

Mainframe DevOps

Modernize-In-Place with the Best of Both Worlds

Highlights

- Accelerate velocity with unified mainframe and distributed DevOps workflows.
- Offer DevOps teams freedom to use their tools of choice.
- Leverage all the benefits of open source tools and frameworks (such as, Zowe, Visual Studio Code, Git, Jenkins, and SonarQube).
- Innovate with the confidence of enterprise-grade support from a trusted partner.
- Minimize disruption by modernizing-in-place (Eliminate multi-year lift-and-shift).
- Attract new talent and expand skills base.

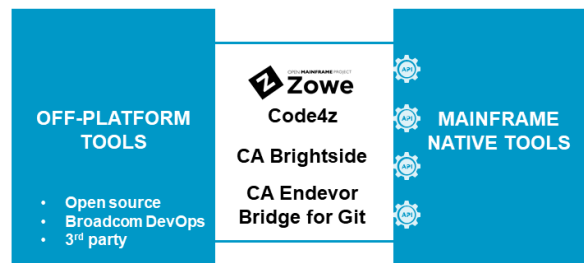
Overview

Mainframe development and operations teams face many challenges while addressing business demands for agility, reduced cycle times, and seamless cross-platform applications—compounded by a shortage of mainframe skills.

The path to DevOps success begins with empowering teams with purpose-built tooling that drives high levels of automation while ensuring quality. Rather than limited options through isolated, one-off integrations, we recommend an open-first approach.

Broadcom’s Mainframe DevOps solution offers freedom and flexibility by opening the mainframe to a new world of popular, off-platform DevOps tools without disrupting existing workflows. This freedom enables **modernization-in-place**, avoiding risky lift-and-shift migrations. Combining mainframe-native tools with off-platform ones offers the best of both worlds (Figure 1).

Figure 1: On-Platform, Off-Platform, and Enabling Tools



Best of Both Worlds

- ✓ Unconstrained choice
- ✓ Disruption minimized
- ✓ Investments protected
- ✓ Exciting career path

Business Opportunity

Businesses increasingly turn to software to differentiate their customer experience. Over time, relentless competitive pressures have resulted in a modern DevOps approach, built on a continuous delivery paradigm, and fueled by small delivery increments and end-to-end automation. As these businesses apply DevOps to their mainframe environments, they face daunting challenges developing one-off integrations with DevOps tools while also struggling with employee recruitment.

Through Broadcom's open approach to DevOps, mainframe teams can adopt the same tools and practices that drive modern DevOps without disrupting the ones that have sustained the platform for over 50 years. Broadcom delivered the first DevOps platform over 25 years ago, long before the term existed—build and deploy capabilities coupled with software change management with CA Endeavor®. Customers can leverage these capabilities to manage on-platform DevOps. By embracing open, companies can interact with the mainframe like other IT platforms and establish a unified cross-platform DevOps approach, as described in later sections.

Visual Studio Code, with 8.5 million users and Microsoft backing, continues to skyrocket in popularity while Eclipse fades.

Solution Overview

Broadcom is leading the market by offering an open-first approach to mainframe DevOps, built on decades of market leadership and groundbreaking, award-winning contributions to the Zowe open source community. Zowe, an open source industry initiative hosted by the Linux Foundation's Open Mainframe Project, is a modern set of capabilities that bridges the mainframe to popular off-platform tooling and automation. By contributing to Zowe and other open source projects, Broadcom addresses the needs of the entire mainframe community.

Our strategy is built on three pillars:

- **Open-first** – Allow unconstrained freedom of choice.
 - Mainframe teams have historically been limited in choice by a small number of vendors offering proprietary, mainframe-native tools. Broadcom removes these constraints, allowing teams to choose the tools and practices best-suited to meet the demands. No vendor lock-in.
 - Once the door is opened, countless free-to-use and purpose-built open source tools become available. Git, Jenkins, SonarQube, and Visual Studio Code are well-known examples. This availability also includes scripting tools and task runners (npm scripts, Python, and nodeJS), infrastructure automation (Ansible and SaltStack), test automation (Mocha and Jmeter), and so on.
- **Frictionless** – Deliver seamless interoperability between mainframe-native and off-platform tooling.
 - Broadcom has added a comprehensive set of extensions and APIs that allow mainframe tools to be easily automated using the popular off-platform tools mentioned previously.
 - New tools are always emerging, eclipsing older ones in the fast-moving DevOps world. Frictionless adoption and interoperability, while continuing to enforce mainframe security, is critical.

