



SOLUTION BRIEF



How Can Modern Toolsets, Agile and DevSecOps Increase Your Innovation Velocity in Delivering New Mainframe Services to Your Customers?

CA solutions support DevSecOps on the mainframe, empowering development teams to work across siloes and use a common set of cross-enterprise tools across the software delivery lifecycle, from plan, build, test to deploy, operate and secure. This drives improved software quality, faster time to market and increased developer productivity.

Executive Summary

Challenge

Mainframes may be legacy, but they still run a lot of business. If you are like most, your team takes four to eight weeks for small mainframe updates, and you may be concerned that 50 percent of your people may be retiring in the next five years. The vendor community has not sat still, and agile and DevSecOps are available in mainframe contexts.

Opportunity

The opportunity is to make the mainframe no different than any other platform. This gives you the most speed to market, cost savings and opportunity to cross-train your team. CA solutions give you familiar toolsets, mobile to mainframe, so that mainframe is managed like any another platform. This allows you to plan, build, test, deploy, operate and secure applications and services across your hybrid IT environment.

Benefits

Customers adopt CA solutions to improve application quality and release frequency and have achieved significant results:

- HSBC built and automated a continuous integration and continuous delivery pipeline to drive 2,000 deployments per month with less than a 2 percent incident rate.
- A telecommunications company achieved 150 deployments to production per month with zero back-outs.

SECTION – 1

The Need for Change

Mainframes may be legacy, but they still run a lot of business. In fact, they store 80 percent of the world's transactional data and are run at 92 of the top 100 banks and 23 of the 25 largest airlines. It's estimated that there are 1.3 million CICS transactions processed per second,² and an estimated \$3 trillion in daily commerce flows through COBOL systems.³

With so much in play, businesses run a great risk when practices for maintaining and developing on the mainframe remain largely the same despite the rest of the organization undergoing significant change to keep pace with the demands set by digital transformation. When developers versed in COBOL and Java®, database administrators versed in IBM Db2® and system programmers versed in mainframe are then integrated into cross-platform hybrid teams, a divide in culture and best practices emerges, greatly inhibiting the collaboration needed to sustain a competitive level of innovation velocity.

In fact, customers will no longer tolerate a perceived lack of responsiveness that stems from small changes on mainframe taking four to eight weeks to complete. With up to 50 percent of mainframe expertise due to retire in the next five years, businesses can ill afford any delays in removing the barriers to innovation velocity.

Best Practices

FIGURE 1:
Best Practices to
Increase Innovation
Velocity



Common Barriers

- Large code monoliths and poorly documented code
- Resistance to change and difficulty finding the resources skilled in mainframe
- Long lead times to deliver basic software changes, provision test environments, etc.
- Siloed mainframe teams with outdated tools that aren't cloud-friendly or integrated
- Visibility for managers who have cross-enterprise needs into the mainframe area
- Manual processes such as testing and scripting and incomplete test cases
- High costs associated with mainframe capacity and resources

Thankfully, the vendor community has not sat still. By pioneering its own digital transformation, CA Technologies has continually refined its practices on mainframe, delivering higher quality and more frequent product releases. Building on this success and an ongoing commitment to customer ideation, CA Technologies provides a cross-platform DevSecOps solution that improves innovation velocity through greater business agility, process automation and accessibility to proven, industry-standard tooling—enabling customers to deliver mission-essential services at the speed of business.

SECTION - 2

Toward a Modern Agile and DevSecOps Environment

CA solutions facilitate a consistent cross-platform DevSecOps experience, from mobile to mainframe, enabling CIOs to manage the mainframe like any other platform.

FIGURE 2:
High-Functioning
Software Delivery
Teams Work
Together



CA Technologies helps enterprise teams apply the same skillset toward multi-modal development, test, delivery, security and operations. Top-rated by customers, CA solutions fully integrate with popular open source tools such as Git, Jenkins and more.

