

Automation Drives Business Transformation in the Multi-Cloud Era

What's Inside:

TABLE OF CONTENTS

- › Running and Reinventing
- › Cloud Migration
- › Modernization
- › Agility
- › Embedding Digital Business Automation
- › About Control-M
- › Additional Reading
- › BMC Blogs

Delivering innovative digital business services quickly and reliably requires the ability to integrate, orchestrate, and automate complex business application and file transfer workflows across legacy and modern environments so that digital services can be implemented when needed and run as intended.



Running and Reinventing

In a recent [IDG survey](#), an average of 89% of respondents across multiple industries indicated they have adopted or plan to adopt a digital-first strategy. Market research firm [IDC predicts](#) that digital transformation spending will reach \$1.7 trillion worldwide by the end of 2019.

For the most part, those pursuing digital transformation initiatives are seeking to create new products, services, and capabilities that will generate new revenue and better customer experiences. Delivering an easy-to-use, low-friction digital experience to customers and employees depends on a complex combination of infrastructure, data, and applications. As the complexity increases, so does the risk that something will go wrong because one system or process does not interact properly with another.

In a digital world, customer experience and nearly all new services are driven by modern application technology. But enterprises undergoing digital transformation are very often still maintaining legacy systems that are not going away anytime soon. For example, most large retailers and banks want to offer customer-facing mobile apps; they may have a DevOps team building the apps, but the data that needs to be accessed likely resides in an often-massive legacy system of record and it may take months of development effort to make it work.

Delivering innovative digital business services quickly and reliably requires the ability to integrate, orchestrate, and automate complex business application and file transfer workflows across legacy and modern environments so that digital services can be implemented when needed and run as intended. This may require multiple transitions including:

- Leveraging cloud infrastructure and services for scalability and flexibility

- Modernizing application and data architectures to reduce friction and smoothly leverage assets across environments
- Becoming more agile in developing, operationalizing, and updating software

It's important to note that these transitions are not necessarily sequential and very often are occurring concurrently. Because most companies are not 'born digital,' they must simultaneously 'run and reinvent' as they innovate and improve. This creates areas of friction for people, processes and technologies that can impede the journey. Automation can help companies solve these issues and accelerate digital transformation with agility, scalability, and stability.

Cloud Migration

Cloud is a key component in achieving scale, time to market, and flexibility. For many organizations, migration is at the early stages of a long journey for critical applications and data that requires automation and orchestration of complex workflows that are spanning across traditional on-premises environments and private or public clouds.

Early efforts at migration are not necessarily a guarantee of future success as IT organizations typically start with easy migrations. "Now you're getting to the workloads that require a lot of refactoring efforts, and they may not have exact platform analogs," [writes industry expert David Linthicum](#). "In addition, they often have strict security and compliance requirements, as well as other issues that make migration complex."

Key factors to successful migration include:

- Orchestrating applications and data to run on existing systems, during the transition to the cloud, and after they are fully implemented

“Traditionally, application workflow automation became top-of-mind when the software was getting ready to move from development into production. This was because you had two distinct groups involved—those who develop and those who operate—so there was a kind of chasm between them causing a big speed bump in time-to-value and a strain on collaboration.”

—Tim Eusterman,
Senior Director Solutions
Marketing at BMC

- Event-driven orchestration as well as supporting streaming
- Ensuring that an application or database running on a particular cloud today can be moved to another cloud at some point in the future

Businesses need assurance that new iterations of applications will transition from development into operations without a hitch and that existing processes don't get broken any time something new is implemented. Developers and operations teams shouldn't have to reconfigure an application every time they need to connect one system to another. To achieve this automation is essential.

Modernization

Existing application and data architectures create new challenges to deliver the agility and speed required by business today. Legacy applications likely were developed to exploit specific hardware and operating systems. Today, developers may be writing applications that span data center, cloud, and mobile environments, and must be adaptable for what comes tomorrow.

“If a company truly succeeds at digital transformation, its leaders understand that the business's future relies on interfacing with platforms and technologies that haven't even been invented yet,” [writes Michael Endler](#) of Google's Apogee team.

To harness such variability, organizations are on the path to a “software-defined everything” architectural model where application—storage, compute, networking—are abstracted from the underlying hardware. Software developers are taking advantage of these resources by utilizing newer technologies such as containers and microservices and pursuing continuous integration/continuous delivery (CI/CD) strategies to build and deliver new digital business products.

By adding the now instantly available server-less and ephemeral compute technologies available from cloud services vendors, new digital business products can be built

in a highly collaborative way, by federated teams that may be located around the world where specific talent is available. And while these modern technologies and processes increase speed and improve collaboration, the complexities of application and architecture modernization between the new and legacy applications is increasing.

