Market Guide for Value Stream Delivery Platforms

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Initiatives: Software Engineering Technologies; Applications and Software Engineering Leaders; Infrastructure, Operations and Cloud Management; Software Engineering Strategies

Organizations aim to streamline their software delivery workflows as they adopt cloud, agile and DevOps for digital transformation. Software engineering leaders should implement VSDPs to enhance developer experience and integrate security and compliance for rapid delivery of customer value.

Overview

Key Findings

- Operating a DevOps toolchain is not a one-time exercise. Rather, it requires ongoing resources, skills, knowledge, training, and support for operating and maintaining the tools.

- Product teams struggle to reduce the time to market and deliver faster customer value due to too many handoffs and the resulting friction, siloed visibility, and broken feedback loops.

- Platform teams struggle to scale self-service, enforce policy and implement security controls for development teams as organizations transition to hybrid work styles.

- The need for consistency, repeatability and reusability requires teams to adopt a declarative approach to building delivery pipelines.

Recommendations

Software engineering leaders responsible for agile and DevOps initiatives should:

- Scale DevOps initiatives by adopting value stream delivery platforms (VSDPs) that reduce management complexity and improve developer experience across multiple product teams.
- Improve the flow of work by streamlining the application delivery life cycle with VSDPs that provide consistent visibility, traceability, auditability, security and observability across the DevOps pipeline.

- Make it easy to support distributed development teams by adopting cloud-based VSDPs and using their integration and collaboration capabilities for code reviews, code sharing and issue tracking.

- Improve consistency and efficiency in software delivery workflows by using declarative pipeline capabilities in VSDPs — pipelines as code, infrastructure as code and policy as code.

**Strategic Planning Assumption**

By 2024, 60% of organizations will have switched from multiple point solutions to value stream delivery platforms to streamline application delivery, up from 20% in 2021.

**Market Definition**

Value stream delivery platforms provide fully integrated capabilities that enable continuous delivery of software. These capabilities may include planning, version control, continuous integration, test automation, release orchestration, continuous deployment (and rollback), monitoring, security testing and analyzing value stream metrics. VSDPs integrate with infrastructure and compliance automation tools to automate infrastructure deployment and policy enforcement.

VSDPs are extensible by design and integrate with other tools to fill gaps in software delivery management. Gartner’s definition of VSDP does not describe a system that cobbles together disparate DevOps tools. Instead, VSDPs provide preintegrated capabilities that enhance productivity, collaboration, communication and business outcomes for product teams via interactions among the platform components.

**Market Description**

VSDPs enable organizations to simplify building and managing DevOps pipelines. They reduce complexity involved in orchestrating, integrating and governing pipeline activities. In addition, the prebuilt integration between different components of the platform leads to improved visibility, traceability and observability into the complete application development value stream. The benefits extend beyond IT.
A unified platform provides end-to-end visibility and helps reduce cycle time by minimizing friction due to handoffs and improving consistency in workflows. This end-to-end view encourages systems thinking over local optimization and enables organizations to continuously improve through accelerated feedback loops.

The vendors represented in this research are innovating rapidly and expanding their capabilities in alignment with market needs. Every vendor specializes in a few, but not all, phases of the complete software delivery value stream. We expect vendors to fill the gaps either through acquisitions or third-party integrations while keeping the focus on their core value proposition.

Figure 1 describes the key capabilities of VSDPs.

**Figure 1: Key Capabilities of Value Stream Delivery Platforms**

![Key Capabilities of Value Stream Delivery Platforms](image)

*Source: Gartner 736295_C*

**Modernizing Software Delivery**—Aaron Whitehand, director of Software Engineering at Deakin University
“We've been looking to modernize how we approach things here, and a key piece of that is automation, which is obviously part of any DevOps transformation and focuses on taking all the manual steps out of the process. While the university had some IT process automation tools, these tended to have been purchased by small teams or for specific projects.”

“We've had duplication of tools and varying levels of maturity over time. With the duplication of tools, and a need to couple less mature tools with other open-source or commercial offerings to provide certain features, we were either duplicating spend or having to educate a large number of people on a large number of platforms. That duplication of licensing and effort became unpalatable over the past year in particular as budgets tightened.”

“Certainly, during the current environment, we need to be conscious of our spending. Rationalization came to the forefront, and we started to look at how we could rationalize tools, but in line with that, how we can provide consistency and enablement of teams at scale. So we started to not only promote a consistent tool for use, but we also created a platform engineering team — a central team that could actually enable other teams with a standard consistent approach.”

Market Direction

Our conversations with clients indicate increased interest in tools that encompass both development and operations capabilities. Organizations have traditionally met the needs of each individual phase of the application delivery value stream using specialized tools. However, the lines will increasingly blur as VSDPs aim to provide a unified application delivery pipeline.

The following trends will drive rapid adoption of VSDPs in the next two to three years:

- Cloud adoption
- Container-native architectures, microservices and GitOps
- Continued adoption of agile development methodologies such as Scrum and Kanban
- Digital transformation initiatives requiring faster time to market
- Business pressure to show that DevOps creates business value
The data from 571 attendees at a global Gartner webinar held in January 2021 shows that organizations use the following four drivers to modernize their DevOps toolchains (see Figure 2):

1. Cloud migration and cloud-native architectures
2. Improved developer productivity, agility and delivery cadence
3. Security and compliance automation
4. Improved visibility and traceability in the flow of work

Figure 2: What Is Driving the Choice of New DevOps Toolchains in Your Organization?
A fragmented DevOps toolchain presents organizations with the challenge of integrating, managing and orchestrating multiple disparate tools and processes. VSDP providers aim to solve this problem by offering a managed, fully integrated set of capabilities with native support for orchestration. These capabilities will mature over time due to competitive pressure and customer demand (see Figure 3). Since these capabilities were traditionally offered as best-of-breed tools in distinct market categories, VSDPs will overlap with quite a few adjacent markets (see Figure 4).