FIGURE 3:
CA DevSecOps for
Mainframe Solution

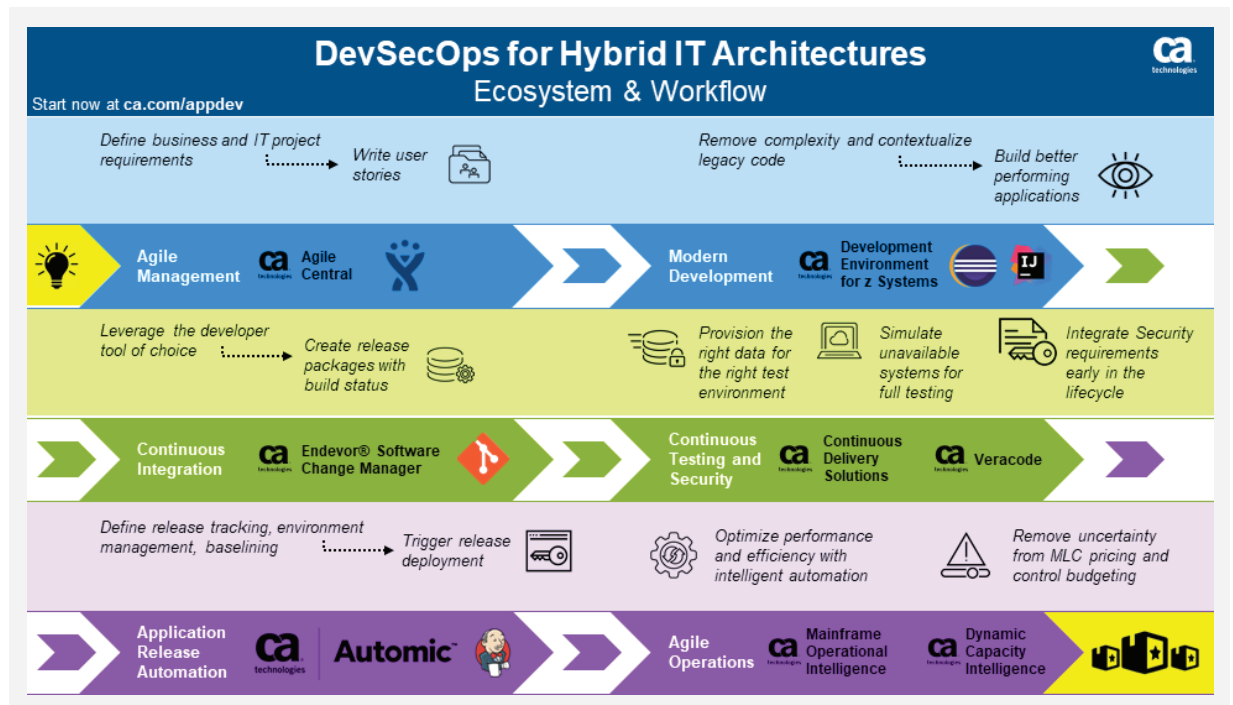
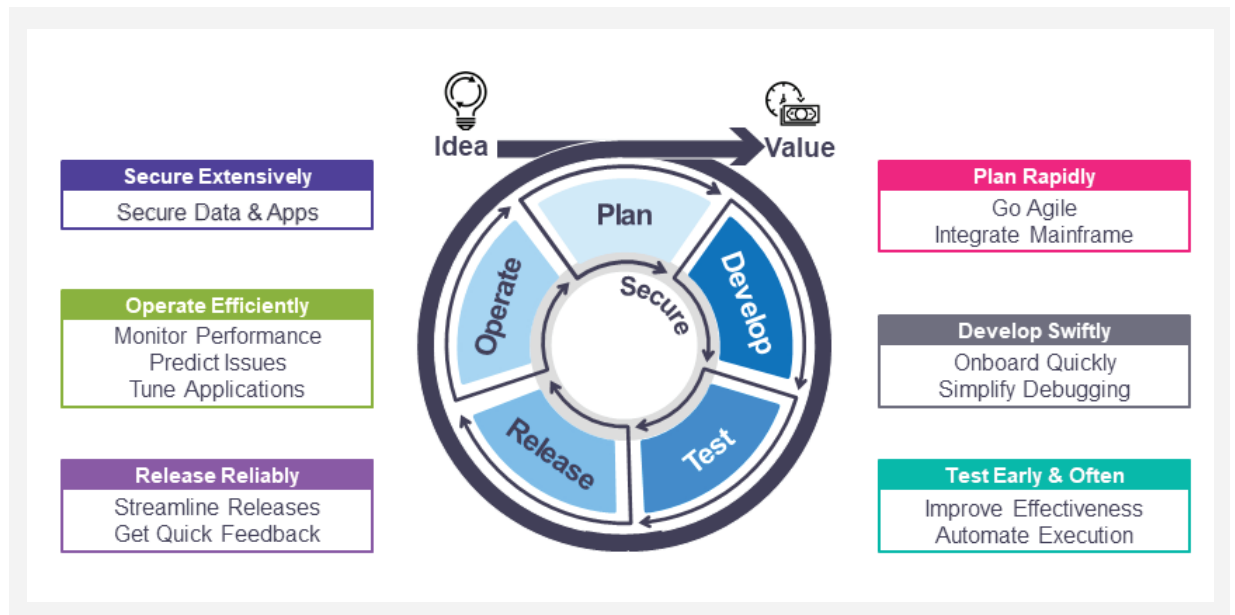