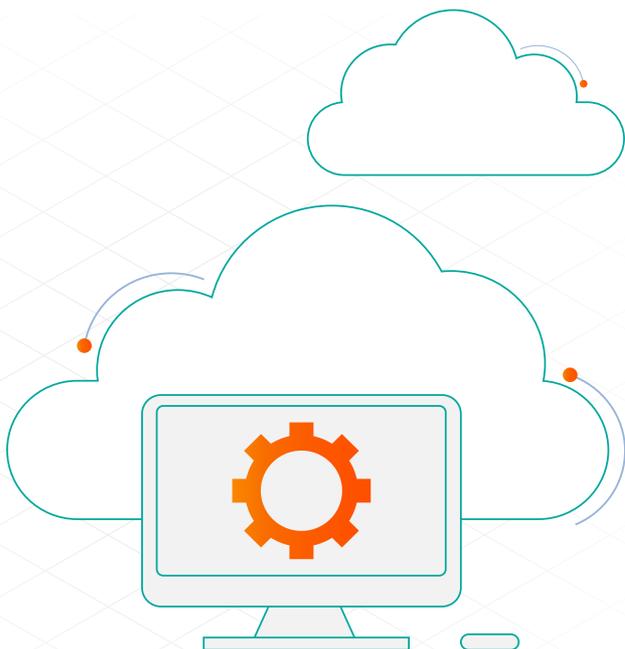
This highlights a critical challenge -- good governance. It's no surprise enterprise architects find themselves under tremendous pressure to enable these product development teams with a uniform set of processes and policies. The answer to this modernization challenge is automation. Rather than letting various development teams take an ad-hoc approach to CI/CD and/or application specific automation tools or using cloud service vendor automation tools that are platform specific, companies must aim to implement automation that creates good governance and increases speed of delivery and quality in production—regardless of the target computing environment today or tomorrow.

Agility

As organizations strive to develop and update applications faster to gain digital business agility, they're adopting DevOps practices and taking advantage of an explosion of automation tools for every phase of the software development lifecycle.

“Traditionally, application workflow automation became top-of-mind when the software was getting ready to move from development into production,” says Tim Eusterman, Senior Director Solutions Marketing at BMC. “This was because you had two distinct groups involved—those who develop and those who operate—so there was a kind of chasm between them causing a big speed bump in time-to-value and a strain on collaboration.”

To improve speed, agility and application quality, companies rapidly adopted the DevOps approach breaking down these organizational divisions with much better collaboration and a shared responsibility for success. With many of the organization issues in hand, the focus for DevOps teams then



shifts to getting the most productivity and best application quality from the many available SDLC automation tools.

To fulfill the goals of unified DevOps and automation tooling approach, organizations need to:

- Enable teams to build, test, and deploy applications in both traditional and cloud environments using their favorite CI/CD toolchain—then integrate, automate and orchestrate in production from a single platform
- Utilize programmatic interfaces that enable developers and DevOps engineers to create and test application workflows alongside the business logic by applying an approach known as Jobs-as-Code, so applications are fully instrumented and ready for production, having gone through the full CI/CD automation process
- Ensure that all application workload development, scheduling, management, and integration can run across all applicable environments, including cloud

“DevOps teams have done a great job improving application delivery speed and quality with CI/CD automation,” Eusterman says. “The last major hurdle is to get job instrumentation included up front in the code development process so when you deploy you’ve tested and automated the whole application, not just the business logic.”

Embedding Digital Business Automation

Business application integration, orchestration, and automation in the cloud is a critical factor in the success of digital business.

Modern application automation and orchestration is essential to ensure that companies can benefit from the economies of scale offered by cloud platforms and increase speed and agility to meet business demands. Key attributes to look for include:

- A digital business application integration, automation, and orchestration platform, built for modern technologies and DevOps processes, yet able to address legacy application and infrastructures with ease
- Built-in scheduling capabilities that can run any application in any cloud and on-premises, with any database or data warehouse technology for worry-free, on-time, every-time production

“Regardless of how you build, test, and run applications, it’s even more critical in the cloud to optimize the available cost model,” says Eusterman. “Our customers around the world rely on Control-M to deliver digital business applications faster with higher quality by integrating, automating and orchestrating their modern applications and data across on-premise and multi-cloud environments.”

About Control-M

Control-M, BMC’s Digital Business Automation platform, provides the scheduling and tools capabilities to automate complex business application and file transfer workloads across multi-vendor public clouds, private clouds, hybrid clouds and legacy systems. To find out more about employing enterprise-class workload automation for complete lifecycle management in a digital first environment go to www.bmc.com/control-m.



ADDITIONAL READING

Leveraging Control-M to Exploit Cloud Technology and DevOps Methodology

For continued success, enterprises need an agile IT infrastructure that adapts effortlessly to the changing demands of the business. That's why so many enterprises are embracing the cloud. Modern multi-cloud environments, which include private, public, and hybrid clouds, give enterprises the flexibility to scale up or down as needed, deliver services at a faster pace, offer ubiquitous, anytime access, and require fewer resources to manage.

The transition to cloud involves not only moving legacy applications to the cloud environment, but also developing and deploying new applications that tap the power of new cloud services. In many cases, IT organizations are turning to new DevOps practices to accelerate the delivery of these applications.