**Figure 3: VSDPs Provide a Unified Platform for Software Delivery**
Figure 4: Market Categories That Overlap With VSDP

![DevOps Tools That Overlap With VSDP]

VSDP providers have overlapping functionality across these distinct markets

Source: Gartner
736295_C

**Market Analysis**

By using a common platform across development, security and operations activities, agile teams can bridge gaps and foster collaboration between organizational silos. VSDPs enable all participants in the software delivery value stream to have shared visibility into business, development and operational metrics. This concept-to-cash visibility enables teams to measure progress based on shared business outcomes.

Gartner sees the future of IT being organized as product teams and platform teams — not as disjointed application development and ITOps silos. The product teams are aligned directly with business needs. The platform teams build consistent, self-service development platforms to enhance developer experience and drive innovation across multiple software engineering teams. Viewed in that context, VSDPs become an integral part of a broader self-service development platform (see Figure 5).
Figure 5: VSDPs Accelerate Customer Value as Part of a Broader Self-Service Development Platform

Build Self-Service Platforms as a Paved Road to Production

Source: Gartner
742780_C

Brief definitions of vendor functional categories follow.

Plan and create:

- Management of product roadmap and backlogs as part of agile methodologies such as Scrum and Kanban
- Design tools, source code management and integrated development environment (IDE) support (e.g., integrated browser-based IDEs)
- Support for code review, code collaboration and static code analysis
- Metrics to measure flow of value — for example, cycle time, lead time, work in progress, wait times, value delivered per unit time, aging work items, ratio of time spent on defects versus features, defect escape rate

Integrate and verify:

- Software test automation (functional and nonfunctional)
Deploy and operate:
- Automated deployment of applications (e.g., development, test, staging and production)
- Support for infrastructure as code (IaC) practices, GitOps and container-based deployments
- Support for a manual change approval step before deploying to production
- Feature flag management, blue-green and canary deployments to mitigate deployment risks
- Support for application release orchestration

Monitor and improve:
- Ingest and analyze data from applications, infrastructure, network and other data sources to continuously improve performance, availability and other service-level indicators
- Enable automation, monitoring and alerting in response to feedback in production environments
- Out-of-the-box support for monitoring and observability capabilities to continuously capture operational telemetry and improve reliability and resilience
- Automate incident response automation via third-party integration or native capabilities

Security and compliance:
- Software composition analysis, security testing, fuzz testing, container scanning
- Support for signed pipelines to ensure software integrity, provenance and immutability
- Support for secrets scanning and management to avoid leaking API keys and credentials
- Enforcement of secure coding guidelines and regulatory standards, such as service organization control (SOC) 2, National Institute of Standards and Technology (NIST), Center for Internet Security (CIS) and Sarbanes-Oxley (SOX)

**Team collaboration:**

- Support for collaboration within teams in the context of a work item or an artifact through integration of planning, design, development and collaboration tools
- Analytics to measure and assess team-level productivity, collaboration and workforce skills
- Support for discussions and feedback-sharing on product features and functionality

**Value stream metrics:**

- Analyze flow metrics such as lead time, cycle time, throughput, work in progress, flow efficiency and work profile (defects/features/debt/risk).
- Measure standard DORA metrics such as lead time, deployment frequency, mean time to respond and change failure rate.
- VSDPs by definition integrate with version control systems, continuous integration/continuous delivery (CI/CD) components, test automation and work management tools. This gives them the ability to connect technical metrics to product and business decisions.

**Platform governance:**

- Support for single sign-on (SSO), multifactor authentication (MFA) and role-based access control (RBAC) for authorization by integrating with IAM tools such as Azure Active Directory and Okta
Support for passwordless authentication to management consoles and code/artifact repositories

Ability to trigger actions in response to events in the application delivery process

Establishment of roles, privileges and permissions that grant or deny access to different pipeline activities

Representative Vendors

The vendors listed in this Market Guide do not imply an exhaustive list. This section is intended to provide more understanding of the market and its offerings.

Market Introduction

Vendors are evolving their capabilities at a rapid pace to support different application deployment use cases — cloud-native, mobile, edge, commercial off-the-shelf (COTS) and regulatory environments.

Table 1 offers a sample list of VSDP providers (see Note 1).
### Table 1: Representative Vendors in Value Stream Delivery Platforms
(Enlarged table in Appendix)

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Products or Service</th>
<th>Example Use Cases*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlassian</td>
<td>Jira Software, Jira Align, Jira Service Management, Confluence, Trello, Bitbucket, Crucible, Bamboo, Opsgene</td>
<td>G</td>
</tr>
<tr>
<td>Bitrise</td>
<td>Bitrise</td>
<td>M</td>
</tr>
<tr>
<td>CloudBee</td>
<td>CloudBee Software Delivery Automation</td>
<td>G</td>
</tr>
<tr>
<td>Codefresh</td>
<td>Codefresh</td>
<td>C</td>
</tr>
<tr>
<td>Copado</td>
<td>Copado DevOps Platform</td>
<td>COTS</td>
</tr>
<tr>
<td>Digital.ai</td>
<td>Digital.ai Value Stream Platform</td>
<td>G</td>
</tr>
<tr>
<td>Herrix</td>
<td>Herrix Software Delivery Platform</td>
<td>G, C</td>
</tr>
<tr>
<td>HCL Software</td>
<td>HCL Software DevOps</td>
<td>G</td>
</tr>
<tr>
<td>JFrog</td>
<td>JFrog Platform</td>
<td>G, E</td>
</tr>
<tr>
<td>Nevercode</td>
<td>Codemagic</td>
<td>M</td>
</tr>
<tr>
<td>Red Hat</td>
<td>Red Hat OpenShift Platform Plus</td>
<td>C</td>
</tr>
<tr>
<td>Stratox Enterprises</td>
<td>CodeNOW</td>
<td>C</td>
</tr>
<tr>
<td>VMware</td>
<td>VMware Tanzu Advanced Edition</td>
<td>G</td>
</tr>
</tbody>
</table>

**Public Cloud Providers**

<table>
<thead>
<tr>
<th>Provider</th>
<th>Products or Service</th>
<th>Example Use Cases*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amazon Web Services (AWS)</td>
<td>AWS CodePipeline, AWS CodeCommit, AWS CodeBuild, AWS CodeDeploy, AWS CodeArtifact, AWS Amplify, AWS CloudFormation, AWS X-Ray and Amazon CloudWatch</td>
<td>G</td>
</tr>
<tr>
<td>Google Cloud Platform (GCP)</td>
<td>Cloud Source Repositories, Cloud Code, Cloud Build, Artifact Registry, Google Cloud's operations suite</td>
<td>C</td>
</tr>
<tr>
<td>Microsoft Azure</td>
<td>Azure DevOps Services</td>
<td>G</td>
</tr>
</tbody>
</table>

*Use case* reflects Gartner’s view of the use case that the platform is best positioned to support. This is Gartner’s recommended use case for buyers of the platform.

