operates, binding it together and underscoring its approach to business for all DTCC employees.

Using eG Enterprise, DTCC monitors an IT infrastructure responsible for settling nearly $2 quadrillion in securities transactions every year. With eG, DTCC monitors its extensive physical and virtual IT infrastructure using a single pane of glass, thus simplifying a highly complex task. This is another example of how eG Innovations helps customers worldwide solve their most critical IT challenges.

The Challenge: Ensure optimum business service performance by removing the complexity and redundancy associated with monitoring hundreds of servers and thousands of desktops.

Stock exchanges in the United States and around the world do not officially close their books for the day until DTCC has settled every single transaction. An institution owned by hundreds of banks around the world, DTCC acts like a public utility to ensure that each day's global financial transactions are properly accounted for.

With such a solemn responsibility, zero downtime is an absolute requirement. DTCC has operations and staff in multiple locations, including business sites outside the New York City area, as well as multiple data centers (that are geographically dispersed by thousands of miles) to ensure 100% availability of its IT infrastructure. All data centers have identical mainframe and distributed resource configurations. Things will get even more interesting as DTCC rolls out a Citrix-based virtual desktop infrastructure (VDI) over the next 12-18 months.

"No matter what the computing environment, operating system mix and application or service workload, we just say 'Leave it to eG' and know we will meet our performance expectations."

The good news is that DTCC has never experienced an instance of downtime. The bad news is that, to reach this point, DTCC became overwhelmed with a mixed-bag of redundant monitoring tools and management frameworks. "Everything eG Enterprise does can be done by other tools…and we have them all," says Marc Berliner, systems director at DTCC. "But we can't possibly work with so many different tools. We needed a cleaner, more automated way to track and correlate business service performance and events using fewer monitoring tools that were easy to deploy and administer. That's exactly what we have with eG Enterprise. Other products claim ease of use, but eG actually delivers."

In addition to its business and operations centers, DTCC also has multiple data centers, all of which are managed by an IT staff of roughly 500. This is comparatively lean, given DTCC's excessive transaction volume. Processing is load-balanced on redundant servers, and all centers have identical configurations and are hot all the time. Each data center has an IBM Z10 mainframe, and more than 1,500 servers are in production covering all sites, running AIX and Solaris predominantly.

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Websphere is the primary application environment for financial (client-facing) transactions, and DTCC has eight VMware ESX servers hosting some 300 virtual guests on Windows to run its administrative internal applications (e.g., Lotus Notes, time management, etc.).

eG Enterprise monitors more than 1,200 IT components and some 700,000 metrics that support business-critical client-facing transactions. eG Enterprise interoperates with HP OpenView running on the servers and, specifically, with NetCool, which is the primary event log for all data center monitoring activity. NetCool takes events from all of DTCC's various tools and creates trouble tickets and manages event handling. Performance data collected by eG Enterprise goes into the NetCool event log, but all event correlation and root cause analytics for DTCC's extensive infrastructure is performed by eG Enterprise. Despite the reliance upon eG Enterprise, not a single IT staffer is dedicated to administering the product, whereas DTCC assigns five people to administer HP OpenView.

New Insights, Improved Staff Efficiency Result from eG Enterprise

In the beginning, eG was "yet another monitoring tool" to DTCC, who already had their hands full with products in this space. "We started with an eG proof-of-concept on 10 AIX servers," said Berliner. "Right off the bat, we could see eG was different from other tools because it started collecting data immediately upon installation. It wasn't long before we tried it on routers, printers and other addressable devices, and it worked great in all cases, often collecting performance information we were not seeing despite all the other tools we were already running."

DTCC actually got up to 200 licenses, still in test mode, but also introduced eG Enterprise into client-facing production systems running Websphere on AIX. Berliner also installed eG Enterprise on DTCC's Brocade storage area network of 40+ switches, which was experiencing performance issues and was not being monitored effectively. "It took about 1/2 hour to configure eG to monitor all of the Brocade SAN switches" he says.

Berliner has seen several benefits from using eG Enterprise, including:

- **Faster problem identification through improved automation**. Given the critical nature of DTCC's transactions, problems with Java virtual machines (JVMs) could be life-threatening to the parallel processing at the primary data centers, especially if problems occurred towards the end of the trading day where it could jeopardize timely account settlements. Occasionally JVMs would hang and, before eG Enterprise, this could not be detected. But since eG Enterprise can test server ports and monitors JVMs automatically, this has been resolved.
- **Automated script creation**. Like any business, DTCC has home-grown applications that require constant writing of customized scripts to obtain specific metrics. Keeping up with this activity had been a major resource drain on DTCC's staff. Berliner finds that any executable statement can be embedded within the eG Enterprise single agent, so it runs automatically and becomes part of the reporting system. This has saved weeks of manual effort building and maintaining scripts, and also eliminates the possibility for errors, which are unavoidable in manual coding.
- **Value in quality assurance and application development**. eG Enterprise provides DTCC a useful perspective on QA and development. They use eG Enterprise to monitor new programs in development mode and spot problems they would have otherwise missed. Using eG Enterprise during development lets DTCC put finished applications into production faster and with fewer downstream issues.

VDI Roadmap

DTCC is testing the deployment of Citrix XenDesktop infrastructure on its corporate-only network, being managed by the eG VDI Monitor, which is part of the eG Enterprise Suite. Beginning with 40-50 desktops, the deployment is expected to reach a couple of hundred by September 2010 and potentially could result in some 2,500 virtual desktops by 2012.

eG Innovations

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About eG Innovations

eG Innovations, Inc. (www.eginnovations.com) is a global provider of performance monitoring and triage solutions for both virtual and physical IT infrastructures. The company's patented technologies provide proactive monitoring of every layer of every tier in the infrastructure, thereby enabling rapid diagnosis and recovery in enterprise and service provider networks.

eG Innovations has been included in the list of "Cool Vendors" in the IT Operations Management 2010 report by Gartner, Inc., which also positioned the company in the Niche Players quadrant of its Magic Quadrant for IT Event Correlation and Analysis (ECA), 2009. The eG VM Monitor™ also was judged "Best of VMworld 2008" in the Application and Infrastructure Management category, and won three categories in the 2008 Virtualization Review Readers Choice Awards.