

White Paper

Why IT Operations Need Their Own Data Analytics

Change and configuration problems are a chronic pain for IT operations, overwhelmed by the volume, velocity and variety of change and configuration data. It's time to recognize the chronic change and configuration challenges for what they truly are: "big data" problems, and how they can only be solved with an IT operations analytics approach.

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CHALLENGE: Managing Complexity and Dynamics in Today's Environments

Since the early 1990s, to overcome severe performance and availability problems resulting from change and configuration, IT management tools have been implemented for IT operations. Yet, these tools were not designed to deal with the complexity and dynamics of the modern data center. While these tools provide IT operations with lots of raw data, now overwhelmed by the volume, velocity and variety of change and configuration data, they lack insights or actionable information, leaving the change and configuration problems a chronic pain for IT operations.

It's time to recognize the chronic change and configuration challenges for what they truly are: "big data" problems, and how they can only be solved with an IT operations analytics approach. This approach stands to end the 15 years of chronic change and configuration challenges by applying powerful analytics to the overwhelming change and configuration management data, turning this data into clear, actionable insights. Enterprises that have already implemented IT operations analytics solutions report on achieving significant cuts in their mean time to repair (MTTR), reduced number of incident and downtime, and smooth error-free releases.

IT operations analytics are a response to the three primary drivers of chronic change and configuration challenges:

COMPLEXITY.

Over the years, each layer of technology in the data center has become dramatically more complex to control and manage. The average server carries environments with tens and hundreds of thousands of configuration parameters. For example: Windows OS contains between 1,500 and 2,500 configuration parameters, IBM WebSphere Application Server has 16,000, and Oracle WebLogic more than 60,000. And if any of these parameters are misconfigured or omitted, such a change can dramatically impact IT operations. And a growing interdependence between applications makes it increasingly difficult to manage and control all of business services.



This scenario has been made clear in numerous, well publicized outages. For instance, in April 2011, Amazon Web Services suffered a devastating event that

IT Management tools were not designed to deal with the complexity and dynamics of the modern data center.

knocked offline some of their big-name customers like Reddit, Foursquare, HootSuite, Quora and others, for as much as four days. Amazon released a detailed postmortem about the outage and identified the culprit: A network configuration error made during a network upgrade. In a recent report, industry analyst firm Forrester declared, "If you can't manage today's complexity, you stand no chance managing tomorrow's. With each passing day, the problem of complexity gets worse. More complex systems present more elements to manage and more data, so growing complexity exacerbates an already difficult problem. Time is now the enemy because complexity is growing exponentially and inexorably."

DYNAMICS.

For IT Operations, change is a fact of life, taking place at every level of the application and infrastructure stack and impacting nearly every part of the business.

To meet these challenges, enterprises adopted agile development processes to meet business demands for accelerated application release schedules, employing such practices as continuous integration and continuous build, pushing hundreds of changes into production on a daily basis. For example, eBay has described having about 35,000 changes per year. Estimates are that between 50 and 75 percent of data centers run outdated system configurations, according to a 2011 IBM survey.

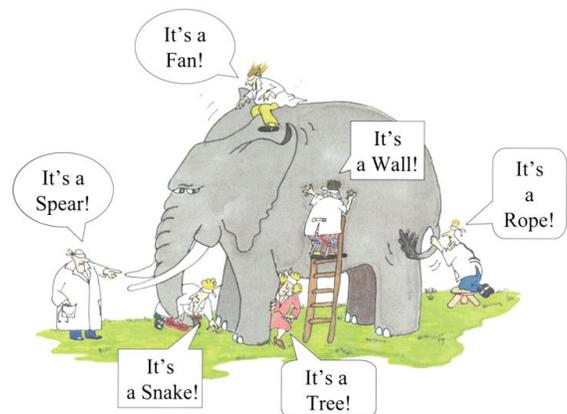


BIG DATA PROBLEM

None of the traditional tools actually have done this, never approaching this situation as a 'big data' problem.

SILOS.