- **G** = General-purpose application development (both container and non-container use cases with support for a wide variety of programming languages and frameworks)
- **COTS** = Optimized for commercial off-the-shelf software such as Salesforce, SAP and Oracle
- **M** = Optimized for mobile application development
- **E** = Optimized for edge deployments
- **C** = Optimized for container-native (Kubernetes) deployments

Source: Gartner (October 2021)

Table 2 breaks down the capabilities of the VSDP providers based on the market definition and classifies them as “native,” “integration” or “native and integration.”
### Table 2: VSDP Capabilities Matrix (Native or Integration)

(Enlarged table in Appendix)

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Planning</th>
<th>Source Code Management</th>
<th>Continuous Integration</th>
<th>Deployment Automation</th>
<th>Security Capabilities</th>
<th>Value Stream Metrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amazon Web Services (AWS)</td>
<td>Integration</td>
<td>Native</td>
<td>Native</td>
<td>Native</td>
<td>Native + Integration</td>
<td>N/A</td>
</tr>
<tr>
<td>Albatross</td>
<td>Native</td>
<td>Native</td>
<td>Native</td>
<td>Native</td>
<td>Integration</td>
<td>Native</td>
</tr>
<tr>
<td>Bitrise</td>
<td>Integration</td>
<td>Integration</td>
<td>Native</td>
<td>Native</td>
<td>Integration</td>
<td>Basic</td>
</tr>
<tr>
<td>CloudBees</td>
<td>Integration</td>
<td>Integration</td>
<td>Native</td>
<td>Native</td>
<td>Integration</td>
<td>Native</td>
</tr>
<tr>
<td>Codefresh</td>
<td>Integration</td>
<td>Integration</td>
<td>Native</td>
<td>Native</td>
<td>Integration</td>
<td>N/A</td>
</tr>
<tr>
<td>Copado</td>
<td>Native</td>
<td>Native</td>
<td>Native</td>
<td>Native</td>
<td>Native + Integration</td>
<td>Native</td>
</tr>
<tr>
<td>DigitalOcean</td>
<td>Native</td>
<td>Native</td>
<td>Native</td>
<td>Native</td>
<td>Integration</td>
<td>N/A</td>
</tr>
<tr>
<td>Flexagon</td>
<td>Integration</td>
<td>Integration</td>
<td>Native</td>
<td>Native</td>
<td>Integration</td>
<td>N/A</td>
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<tr>
<td>GitHub</td>
<td>Basic</td>
<td>Integration</td>
<td>Native</td>
<td>Native</td>
<td>Native</td>
<td>N/A</td>
</tr>
<tr>
<td>GitLab</td>
<td>Native</td>
<td>Native</td>
<td>Native</td>
<td>Native</td>
<td>Integration</td>
<td>Basic</td>
</tr>
<tr>
<td>Google Cloud Platform (GCP)</td>
<td>N/A</td>
<td>Native</td>
<td>Native</td>
<td>Native</td>
<td>Native</td>
<td>N/A</td>
</tr>
<tr>
<td>Guido-Rails</td>
<td>Integration</td>
<td>Integration</td>
<td>Native</td>
<td>Native</td>
<td>Integration</td>
<td>Basic</td>
</tr>
<tr>
<td>HCL Software + (Compass)</td>
<td>Integration</td>
<td>Native</td>
<td>Native</td>
<td>Native</td>
<td>Integration</td>
<td>N/A</td>
</tr>
<tr>
<td>JFrog</td>
<td>Integration</td>
<td>Integration</td>
<td>Native</td>
<td>Native</td>
<td>Integration</td>
<td>N/A</td>
</tr>
<tr>
<td>Microsoft Azure DevOps</td>
<td>Native</td>
<td>Native</td>
<td>Native</td>
<td>Native</td>
<td>Integration</td>
<td>Basic</td>
</tr>
<tr>
<td>Netcode</td>
<td>Integration</td>
<td>Integration</td>
<td>Native</td>
<td>Native</td>
<td>Integration</td>
<td>N/A</td>
</tr>
<tr>
<td>Red Hat</td>
<td>Integration</td>
<td>Integration</td>
<td>Native</td>
<td>Native</td>
<td>Integration</td>
<td>N/A</td>
</tr>
<tr>
<td>Source</td>
<td>Native</td>
<td>(Redmine)</td>
<td>Native</td>
<td>(GitLab)</td>
<td>Native</td>
<td>(Travis CI)</td>
</tr>
<tr>
<td>VMware</td>
<td>Native</td>
<td>(Pivotal Tracker)</td>
<td>Integration</td>
<td>Native</td>
<td>Native</td>
<td>Integration</td>
</tr>
</tbody>
</table>

**Notes:**

- "Native" means the capability is native to the platform.
- "Integration" implies the capability is provided via pre-built integrations with a third party.
- "Basic" implies the capability is currently rudimentary.
- "Native + Integration" implies the platform provides native capabilities as well as integrates with other tools for additional capabilities. This is primarily important for security and compliance requirements because they span the complete technology stack. For example, the platform can provide native capabilities for source code analysis and security testing. In addition, it can integrate with other tools for software composition analysis, infrastructure policy as code, and container scanning.

