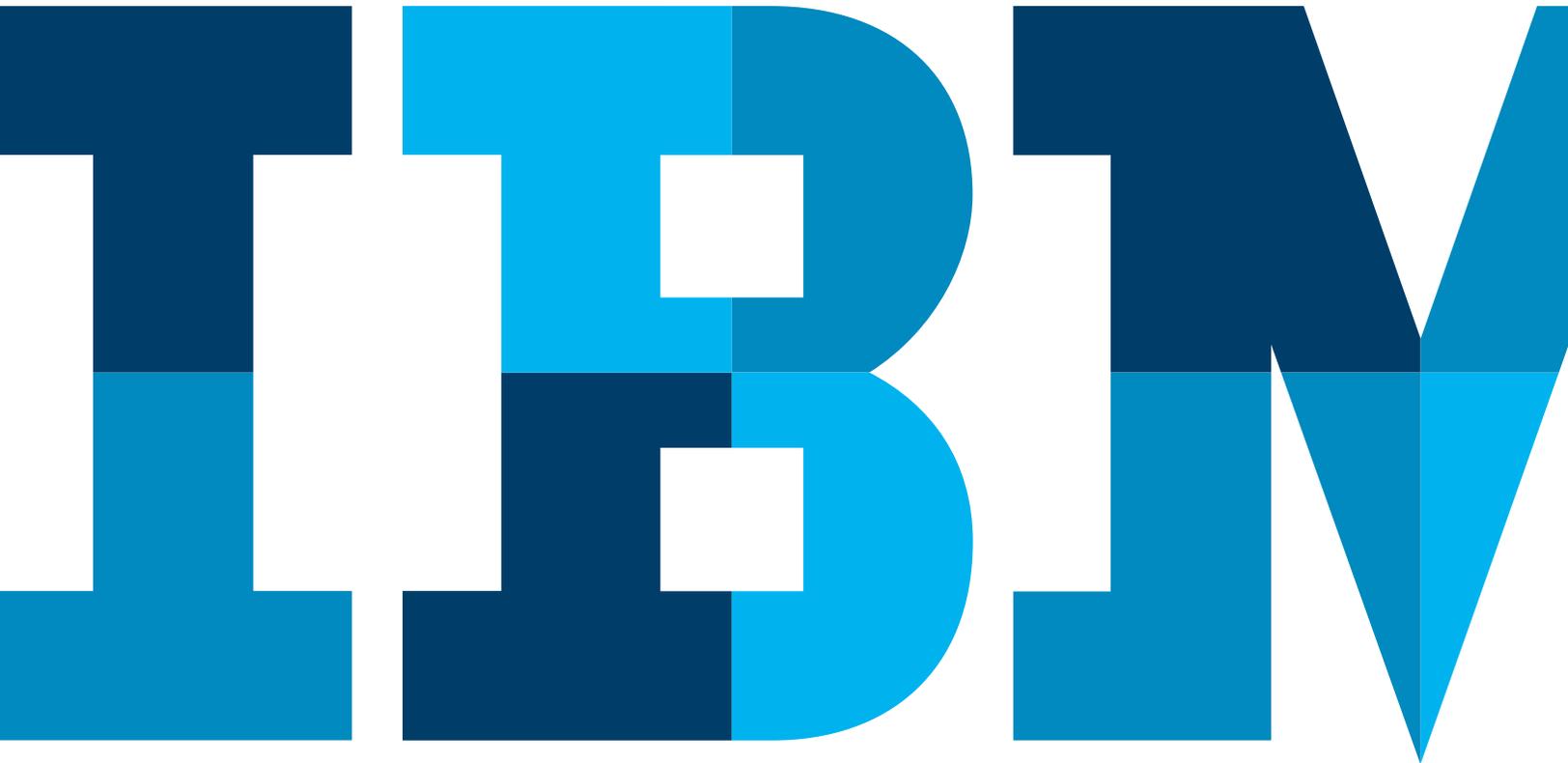# Take a step towards digital transformation: Start automating

IBM

Introduction

The innovative use of new technologies, like mobile, social business, cloud, big data and analytics, is distinguishing disruptors from "the disrupted" in today's highly competitive marketplace.

However, while digital transformation offers tremendous opportunities for enterprise growth, it also results in IT complexity—a recipe for integrated IT problems. Balancing "fire drills" to resolve those problems with the rapid delivery of quality IT services typically spreads IT teams thin.