Most organizations do not have a single authority that owns end-to-end environments for application management. Typically, applications run on different physical and virtual systems that communicate across networks, which in turn may include internal and external segments with limited visibility. While there are tools for BTM (business transaction management), APM (application performance management), SM (service management), and service desk, they are each focused on handling their particular scope of metrics and data in their own process silo, lacking broad and deep visibility into the overall IT environment.



WHITE PAPER: WHY IT OPERATIONS NEED THEIR OWN DATA ANALYTICS

Existing tools are not designed to deal with this big data problem. With the complexity of IT systems, the dynamics of IT operations and multiple teams working in silos IT operations needs not only to automate, but also collect data down to the finest details, ultimately analyzing all changes and consolidating information to unify the various operations silos. None of the traditional tools actually have done this, never approaching this situation as a 'big data' problem.

SOLUTION: A New Approach: IT Operations Analytics

Now IT operations analytics is emerging. As Gartner recently reported, “The operational data explosion has sparked a sudden and significant increase in demand for ITOA [IT Operations Analytics] systems. While spend on this kind of technology amounted to approximately \$350 million in 2011, we anticipate that Global 2000 enterprises will have spent \$720 million on ITOA licenses and first year maintenance in 2012 ... and we expect that amount to grow by an average of 15% a year for the next five years” (*IT Operations Analytics Technology Requires Planning and Training*, Gartner, Published: 19 December 2012) These new IT Analytics tools take different perspectives on the abundant data and complexity confronting operations teams, mining the huge amounts of IT data for actionable information and insights.



IT ANALYTICS

IT analytics can provide insights to help IT Operations manage more effectively, tackling the complexity and dynamics of today's data centers.

Using mathematical algorithms and other innovations, IT operation analytics tools extract meaningful information from the sea of raw change and configuration data. Some of the most common analytics technologies available are statistical pattern-based analysis, event correlation analysis, heuristics-based analytics, and log analysis.

COMMON USE CASES IN IT OPERATIONS

The value of IT Operations Analytics comes through when applied to many of the common use cases in IT operations, such as:

Incident management.

MTTR is woefully high in most organizations. Analytics can dramatically reduce the time to respond to incidents and even feed efforts to eliminate incidents from occurring in the first place. For instance, when an incident occurs today, IT operations starts a race against time to sort through the sea of dispersed data in an attempt to figure out “what changed” from the last time the system was working fine, and what caused the incident. IT Operations Analytics transforms this process by automatically analyzing all changes that occurred since the system was working fine, applying pattern and statistics based algorithms to identify the incident root-cause.

Problem management.

Very similar analytics technologies help those involved in problem management to arrive at root cause, or a probable cause, identification.

Change management.

IT operations analytics technologies will prove invaluable in performing a sanity check to determine the probability of success before any change is executed.

Configuration management.

IT operations analytics can detect discrepancies from desired configuration (drift) and reduce risk to environment stability.

For IT operations, managing the configuration of multiple environments still feels like a nuisance. Between applications, environments, and individual instances, mistakes and unauthorized changes happen, demanding that IT ops spend time managing configuration values.

IT ANALYTICS FOR IT OPERATIONS

IT operations need tools, like Evolven's IT Operations Analytics, that can translate abundant detailed configuration data and frequent changes into approachable information and actionable insights.

"IT analytics tools hold the promise of helping IT organizations better manage the technology that runs their business. Think of it as turning the concept of big data inward to make better decisions about the business technology services and the underlying infrastructure and applications." (Forrester - *Turn Big Data Inward With IT Analytics*)

With so much at stake, IT operations analytics can end these chronic change and configuration challenges. The enterprises that have implemented IT operations analytics solutions report on significant cuts in their response times, a reduction in number of incidents and downtime, and are enjoying smooth releases.

Without IT analytics, IT ops are challenged in how to approach frequent problems. They don't have any way to connect the impact that changes create to a reason, the change itself. IT analytics can provide insights to help IT Operations manage more effectively, tackling the complexity and dynamics of today's data centers

EFFECTIVE

Evolven identifies differences and applies advanced analytics to help IT teams to zoom in on critical differences.