Source: Gartner (October 2021)
Vendor Profiles

Amazon Web Services (AWS)

Summary: AWS offers a VSDP via an integrated and managed set of capabilities running on AWS cloud services.

Plan: Agile planning support is via partner integrations with tools such as Atlassian Jira Software and Micro Focus and native backlog management in AWS CodeStar.

Develop: AWS CodeStar provides a unified user interface to monitor development activity and track progress across all stages of the software development life cycle (SDLC). AWS CodeBuild integrates with AWS CodeCommit (Git repository service), AWS CodeArtifact (artifact repository) and Amazon Elastic Container Registry (Amazon ECR). AWS Amplify provides a built-in CI/CD solution for web and mobile front-end applications.

Test: AWS Fault Injection Simulator supports resiliency and performance testing using chaos experiments. Amazon CodeGuru provides code quality recommendations during development (via automated code reviews) and performance tuning recommendations at runtime (via Profiler). AWS Device Farm enables testing web and mobile apps across a broad range of desktop browsers and real mobile devices.

Deploy and Operate: AWS CodePipeline is a CD service that connects CodeCommit to CodeBuild (build and test) and CodeDeploy (perform application and infrastructure updates). Amazon DevOps Guru helps detect anomalous application behaviors (e.g., increased latency, error rates, resource constraints) during runtime.

Secure, Comply and Govern: It relies on integrations with open-source tools for software composition analysis (SCA), dynamic application security testing (DAST) and static analysis security testing (SAST). Native capabilities include AWS Security Hub (aggregation of security alerts and automated remediation) and AWS Secrets Manager (secrets management). AWS Config enables assessment, auditing and evaluation of the configurations of AWS resources.

Value Stream Metrics: As of this writing, the platform lacks support for value stream metrics as defined in this Market Guide.

Atlassian

Summary: Atlassian offers self-hosted (data center) and SaaS subscription versions of a suite of products to support the complete software delivery value stream.
Plan: Atlassian is a Leader in Gartner’s Magic Quadrant for Enterprise Agile Planning Tools. Atlassian Jira Software includes support for team-level agile planning, backlog management, issue tracking and product roadmapping. Jira Align is the project and portfolio management tool with built-in support for multiple enterprise agile frameworks.

Develop: Bitbucket is the Git-based version control system with support for code review and code collaboration. Bitbucket Pipelines and Bamboo (on-premises) provide CI/CD with support for multistage, declarative pipelines. Software engineering teams can use Jira Software for collaborative work management and Confluence for project/product documentation and knowledge management.

Test: Via integrations for test management, CI can also execute and report on automated tests such as mabl and Cerberus, and integrations for SonarSource and Snyk for quality and security.

Deploy and Operate: Bitbucket Pipelines provides the core deploy facility with integrations to many component repositories, feature toggle providers and other CD systems. Jira Service Management is a Visionary in Gartner’s Magic Quadrant for IT Service Management Tools. It includes support for incident response via Opsgenie.

Secure, Comply and Govern: Security and compliance is provided via pipeline integration to third-party AST tools.

Value Stream Metrics: Atlassian supports a number of metrics natively as well as through a broad set of integrations. Jira Software provides DevOps research and assessments (DORA) insights, and Atlassian recently acquired Chartio to provide analytics and metrics across its products.

Bitrise

Summary: Bitrise offers a SaaS-based VSDP for continuous delivery of mobile applications.

Plan: Bitrise offers agile planning capabilities via integration with Atlassian Jira Software.

Develop: Bitrise offers CI/CD for multiple mobile platforms and frameworks — iOS, Android, Flutter, React Native, Ionic and Xamarin. Based on the license tier, build agents are dedicated to a single customer.
Test: It integrates with Sauce Labs, Genymotion, Perfecto by Perforce, TestFairy, Flank, BrowserStack, AWS Device Farm, and Firebase for testing via emulators and real devices. It integrates with Codecov for code coverage.

Deploy and Operate: Bitrise automates the process of code signing before building and uploading apps to Apple App store and Google Play. On iOS, Bitrise manages the provisioning profiles needed for the XCode project. It supports the distribution of apps through Amazon Simple Storage Service (Amazon S3), Huawei AppGallery, Microsoft Visual Studio App Center and Google Firebase. Bitrise includes native support for mobile app performance monitoring (via trace SDK) to detect application crashes, performance and usage data.

Secure, Comply and Govern: Bitrise integrates with App-Ray, Veracode and HCL AppScan for mobile application security testing. It includes native support for secrets scanning in build logs and integrates with AWS Secrets Manager for secrets management.

Value Stream Metrics: Bitrise offers reliability and operational metrics (e.g., mean time to repair [MTTR], build success rate, build duration [trends over time]). It provides proxy metrics for business impact — such as number of users and types of devices impacted by a change.

CloudBees

Summary: CloudBees Software Delivery Automation platform is a single integrated offering for CI/CD, feature flag management, release orchestration and value stream analytics.

Plan: It integrates with agile planning tools such as Atlassian Jira Software, Broadcom Rally Software and ServiceNow.

Develop: The CloudBees platform builds on Jenkins OSS-based CI and adds in proprietary capabilities to enhance enterprise governance and policy management. It has a rich set of plug-ins for CloudBees CI Plugins (including test automation, agile planning, SAST, SCA and database automation) and CloudBees CD Plugins (infrastructure automation, application monitoring, container management, container scanning and ITSM).
Test: The CloudBees platform has native capabilities to automate API tests, chaos experiments and acceptance tests. For functional UI tests, performance tests and unit tests, it supports integration with Eggplant, Selenium, Micro Focus (UFT One), SmartBear (TestComplete), Subject7, Micro Focus (LoadRunner), Radview (WebLOAD), Apache JMeter, JUnit and NUnit.

Deploy and Operate: It offers native support for feature flag management (FFM). It integrates FFM with CI/CD and release orchestration modules to enable granular control of releases at the feature level. Support for multistage pipelines is via manual approvals and automated gates (based on predefined conditions).