To manage the fire drills more effectively and fast-track digital transformation, organizations are increasingly turning to automation. Enterprise IT automation employs robust analytics to automate issue diagnosis, resolution, preventive maintenance, change management and service requests across your complex hybrid cloud environment. Gartner predicts that by 2017, 75 percent of enterprises will have more than four diverse automation technologies within their IT management portfolios, up from less than 20 percent in 2014.[1]

However, most enterprises are still in an opportunistic state of IT automation, in which they're adopting automation capabilities in a sporadic and siloed way—with mediocre results. The first step in the automation maturity journey is to progress from this opportunistic state to a structured automation stage—in which automation tools mimic problem-resolution processes and help enterprises realize strategic business goals.

This paper discusses the many benefits of structured enterprise IT automation and the IT trends and challenges that are driving the need for automation. It also explains how IBM® Cloud Automation Services can optimize your IT availability and efficiency by assisting you through virtually every stage of automating incident response across your IT environment.

It's an IT jungle out there

According to an IBM survey, 85 percent of leading organizations report that hybrid cloud is accelerating digital transformation in their organization.[2] It's no wonder hybrid cloud is the new normal for enterprise IT. In fact, 7 in 10 surveyed IT decision makers reported they will always have a blend of traditional IT and cloud.[3]

But while hybrid cloud is enabling innovation, it's also causing additional challenges: complexity and risk. In addition to the latest technologies, typical IT environments consist of best-of-breed multivendor technologies and cross platform/product delivery and sourcing models.

Since these disparate technologies require integration with core systems, a glitch or breakdown in any of these systems can lead to outages and performance degradation.

According to the Ponemon Institute, the average cost of a data center outage rose from USD 690,204 in 2013 to USD 740,357 in 2016.[4] That's an expense no business can afford.

Moreover, to thrive in today's volatile marketplace, enterprises need to operate at the speed of business. A resilient IT environment is key to deploying products and services rapidly and staying a step ahead of the competition.

The challenges of managing modern IT

Today business resiliency and effective hybrid cloud management are key to preventing downtime. But for many enterprises, managing complex hybrid cloud environments is easier said than done. Less than 10 percent of surveyed organizations reported having the right skills, process and technology in place to manage a hybrid cloud environment.[5]

What's more, the combination of new technologies and the consumerization of IT have fundamentally changed the role of the IT organization. Delivering services to the enterprise rapidly and enabling innovation are the new roles of IT. But with mounting staffing costs and pressures to cut expenses wherever possible, it's difficult for IT organizations to balance the quality and responsiveness of IT services with costs and innovation. They may struggle to:

• Deliver innovation and agility to the enterprise, due to cost, shortages, skill gaps, and resource and process challenges
• Keep pace with business demands and deliver services rapidly
• Modernize IT processes and capitalize on new technologies

These challenges underscore the need for a smarter, more efficient way to manage IT.

Stop firefighting and start automating

Even the most resilient IT environments are bound to experience problems at some point. And when those problems do occur, the speed at which you resolve them can make all the difference to your bottom line, not to mention your reputation.

Consider this scenario of just how that can happen: You own a popular niche online retail store. Business is good. But one day at the peak of holiday shopping season, a software bug shuts your customer order application down. By the time a support technician resolves this fire drill, three hours have already passed. And during those three short hours, dozens of customers bought products from competitors instead of your company. Plus, you ticked off quite a few customers, and word about the outage spreads across social media. Ouch!

Now imagine having the same business interruption. Only now, you have automated support in place. So, when the issue occurs, "virtual engineers" automatically resolve it. No human intervention is required. And within minutes, your website is back up and running, as if nothing happened.

This is just what's possible with enterprise IT automation. Powered by analytics-based technology, enterprise IT automation employs virtual engineers that are programmed to immediately fix unreported IT problems. It also automates the generation of service requests for issues that it cannot resolve.

An industry-leading enterprise IT automation solution should provide robust support for all stages of the process—from event capturing and automation to measurement and improvement. And ideally, the solution should be operational on servers, databases, middleware, groupware, storage, networks, and security and business applications. To optimize agility, the solution should also include flexible deployment options on-premises or in the cloud.