FIGURE 4:
CA DevSecOps for
Mainframe Solution
Functionality



Plan

- **Go agile:** Get up to speed with agile methodology using SAFe methodology training and integrate your agile requirements from open or proprietary tools into your mainframe tool of choice, such as [CA Application Lifecycle Conductor](#) and [CA Endeavor® Software Change Manager](#).
- **Integrate mainframe:** Managers can customize dashboards for one view of all software artifacts, their relationships and current status mobile-to-mainframe. With [CA Application Lifecycle Conductor](#), managers can improve governance, traceability and transparency of their mainframe code base.

Develop

- **Onboard quickly:** CA gives you options beyond the green screen to onboard new talent, including [CA Development Environment for z Systems](#), a modern IDE with Eclipse plug-ins that integrate into testing tools. There are also innovations being previewed now for building [a self-service, modern development experience](#) in the cloud that will enable support for access to [CA Endeavor SCM](#) via Git and more.
- **Simplify debugging:** Visual debugging from [CA Development Environment for z Systems](#) allows developers to improve the speed and accuracy of their code in a test-first environment.

“I think the Endeavor agile methodology is awesome. It’s so nice to be able to provide input while the features are being designed. This way we know what the feature will look like before it’s delivered.”

– DevOps engineer, Global 500 health care company
Source: TechValidate, TVID: F80-81B-FCD

Test

- **Improve effectiveness:** CA solutions facilitate higher test effectiveness while also improving efficiency and costs. Quickly provision virtual test environments that emulate production for parallel development and testing with [CA Service Virtualization](#). Streamline test file setup and leverage data masking and synthetic test data generation that facilitates GDPR compliance using [CA Test Data Manager](#) and [CA File Master™ Plus](#).
- **Automate execution:** CA enables you to fully automate each phase of end-to-end testing. Use [CA Agile Requirements Designer](#) to create and update an optimal set of test cases and [CA Application Lifecycle Conductor](#) to then catalog and provision your test assets, including test cases, scripts, batch jobs, configurations and data, as well as virtual/real services. Paired with your preferred application release automation solution, such as [CA Automic Release Automation](#), CA Application Lifecycle Conductor will also integrate and automate test scripts into the delivery pipeline and trace test assets to completion to monitor for issues. Unit tests can also be automated into your developer tools through [CA Development Environment for z Systems](#).

Deploy

- **Streamline releases:** Enable zero-touch, sequential or parallel deployments, mobile to mainframe, for faster, more predictive delivery with [CA Automic Release Automation 12.1](#).
- **Get quick feedback:** Eliminate unnecessary wait times by using interactive and customizable dashboards in [CA Application Lifecycle Conductor](#) to get notifications of outages and issues across toolsets and customize continuous feedback loops that inform on deployment reliability and velocity.