Secure, Comply and Govern: Integration with HashiCorp Vault and CyberArk augments the built-in secrets management module. It enables auditability with pipeline/release audit reports generated to support software delivery audits.

Value Stream Metrics: It includes native support for flow metrics with VSM dashboards. CloudBees offers a stand-alone value stream management platform.

Codefresh

Summary: Codefresh offers a Kubernetes-focused continuous delivery platform with support for GitOps. The platform bundles a managed, enterprise-grade version of Argo CD, which is an open-source tool to declaratively manage Kubernetes applications using the GitOps pattern.

Plan: Codefresh integrates with Atlassian Jira Software. Users can install the Codefresh app from the Atlassian marketplace.

Develop: The central component of the Codefresh platform is pipelines. Each step within a pipeline runs within a container (e.g., Docker). All steps in Codefresh share the same “workspace” in the form of a shared Docker volume. The shared Docker volume is automatically cached between pipeline executions, thus significantly improving build times.

Test: Users can select a Docker image that has the required test tools and define an explicit testing step in the pipeline.
Deploy and Operate: It supports deployments to Kubernetes with a few options — Codefresh GUI, dedicated deploy steps in the pipeline, Kustomize, Helm charts and kubectl. Codefresh includes an environment dashboard to give an overview of the cluster status and the builds that affect it.


Value Stream Metrics: As of this writing, the platform lacks support for value stream metrics as defined in this Market Guide.

Copado

Summary: Copado offers a VSDP solution that enables continuous delivery of applications built on Salesforce, Heroku and MuleSoft. Copado includes a general-purpose automation and scripting engine (Copado Functions) to help build and test applications on other platforms.

Plan: Copado supports creating and tracking user stories, epics, features and projects. It enables grouping user stories at the portfolio level by strategic theme, application, feature, epic, sprint and release, and managing their interdependencies.

Develop: The Copado platform includes a native Git-based version control repository in addition to integrating with other Git-based repositories. Since Copado is built on Salesforce, it can be customized to enable low-code citizen developers to create, track and deploy applications.

Test: Copado Robotic Testing (previously Qentinel Pace) enables automated testing for web applications, and mobile and desktop apps, and includes Salesforce- and SAP-specific capabilities. Copado Selenium Testing allows you to record, store, run and schedule Selenium tests within Copado.

Deploy and Operate: Copado Continuous Delivery provides a user interface to allow noncoders to track their changes in version control alongside developers and perform automated and scheduled deployments. When a developer submits a user story, this can trigger a series of deployments to different destination environments.
Secure, Comply and Govern: Copado uses third-party tools for static code scanning — PMD, CodeScan, SonarApex and SonarQube. Copado Compliance Hub enables creating compliance rules and enforcing scans for configuration changes to prevent promoting noncompliant changes to production environments.

Value Stream Metrics: Copado supports commonly used value stream metrics, including lead time, deployment rate, change fail rate and mean time to restore. It also analyzes team performance trends- metadata analysis, deployment-related metrics, planning (estimates versus actual) and value stream metrics such as throughput and workload distribution.

Digital.ai

Summary: The Digital.ai platform supports enterprise agile planning, version control (TeamForge), release orchestration, deployment automation, test automation, in-app protection and value stream analytics. Digital.ai was formed in 2020 through the merger of CollabNet VersionOne, XebiaLabs, Experitest, Numerify and Arxan Technologies.

Plan: Digital.ai is a Leader in Gartner’s Magic Quadrant for Enterprise Agile Planning Tools.

The platform provides full support for enterprise agile frameworks such as SAFe, LeSS and DAD.

Develop: The platform includes native support for source code management in addition to integrating with third-party source code management solutions. The platform integrates with external CI tools.

Test: It includes support for continuous functional and nonfunctional testing of mobile and web applications. The platform also supports remote testing on physical mobile devices, emulators and cross-browser testing using Appium and Selenium.

Deploy and Operate: Digital.ai Release (formerly XebiaLabs XL Release) is the release orchestration component of the platform. The platform supports change risk prediction and Digital.ai AIOps capabilities (formerly Numerify) by analyzing data from multiple sources — planning, APM, CI/CD and ITSM tools. Digital.ai Deploy (formerly XebiaLabs XL Deploy) enables teams to standardize and automate application deployments to multiple environments including mainframes, virtual machines, containers and cloud.
Secure, Comply and Govern: Digital.ai Application Protection (formerly Arxan) protects mobile, desktop and web applications against reverse engineering, API exploits, data exfiltration and tampering.

Value Stream Metrics: The platform provides analytics capabilities (e.g., dashboards, ad hoc analysis) and metrics that span the complete software delivery value stream through prebuilt integrations with both Digital.ai solutions and other DevOps tools. Digital.ai offers a stand-alone value stream management platform.

Flexagon

Summary: FlexDeploy from Flexagon is an on-premises or cloud-hosted solution tailored for continuous delivery of COTS applications such as Oracle, SAP and Salesforce. In addition, it supports CI/CD for containerized and serverless applications.

Plan: FlexDeploy provides native integration with Atlassian Jira Software, GitLab, GitHub and Azure Boards. FlexDeploy provides webhooks for bidirectional integration, initiating a release within FlexDeploy when a release/sprint is created in Jira, for example.

Develop: FlexDeploy integrates with both Git- and non-Git-based SCM tools. It provides proprietary CI capability with plug-in support for Oracle, SAP, MuleSoft and Salesforce. The platform supports declarative, visual, multistage pipelines with support for quality control gates and manual approvals.

Test: It provides native integration with automation tools for functional tests, API tests and performance tests. Code coverage is supported natively using open-source PMD for Salesforce. Reporting capabilities include test automation reports, environment status and environment discrepancies, such as environments that are out of sync with each other.

Deploy and Operate: It supports gated pipelines during code deployments. In addition, it integrates with infrastructure automation tools for provisioning, configuration and operational management of infrastructure, databases and middleware on-premises and in the cloud.