Enterprise IT automation can be your "digital labor" to handle numerous IT tasks around the clock, thus helping you:

• Improve IT availability
• Provide faster more responsive IT services and support
• Optimize IT efficiency
• Ease compliance management

The transformative benefits of enterprise IT automation

Improve IT availability by automating IT fixes around the clock

The ability for "virtual engineers" to automatically detect and fix issues and continuously monitor the IT environment for potential problems is an invaluable shield against downtime. And unlike humans who may incorrectly diagnose issues, the pre-programmed virtual engineers can get the fix right the first time, and practically all the time.

And because enterprise IT automation technology works around the clock, it can tremendously improve your effectiveness and speed as well as your ability to prevent small issues from becoming major problems.

One of IBM's North American clients realized a 90 percent reduction in severity 1 outages after implementing IBM's enterprise IT automation solution.[6] This is because the automation technology resolved lower severity incidents— before they caused major disruptions.

In the event of an outage, enterprise IT automation can dramatically decrease mean time to resolution. After all, automation can eliminate many time-consuming steps in the incident-resolution process—such as identifying the right technician to fix the issue, getting the technician on the phone or onsite, explaining the issue to the specialist, diagnosing the problem, and actually resolving the problem. And even when virtual engineers can't fix the issue, the technology arms human technicians with diagnostic data captured in real time—giving them a tremendous leg up in resolving the issue faster.

In turn, you can give your customers and stakeholders what they expect: an always-on IT environment and business. And by preventing downtime, you can also help save thousands, even millions, in revenues and IT support expenses.

Optimize operational efficiency with help from virtual engineers

What business doesn't want to achieve more with less? That's just what enterprise IT automation technology makes possible. With automation technology, you can implement fixes to "keep the lights on" around the clock—without human intervention. And many issues can be resolved in minutes—as opposed to hours or days.

For example, one of our clients used to take almost two hours to address a "file system full" error. Now, through our enterprise IT automation solution, it takes just 10 minutes.[7] This client was also able to auto resolve 63 percent of incidents within just a few short months.[8]

Not only can enterprise IT automation turbo charge your productivity, but it can also help you make smarter use of your resources. Instead of assigning your "top-gun" technicians to manage severity 3 or 4 fire drills, they can concentrate on fixing complex high-severity issues. In fact, the IBM enterprise IT automation solution handles 40-45 percent of incoming problem tickets directly on average.[9]

Wouldn't you prefer for your IT team to apply their skills to strategic efforts that bring more value and innovation to the enterprise? They might prefer it, too. In fact, they may get a morale boost from more challenging and stimulating work—which can mean less personnel attrition and greater stability for your organization. Plus, with a more resilient environment, you can deliver services faster and more cost effectively for your enterprise.

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Ease compliance management with robust data capture and logging

When it comes to compliance management, data is your most valuable asset. Enterprise IT automation can help ease compliance management through its extensive audit logging capabilities. For example, the technology captures and logs practically all actions taken and activities performed. This level of detail exceeds practically any technology currently in place to track and monitor the behavior of human engineers. It can be a gold mine during a compliance audit and help you more easily collect the data needed to manage compliance on an ongoing basis.

Advance to structured automation with IBM Cloud Automation Services

IBM Cloud Automation Services provide robust automation capabilities to optimize the uptime, operational efficiency, and quality of your IT environment and services. The solution can be deployed via IBM Cloud or on-premises. It can also be applied to servers, storage, databases, network, middleware, groupware and applications.

The solution is powered by the IBM Dynamic Automation platform, which includes a library of IBM-developed re-usable automation components as well as standards-based integration and a robust event management engine. These features enable the platform to seamlessly connect with other monitoring and IT service management solutions. The solution:

- Automates diagnosis and resolution of incidents created by events from monitoring systems
- Streamlines service request fulfillment and change request implementation tasks by integrating with client IT service management (ITSM) systems
- Automates preventive maintenance tasks
- Escalates incidents to human engineers when it cannot resolve the issue automatically