Operate

- **Monitor performance and predict issues:** With [CA Mainframe Operational Intelligence](#), performance issues can be predicted earlier and proactively corrected prior to impacting the business. This is a result of machine learning algorithms, which learn from numerous data sources including SMF log records, and CA solutions such as [CA SYSVIEW® Performance Management](#), [CA NetMaster® Network Management for TCP/IP](#) and [CA Vantage™ Storage Resource Manager](#), which help to improve MTTR and SLA adherence. Integration with best-in-breed automation solutions such as [CA OPS/MVS® Event Management and Automation](#) and CA Automic One Automation Platform enables automated resolution of issues for optimum performance and resource efficiency. Traditional single-pane-of-glass monitoring solutions such as [CA Unified Infrastructure Management](#) and [CA Cross-Enterprise Application Performance Management](#) also allow a broader set of IT staff to manage your mobile to mainframe services.
- **Tune applications:** Avoid data hogs and slow-running applications with [CA Mainframe Application Tuner](#), which helps you optimize performance and save costs by facilitating root-cause analysis down to the very line of application code.

Secure

- **Secure data and apps:** Move toward a security mindset and posture throughout your SDLC. Implement code scanning to avoid security issues with CA Technologies | Veracode. Manage your privileged users and their access with [CA Trusted Access Manager for Z](#). Mask test data and identify sensitive data to avoid GDPR regulation compliance issues with [CA Test Data Manager](#).

SECTION – 3

Success Stories

Implementing a DevSecOps and agile approach significantly advances your digital transformation journey, improving new business growth by up to 63 percent and operational efficiency by up to 41 percent⁴.

HSBC achieves over 2,000 deployments per month using CA Endeavor® Software Change Manager

Situation

Named 'World's Best Bank' by Euromoney in 2017, HSBC is one of the largest global banking and financial services organizations – with 6,000 mainframe developers across the globe that manage six million artifacts and 750 thousand changes per year in delivering new services to customers.

Action

Configured CA Endeavor® Software Change Manager to build and automate a continuous integration and continuous delivery pipeline, improving the quality and frequency of mainframe application releases while also maintaining full compliance posture.

Result

Achieved a 100 percent SAFe agile methodology in transitioning to more frequent, monthly releases:

CA Technologies Increases Customer Satisfaction and Repeat Business by Scaling Agile for Mainframe Development

Situation

CA Technologies needed to accelerate development of new releases in key product areas while maintaining its near-perfect quality in order to maintain leadership in an increasingly competitive market.

Action

The Mainframe Business Unit partnered with internal agile transformation consultants to move approximately 90 Scrum teams into SAFe® agile release trains. [CA Agile Central](#) increases visibility to help advance outcomes of key strategic work.

Result

Achieved a 100 percent SAFe agile methodology in transitioning to more frequent, monthly releases:

- Zero net new defects over 56 releases
- 44 percent backlog reduction
- Increased customer satisfaction

[Learn more >](#)

Fortune 100 Telecommunications Case Study

Situation

Update billing systems on a continuous basis to match transaction volume from millions of customers while also ensuring service quality and compliance posture.

Action

Configured CA Project & Portfolio Management and CA Endeavor Software Change Manager toward continuous automated deployments.

Result

Massively increased release frequency and quality:

- 500 development package promotes per month
- 250 test package promotes per month
- 150 production package deploys per month
- Zero production back-outs

For more information, please visit ca.com/appdev

Connect with CA Technologies



CA Technologies (NASDAQ: CA) provides IT management solutions that help customers manage and secure complex IT environments to support agile business services. Organizations leverage CA Technologies software and SaaS solutions to accelerate innovation, transform infrastructure and secure data and identities, from the data center to the cloud. CA Technologies is committed to ensuring our customers achieve their desired outcomes and expected business value through the use of our technology. To learn more about how CA Technologies can help you implement Agile Development and DevSecOps, visit ca.com/appdev.

1 Hans Deketele, "IBM z Systems® Benelux Study Tour unveils benefits of the modern mainframe," March 29, 2017, www.ibm.com/blogs/systems/nl-nl/2017/03/29/ibm-z-systems-study-tour-unveils-benefits-modern-mainframe/

2 IBM estimates based on real client usage.

3 Anna Irrera, "Banks scramble to fix old systems as IT 'cowboys' ride into sunset," April 10, 2017, <https://uk.reuters.com/article/uk-usa-banks-cobol/banks-scramble-to-fix-old-systems-as-it-cowboys-ride-into-sunset-idUKKBN17C0DZ>

4 Coleman Parkes Research, "Accelerating Velocity and Customer Value with Agile and DevOps," 2017, www.ca.com/us/modern-software-factory/content/accelerating-velocity-and-customer-value-with-agile-and-devops.html

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