Secure, Comply and Govern: FlexDeploy provides native secrets management and artifact repository capabilities in addition to integrating with SonarQube, Acunetix, Micro Focus (Fortify), PMD, JFrog, Anchore and ApexSec, and secrets management tools such as CyberArk, HashiCorp Vault, Azure Key Vault and Thycotic.
Value Stream Metrics: As of this writing, the platform lacks support for value stream metrics as defined in this Market Guide.

GitHub

Summary: GitHub is an independent subsidiary of Microsoft. GitHub Enterprise Server is for on-premises use, and GitHub Enterprise Cloud is the SaaS version. They are licensed on a per-user subscription basis.

Plan: GitHub Issues provides the ability to categorize and track work using labels and milestones.

GitHub Discussions enables project users to create and participate in conversations within the project's repository. GitHub includes templates to set up project boards (Kanban-style). GitHub integrates with agile planning tools such as Atlassian Jira and Azure Boards.

Develop: GitHub Codespaces is a browser-based IDE providing access to a cloud-hosted development environment. GitHub extends Git repositories with Wikis and integrated CI/CD via GitHub Actions.

Test: GitHub Actions can execute actions for functional UI tests (e.g., Playwright, Selenium), unit tests, fuzz tests, API tests and performance tests (e.g., Apache JMeter), and supports automated test environment creation using IaC tools such as Pulumi and HashiCorp (Terraform).

Deploy and Operate: GitHub Actions provides the primary deploy and operate capabilities, generally utilizing third-party software to carry out actions. GitHub Packages supports package managers, such as npm, RubyGems.org, Apache Maven, Gradle, Docker and NuGet. GitHub's Container registry is optimized for containers and supports Docker and OCI images.

Secure, Comply and Govern: GitHub provides support for software composition analysis, secrets scanning and code scanning via Dependabot and CodeQL, and also supports integration in the pipeline to other scanning technologies via GitHub Actions. GitHub is a Niche Player in Gartner's Magic Quadrant for Application Security Testing.

Value Stream Metrics: As of this writing, the platform lacks support for value stream metrics as defined in this Market Guide.
GitLab

**Summary:** GitLab offers a VSDP in three deployment modes — on-premises, SaaS and public cloud.

**Plan:** GitLab provides native support for agile planning, product roadmapping and backlog management, defect and release tracking, and Scrum and Kanban boards. GitLab is a Leader in Gartner’s [Magic Quadrant for Enterprise Agile Planning Tools](#).

**Develop:** The platform includes native SCM with support for code reviews, committing, branch protection, and merge requests. GitLab Auto DevOps is a suite of preconfigured features and integrations to support software delivery with minimal configuration. GitLab CI/CD supports multiple platforms (for example, Windows, Linux, and macOS) and is language-agnostic.

**Test:** The platform integrates with open-source tools for functional UI testing (e.g., Selenium, WebdriverIO) and performance testing (e.g., k6, sitespeed.io). It provides native support for accessibility testing and Fuzz testing (via acquisitions Fuzzit and Peach Tech).

**Deploy and Operate:** GitLab enables continuous deployment with support for feature flags (using Unleash, an open-source tool). In addition, the platform supports protected environments with an allowlist of users, roles, and groups that have permission to deploy.

**Secure, Comply and Govern:** It includes native support for dependency scanning, built-in container registry, container scanning (via Trivy and Grype), AST, secrets detection and generation of vulnerability reports. GitLab is a Challenger in Gartner’s [Magic Quadrant for Application Security Testing](#).

**Value Stream Metrics:** The platform supports flow metrics such as cycle time, lead time and DORA metrics (e.g., deployment frequency and lead time).

**Google Cloud Platform**

**Summary:** Google Cloud Platform (GCP) offers a suite of preintegrated products for continuous delivery of applications using GCP cloud services.
Develop: Google Cloud Source Repositories is a private Git repository and connects to the CI/CD pipeline (Cloud Build). The integration enables Cloud Build to automatically build, test and deploy new changes uploaded to the repository. Cloud Build also supports integration and triggering from third-party Git services such as Github.com, GitHub for Enterprises, Bitbucket and GitLab. Google Cloud Code is a set of IDE plugins for JetBrains IntelliJ, Visual Studio Code and Cloud Shell that help with writing and deploying cloud-native applications including the local debugging of Kubernetes applications.

Deploy and Operate: Google Cloud Build provides a managed, serverless CI/CD platform that supports deployments to multiple environments — VMs, serverless, Kubernetes and Firebase. Google Artifact Registry supports container images and package formats (for example, Maven and npm packages). Cloud Build has native integration with Spinnaker for advanced deployment patterns (for example, blue-green, canary) to multicloud environments. Google Cloud’s operations suite (formerly Stackdriver) includes support for monitoring, logging, tracing and debugging applications hosted on GCP.

Secure, Comply and Govern: Google Artifact Registry supports the automated and continuous vulnerability scanning of container images. Binary Authorization provides deploy-time security in the form of admission controls that ensure only trusted container images are deployed on Google Kubernetes Engine (GKE) or Cloud Run. With Binary Authorization, users can enforce policies for signature validation and detection of vulnerable images stored in the Artifact Registry. This prevents deployments of risky images to production environments.

Value Stream Metrics: As of this writing, the platform lacks support for value stream metrics as defined in this Market Guide.

Guide-Rails

Summary: Guide-Rails provides a VSDP that includes an end-to-end orchestration engine connecting the different phases of SDLC from a single dashboard to streamline delivery of custom-built and COTS applications.

Plan: Guide-Rails offers defect tracking, enterprise agile planning and backlog management via integrations with Jira, ServiceNow and Rally.

Develop: It offers native integration with Bitbucket, GitHub, GitLab and Subversion, and with Gerrit for code review and collaboration. Native CI capabilities are built using open-source Concourse that supports creation of multistage declarative pipelines.
Test: Guide-Rails leverages Selenium and SmartBear (Cucumber) for automated functional tests. The platform can spawn test environments as part of the continuous integration workflow and run custom tests in these environments.