Many business applications require integration and orchestration, which historically have been referred to as "batch." These services present a threefold challenge in the transition to the cloud:

- Migration of legacy applications to cloud environments often necessitates the rework of hundreds, if not thousands, of workflows to meet the scheduling requirements of the cloud environment.
- Application automation workflows are a logical part of the complete application that delivers a business function. However, they frequently are not managed with the same tools and processes applied to other components, such as source code and configuration definitions. Consequently, IT can't take advantage of DevOps tools to develop, test, and deploy workflows for new applications that are developed specifically for the cloud. That seriously hampers agility.
- IT must manage workflows in both the legacy environment and the new multi-cloud environment during, and in many cases, after the transition. Control-M addresses all three aspects of the challenge by enabling IT to develop, test, deploy, and manage jobs in both traditional and cloud environments using their favorite DevOps toolchain—all from a single platform. BMC customers are extending their use of Control-M to facilitate the transition from on-premises to cloud technology. This paper provides an overview of Control-M and describes how three BMC customers are leveraging the solution's capabilities to facilitate their move to the cloud.

[CONTINUE READING >](#)

DevOps in the Cloud

In today's fast-paced, digital-first business environment, DevOps is rapidly becoming as mainstream as the Cloud. Yet many companies are still grappling with questions around how to implement, foster and benefit from a DevOps culture—particularly in cloud environments. This year, I've had the opportunity to attend DevOps events around the world and speak with many IT pros about the challenges they are facing.

Here are some of the most common questions asked:

What is DevOps, and how does it relate to the Cloud? I believe it's important to state that DevOps is not software, hardware or anything tangible that you can purchase. It is a cultural approach to how software is developed, tested, promoted and operated in a production environment. DevOps also includes collecting feedback from each stage of the delivery lifecycle (especially production) and using that input to infuse the next cycle of development and delivery. As such, DevOps is not limited to cloud, on-premises, or any other set of environmental attributes. Rather, it is focused on how people communicate and collaborate in the process of creating new business services underpinned by software.

Having said that, there certainly are environmental attributes—like cloud technology—that help:

- Make DevOps easier to implement
- Fulfill the promise of multi-disciplinary teams working collaboratively to accelerate delivery while also improving software quality.
- Give all participants a greater sense of accomplishment and contribution.

[CONTINUE READING >](#)

Simplifying Big Data in a Multi-Cloud World with Streamlined Workflows

Big data projects often entail moving data between multiple cloud and legacy on-premise environments. A typical scenario involves moving data from a cloud-based source to a cloud-based normalization application, to an on-premise system for consolidation with other data, and then through various cloud and on-premise applications that analyze the data. Processing and analysis turn the disparate data into business insights delivered through dashboards, reports, and data warehouses—often using cloud-based apps. The workflows that take data from ingestion to delivery are highly complex and have numerous dependencies along the way. Speed, reliability, and scalability are crucial. So, although data scientists and engineers may do things manually during proof of concept, manual processes don't scale.

Automation and Orchestration Simplify Big Data in the Cloud

To deal with the complexity, you need industrial-strength workload automation and business application orchestration capabilities. Many tools can orchestrate big data workflows. Some of them—such as Oozie or tools bundled with public cloud services such as Amazon Web Services (AWS) and Microsoft Azure—are “free.” But most of those tools are platform-specific and limited in functionality. So, you have to cobble together multiple tools to orchestrate complex workflows across multi-cloud and traditional environments. That's when free

becomes expensive. Not only are tool integrations costly, they can also drag down end-to-end process reliability and your productivity. Big data drives important business decisions. You need a reliable, fail-safe way to automate and orchestrate every step of big data processing across all involved environments.

[CONTINUE READING >](#)

Customer Story: Amadeus

Amadeus, a global leader in the travel industry, provides IT services to companies around the world, enabling them to handle bookings, flight management, data distribution, billing, and more. As travel searches and booking activities have moved to the internet, Amadeus faces the challenge of making its services more scalable and reliable to support higher traffic, while reducing operating costs. Amadeus is moving to a private cloud infrastructure to support this industry shift and must transition more than 180 applications—which rely on a complex set of batch workloads and file transfers—to this new technology stack without affecting the stringent service level agreements (SLAs) for these workloads.

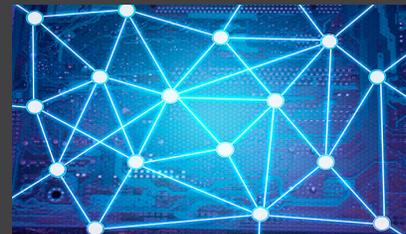
[CONTINUE READING >](#)

BMC Blogs



How Malwarebytes uses big data and DevOps to keep millions of computers protected around the world

[CONTINUE READING >](#)



How PayPal Supercharges App Development with DevOps and Control-M

[CONTINUE READING >](#)