Continually enhance the sophistication of your automation solution

Events	Event aggregation	Virtual engineer	Dispatch (unresolved)	Queues

Change requests

Learns and evolves

Best practices

Automation library

Client knowledge database

Continuous service improvement and analytics

Defect prevention process

Knowledge management database
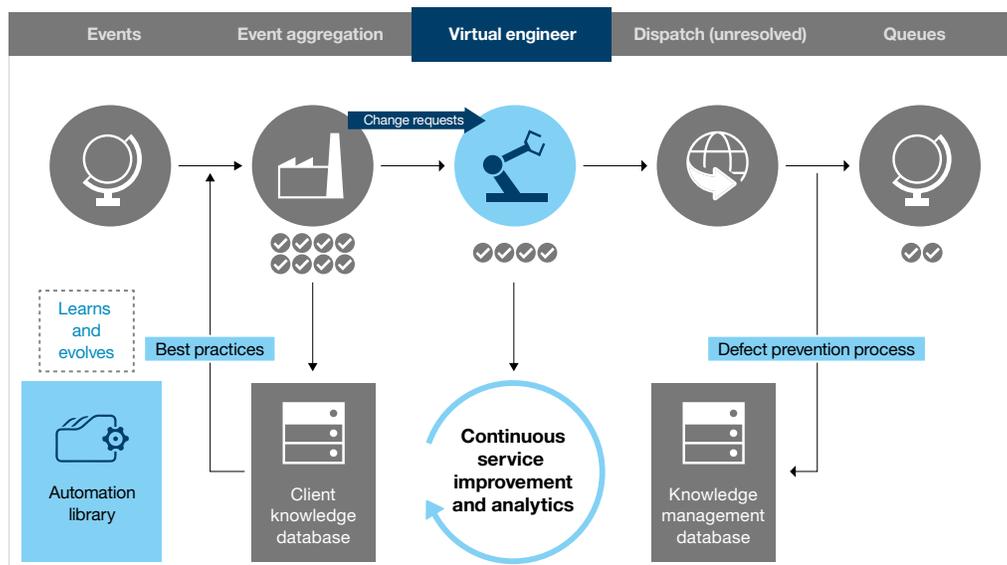
IBM Cloud Automation Services employ virtual engineers that interface with your ITSM tools to automate applicable use cases. They interface with your existing systems remotely, simulating how technicians would support these environments. Our automation solution can:

- Identify automation use cases
- Recognize improvement opportunity in deployed use cases
- Detect patterns in the problems automation is responding to
- Promote lessons learned from IBM's global deployments to specific clients

Implemented on more than 384,817 servers at 740 plus IBM clients, IBM Cloud Automation Services have automated the resolution of 71 percent of IT issues—helping clients realize a 25 percent boost in productivity within 6 months and over 50 percent productivity improvements over time.[11]

IBM Cloud Automation Services: Benefits at a glance

Technology

Robotic automation cloud
Helps reduce automation start-up expenses via a cloud platform

Lights out workforce
Makes an autonomous and virtual workforce available around the clock

Enterprise-grade platform
Built on time-tested, scalable and resilient technology that follows standard architecture principles, end-to-end data governance, security protocols and logical access management

Execution intelligence
Continuously verifies outcomes and applies a digital level of insight to human processing activity

Operations

Increased service efficiency
Enables faster response and remediation times, increases customer satisfaction, and helps reduce operational costs

Adaptive capacity management
Scales up or down on-demand, as per asymmetric workloads

Complete compliance
Fixes IT issues virtually no errors via pre-programming

Knowledge hub
Helps ease knowledge maintenance and provides input to process engineering through centralized knowledge hub

Begin your automation journey with IBM

Automation can be a transformative yet overwhelming effort. That's why IBM uses a holistic, multi-step journey to help clients progressively adopt maturing automation capabilities. Based on decades of experience deploying automation solutions for hundreds of thousands of clients, our process guides you through virtually every stage of the automation journey— helping you realize results more quickly. For more information about IBM Cloud Automation Services, please contact your IBM representative or visit **ibm.com**/us-en/marketplace/ ibm-cloud-automation-services.

Why IBM?

IBM has best-of-breed technologies and deep automation expertise from thousands of implementations in diverse client environments worldwide. We can integrate and optimize automation capabilities in your enterprise with the least amount of disruption while conserving your prior investments in tools and technologies. Moreover, we can seamlessly integrate insights from our analytic and cognitive engines, such as IBM Watson®, to continuously expand and improve automation in your environment.

References

1 Smarter with Gartner, Automation: The Next Frontier for IT, Susan Moore, May 18, 2016.

2 IBM, "Growing up hybrid: Accelerating digital transformation," February 2016.

3 Ibid.

4 Ponemon Institute, "Cost of Data Center Outages," sponsored by Vertiv, January 2016.

5 Based on IBM Global Business Services® internal research findings.

6 Based on IBM internal information.

7 Ibid.

8 Ibid.

9 Ibid.

10 Ibid.

11 Ibid.