Deploy and Operate: The deployment workflow abstracts away the complexity of a heterogeneous environment that may span Kubernetes, VMs, Salesforce or bare metal. It supports rollbacks to a specific version and manual approvals with separation of duties that may be required in regulated verticals.

Secure, Comply and Govern: Guide-Rails supports the automated creation of software bill of materials (SBOMs), which is important to secure the software supply chain. Secrets management support is built-in. Out-of-the-box integrations with SonarQube, Veracode, Aqua Security, Netsparker (IAST and DAST), WhiteSource (SCA) and JFrog Xray (SCA) are supported.

Value Stream Metrics: It supports VSM metrics (such as lead time throughput, efficiency and wait time), and deployment velocity, and metrics for open security issues, code coverage and license compliance reporting.

Harness

Summary: Harness offers SaaS and on-premises versions of its software delivery platform.

Plan: It offers native support for Jira and the ability to integrate with other tools via API.

Develop: Continuous Integration Enterprise is the CI module built on top of Drone. Harness offers support for declarative, multistage pipelines with the ability to create templates. A feature called Test Intelligence improves build times because it can prioritize, rank and run tests to detect issues early and fail the build as a result. This capability is limited to unit tests only.

Test: Harness can integrate to test automation tools such as Sauce Labs, Apache JMeter and LoadRunner.

Deploy and Operate: Harness has native support for feature flags in conjunction with A/B and multivariate testing to selectively roll out features based on dynamic conditions. One of the capabilities called Service Guard ingests data from multiple monitoring tools and detects regressions and anomalies across transactions and events.
Secure, Comply and Govern: Harness has the ability to query scanning tools such as Black Duck to validate if an artifact was scanned as part of pipeline governance checks. It includes native secrets manager and integrations with popular secrets managers (such as HashiCorp Vault, CyberArk, AWS, GCP and Azure).

Value Stream Metrics: Support for velocity metrics (lead time to production, deployment frequency) and operational metrics (MTTR, Change Failure Rate).

HCL Software

Summary: HCL Software DevOps is a suite of preintegrated products that combines both value stream management and value stream delivery capabilities.

Plan: HCL Compass is a change and issue tracking system that manages different types of change requests, including defects, product enhancements, issues, requests for new features and documentation changes. It offers support for workflow automation, notifications and traceability.

Develop: HCL VersionVault is the version control and configuration management system to enable software engineering teams to access, track and manage artifacts through the SDLC. It provides an auditable history of source files and software builds. It does not support native CI capabilities.

Test: HCL OneTest offers a broad set of testing capabilities for automated integration testing, embedded systems testing, performance testing, web-based UI testing and service virtualization.

Deploy and Operate: HCL Launch offers deployment and release automation capabilities across cloud and on-premises environments with the necessary approval gates.

Secure, Comply and Govern: HCL AppScan offers capabilities across SAST, DAST and IAST. The AppScan on Cloud service includes SAST, DAST, IAST and SCA support. HCL AppScan is a Leader in Gartner’s Magic Quadrant for Application Security Testing.

Value Stream Metrics: HCL Accelerate aggregates data from across the DevOps pipeline to provide visibility into value stream metrics. It provides a release readiness score that assesses overall release quality based on a combination of development, test and deployment factors.
JFrog

Summary: The JFrog platform includes a preintegrated set of capabilities for secure development and distribution of software. The product suite comprises Artifactory, Xray, Pipelines and Distribution. It acquired Vdoo in July 2021 to augment its security capabilities for mobile, edge and embedded use cases.

Plan: The platform offers limited support via integration of JFrog pipelines with Atlassian Jira Service Management. For example, if a deployment fails, a ticket can be created in Jira through this integration.

Develop: JFrog Pipelines integrates with third-party SCM tools and enables event-driven automated workflows for continuous integration, deployments and infrastructure provisioning. As part of the platform, Pipelines integrates with JFrog Artifactory (artifact management) and JFrog Xray (security vulnerability scanning).

Deploy and Operate: JFrog Distribution manages the distribution of binaries and artifacts to multiple cloud and edge locations via a private distribution network. The distribution network connects JFrog source Artifactory to JFrog Artifactory Edge nodes for optimized delivery of software releases. JFrog acquired Upswift in September 2021. Upswift makes it easy to deploy and manage software updates to distributed edge and IoT environments.

Secure, Comply and Govern: JFrog Xray is the software composition analysis engine that recursively scans artifacts in Artifactory to identify open-source vulnerabilities and license compliance violations. The platform supports “signed pipelines” to prevent tampering of artifacts and protect their integrity as they progress through the CI/CD workflow. The signing process creates trust and provides a way to validate the immutability of the artifacts and the authenticity of packages.

Value Stream Metrics: As of this writing, the platform lacks support for value stream metrics as defined in this Market Guide.

Microsoft Azure

Summary: Microsoft offers Azure DevOps, a collection of services as both on-premises and SaaS solutions.

Plan: Azure Boards provides support for Kanban and Scrum planning and backlog management.
Develop: Visual Studio comes in a number of formats and is fully integrated to the work items managed in Azure Boards. Azure Repos is the private Git repository with support for team collaboration, code reviews, semantic code search and native integration with Azure Pipelines for CI/CD. Visual Studio marketplace includes Azure DevOps extensions to support the complete software delivery life cycle.

Test: Azure Test Plans supports the planning and execution of testing activities including exploratory tests. Visual Studio provides support for a number of testing frameworks and creation of unit tests. These tests can be activated via Azure Pipelines.

Deploy and Operate: Azure Pipelines supports Linux, macOS and Windows to build and deploy web, desktop and mobile applications across on-premises and multiple cloud environments. It supports multistage deployments with gates and approvals to Kubernetes, VMs, Azure Functions and Azure Web Apps. Azure Monitor enables monitoring and observability of applications, networks and infrastructure.

Azure Artifacts is the package registry for Apache Maven, npm, NuGet, Python and universal packages. Artifacts can be used to review and validate each package for security purposes within a feed.