Solution Overview (con't)

- **Enterprise-grade** – Deliver enterprise-grade options for key enabling technologies.
 - CA Brightside is an award-winning offering from Broadcom that delivers enterprise-grade support for Zowe and Code4z. It also provides innovative extensions for corporate needs.
 - CA Endeavor Bridge for Git enables mainframe teams to use enterprise Git solutions like GitHub, GitLab, and Atlassian BitBucket without lift-and-shift risk.

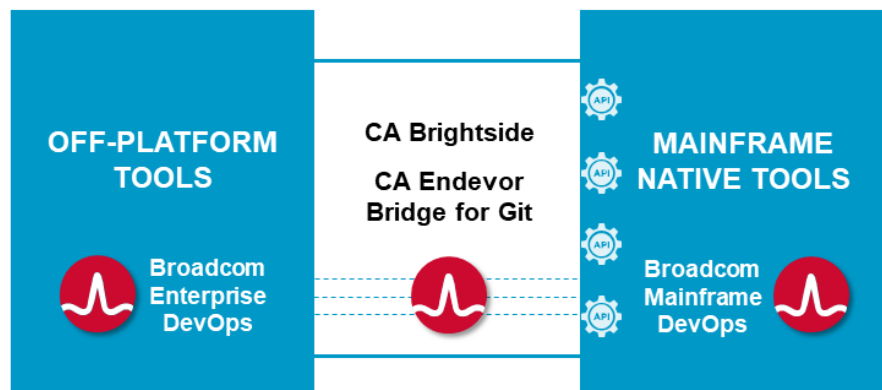
Cross-Platform DevOps

Combining the best of mainframe-native and off-platform tools enables teams to support applications that extend beyond the mainframe. Broadcom offers enterprise DevOps tools with native integrations powered by open interfaces to our mainframe-native portfolio for end-to-end speed and quality (Figure 2). Some examples:

- Broadcom's Continuous Testing solution offers test data that is shared across platforms, service virtualization that simulates unavailable systems and performance testing that is end-to-end.
- Broadcom's Automation solution orchestrates deployments across platforms, avoiding delays or outages, which is even more powerful when combined with CA OPS/MVS®, a leading event management and automation tool.
- Broadcom's DX Application Performance Management solution ensures flawless user experiences with analytics-driven insights, which is even more powerful when combined with CA SYSVIEW®, a powerful mainframe performance management tool.

CA Brightside named most innovative DevOps solution by a panel of DevOps industry experts.

Figure 2: Broadcom Commercial Offerings



Benefits

Broadcom's Mainframe DevOps solution empowers teams to decide how best to meet the needs of the business.

For some, this may mean having a traditional programmer working side-by-side with a next-generation programmer on the same codebase, each using their tools of choice. For others, this may mean improving code quality by automating code scans and tests with a CI/CD pipeline. For others still, it may mean using the powerful editing and debugging capabilities of Visual Studio Code with a mainframe code repository like CA Endeavor.

Regardless of the path taken, Broadcom's Mainframe DevOps solution offers several benefits:

- **Accelerate software delivery with automation**
 - Broadcom Mainframe DevOps accelerates software delivery by opening up a universe of powerful off-platform automation tools designed around the continuous delivery paradigm.
 - For many teams, the selection of tools begins with enterprise DevOps standards. Rather than vendor-defined, teams can choose tools common to the rest of the organization.
- **Expand the next-generation talent pool**
 - The search for talent is no longer confined to candidates with mainframe skills. For example, rather than searching only for ISPF/TSO or Eclipse developers, opening the mainframe to Visual Studio Code expands the pool to 8.5 million developers.
- **Discover new levels of productivity**
 - Developer talent is invaluable. Free them from manual and error-prone tasks by providing them with more choice and more automation.
- **Accelerate onboarding and reassignment**
 - Our solution enables the use of familiar development tools such as VS Code with COBOL. This normalizes the ability to work across mainframe and distributed platforms.
- **Increase code quality**
 - Broadcom's test automation, enabled by modern testing frameworks like Jest and Mocha, results in high quality code regardless of the scale of the changes. This helps to overcome test neglect associated with manually intensive testing.
- **Drive transformation with reduced risk**
 - Broadcom partners with customers in enterprise transformation vision, planning, and execution.

Next Steps

To learn more, visit: mainframe.broadcom.com/devops

About Broadcom Mainframe Division

Broadcom's Mainframe Division continues to drive the next horizon of open, cross-platform, enterprise innovation. We specialize in DevOps, Security, AIOps, and Infrastructure software solutions that allow customers to embrace open tools and technologies, make Mainframe an integral part of their cloud, and enable innovation that drives business forward. We are committed to forging deep relationships with our clients at all levels. This goes beyond products and technology to partner in creative ways that support customer success.