BENEFITS: MORE UPTIME, SHORTER MTTR, MORE EFFICIENCY.

Evolgen's IT Operations Analytics collects detailed configuration information from everything from applications to hardware across environments, identifying differences and changes, by applying advanced analytics to help IT teams to zoom in on critical issues, so you can finally manage complex environments with confidence.

**effective solutions
that provide
immediate results.**

Jean-Pierre Garbani
VP, Principal Analyst
Forrester Research

VALIDATE CHANGES

In application deployments and software deployments, IT operations need to know that releases were implemented correctly, and avoid downtime. With Evolgen, IT teams can validate that individual changes, patches and releases are applied accurately and consistently to avoid performance and availability issues and unnecessary stabilization time.

KNOW WHAT CHANGED

With performance at risk from any disruptions to stability, IT operations need to know exactly what has changed. IT operations working with Evolgen can monitor and proactively detect any unauthorized changes and configuration drift, preventing downtime and achieve greater system stability, regardless of the amount of changes.

INVESTIGATE INCIDENT ROOT-CAUSE

When environment incidents occur, IT operations need to act fast and prevent incident proliferation. With Evolgen, IT teams can investigate incidents by analyzing if the changes or re-configurations are the root cause of the incidents - cutting mean-time-to- resolution (MTTR).

MAINTAIN ENVIRONMENT CONSISTENCY

It is a constant challenge for IT operations to keep servers and environments consistent. Evolgen IT Operations Analytics software easily compares servers and business service environments and reports on any inconsistencies and critical differences, to prevent issues from impacting performance.

THE EVOLVEN DIFFERENCE

ACTIONABLE INSIGHTS

Evolgen IT Operations Analytics applies powerful analytics to identify all critical changes, differences, inconsistencies and mis-configurations that threaten the stability of IT environments

There is a lot of data and analytics are required to identify those critical elements of the data those critical changes and differences that are important and can threaten the stability of the IT environment. Easy to understand dashboards, reports and alerts provide a single point of view to see all changes across end-to-end environments. So when you are in the incident investigation, you are in a war room situation, everyone has access to the same information. It is transparent. Everyone knows what's happened in the environment and can react to it.

BASED ON EVERYTHING THAT MATTERS

All this analysis is based on information that really matters. Evolgen gathers this information from the entire environment: applications and their underlying software infrastructure stack

Drilling down, this information gets all the granular details to the level of individual parameters, from any configuration source.

With no preliminary setup involved, this information is collected through dynamic crawling, in near real time, capturing all latest changes.

RESULTS IN MINUTES

The Evolgen technology delivers results very rapidly. IT operations today is extremely busy fighting the fires, implementing new products, addressing dynamic business needs. What they don't want is to bring on additional overhead. So the ability to deploy the technology really quickly, and get instant results, is essential for successful adoption of the technology by the IT operations.

Any little mis-configuration of a single parameter can possibly instigate a high impact incident, putting releases into long, drawn out stabilization periods that even result in Production outages. Evolgen provides the detailed visibility of what is being released down to the most granular level of the configuration parameter; validating that the integrity of the live environment is protected and that execution adheres to the release plan.

**Transforms change
and configuration
management.**

Roy Illsley
VP, Principal Analyst
Ovum

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Evolgen's IT Operations Analytics provides intelligent answers to key IT operations challenges: how to accelerate incident resolution, how to avoid harmful and risky changes, and how to assess and optimize IT operations performance.

Evolgen's new analytics approach to the chronic change & configuration challenges dramatically minimizes the risk of downtime and slashes incident investigation time.

Leading industry analysts have recognized Evolgen for "transforming change and configuration management" and as the "Industry's most adaptive change management analytics."

Evolgen was recently named a "2013 Cool Vendor in IT Operations Management" by Gartner, Inc.

Evolgen is a privately held company headquartered in the U.S. and has a development center in Israel. Evolgen's executive team and advisory board include world-renowned experts from the world of enterprise software. Evolgen is backed by leading venture capital firms: Pitango (www.pitango.com) and Index Ventures (www.indexventures.com).

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