Secure, Comply and Govern: Security scanning is supported via third-party extensions.

Value Stream Metrics: Azure DevOps Analytics Service provides dashboard and reporting widgets to help measure lead time, cycle time and velocity of work.

Nevercode
Summary: Nevercode offers a SaaS-based VSDP called Codemagic for continuous delivery of mobile applications.

Plan: It offers agile planning capabilities via integration with Atlassian Jira Software.

Develop: Nevercode supports multiple mobile platforms and frameworks — iOS, Android, Flutter, Ionic, Apache Cordova, Unity and React Native. The CI pipeline includes support for encrypting sensitive data (secrets), webhooks for automatic builds, build timeouts and scheduled builds.
**Test:** Integrates with Firebase Test Lab (cloud-based infrastructure) for testing Android and iOS apps on various devices and configurations. Android application tests can be run on an Android emulator, iOS application tests can be run on an iOS simulator, and web application tests can be run on a web browser driver. Supports Appium, an open-source test automation framework, as part of continuous integration.

**Deploy and Operate:** Codemagic publishes apps either to one of the predefined tracks (internal, alpha, beta and production) on Google Play or to custom staged testing tracks. It automates code signing and publishing iOS or macOS apps to App Store Connect for beta testing with TestFlight or distributing the app to users via App Store.

**Secure, Comply and Govern:** Codemagic doesn't use local accounts and passwords. Instead, it relies on authentication via GitHub, Bitbucket, GitLab and other SSO integrations. It supports automated code signing for iOS, macOS and Android applications with limited audit logs w.r.t user actions.

**Value Stream Metrics:** As of this writing, the platform lacks support for value stream metrics as defined in this Market Guide.

**Red Hat**

**Summary:** Red Hat offers OpenShift Platform Plus as the VSDP for continuous delivery of Kubernetes applications in hybrid cloud environments. Red Hat OpenShift Platform Plus extends the capabilities of Red Hat OpenShift (enterprise Kubernetes platform) with native CI/CD (based on Tekton and Argo CD). Red Hat acquired StackRox in 2021 to strengthen its security capabilities on OpenShift.

**Develop:** Red Hat CodeReady Workspaces is a browser-based IDE built using the Eclipse Che open-source project. The workspace runs as containers and includes development tools (such as debuggers, unit test tools and build tools). The platform supports Jenkins and Tekton pipelines and can be integrated with other CI solutions.

**Test:** The platform supports chaos testing capabilities natively via Kraken. Kraken injects deliberate failures into Kubernetes clusters to test reliability and resilience of applications to cluster failures.

**Deploy and Operate:** Red Hat Quay container registry enables you to build, store, distribute and deploy containers. Native support for CD is through OpenShift GitOps (based on Argo CD).
Secure, Comply and Govern: The platform offers native support for OpenSCAP, a NIST-certified tool, to run security and compliance scans to track drift from a desired compliant state. Red Hat Quay is the container registry for trusted base container images. The cluster security capabilities provide built-in controls to enforce industry-standard security guidelines (CIS Benchmarks and National Institute of Standards and Technology [NIST]).

Value Stream Metrics: As of this writing, the platform lacks support for value stream metrics as defined in this Market Guide.

Stratox Enterprises

Summary: Stratox Enterprises offers CodeNOW as a managed open-source-based VSDP for cloud-native applications. The platform is available with either on-premises and SaaS-based subscriptions.

Plan: Agile planning capabilities are supported natively through Redmine and a prebuilt integration with Atlassian Jira.

Develop: The platform bundles diagrams.net (open-source technology from JGraph) for basic flowcharting. GitLab CE is integrated with CodeNOW for source code management. CodeNOW uses CI/CD pipelines based on Tekton, an open-source Kubernetes-native CI/CD framework, and supports declarative, multistage pipelines. It includes scaffolding support for open-source tools and language frameworks such as Redis, PostgreSQL, CockroachDB, Apache Kafka and RabbitMQ.

Test: Testing is based on Karate, an open-source test automation framework. Karate tests can automatically execute during the CI phase. It includes SonarQube for static code analysis.


Secure, Comply and Govern: Harbor is used as container registry and Trivy for container scan. The platform enables RBAC and SSO via Keycloak, an open-source IAM solution. The platform includes managed versions for SonarQube, OWASP Zed Attack Proxy (ZAP) and Vault by HashiCorp.
Value Stream Metrics: The platform offers support for DORA metrics and code quality. Examples include deployment frequency, lead time and change failure rate, duplications, technical debt, bugs, vulnerabilities, and code coverage. Operational telemetry is obtained from Prometheus, Grafana Loki and Jaeger.

VMware

Summary: The VMware Tanzu Advanced edition bundles VSDP capabilities to enable continuous delivery of containerized applications. Tanzu Application Service (formerly Pivotal Cloud Foundry) is currently the flagship platform that underpins Tanzu Advanced. However, VMware's market direction is aligned with the Tanzu Application Platform, announced in September 2021, and is in public beta as of this writing. Tanzu Application Platform is Kubernetes-based and supports multicloud and hybrid cloud deployments.

Plan: Planning capabilities are provided through the Pivotal Tracker component, with Scrum boards supported natively. Various scrum and project analytics are provided to monitor the trend charts and delivery metrics such as team velocity, throughput and predictability.

Develop: Tanzu Build Service automates container creation, management and governance. It leverages the buildpack model that developers and operators use in Cloud Foundry to deliver on-cluster container image builds.

Deploy and Operate: Tanzu Application Catalog is a customizable selection of trusted, prepackaged open-source application components that are continuously maintained and verifiably tested for use in production environments.

Secure, Comply and Govern: Tanzu natively integrates with Harbor as the container registry that provides static analysis of vulnerabilities in images through Trivy and Clair. In addition, customers can use partner integrations, like Aqua Security and Contrast Security, available on the VMware Marketplace. VMware Tanzu Mission Control includes a management dashboard to manage, govern and apply security policies to the K8s cluster.

Value Stream Metrics: VMware Tanzu Observability by Wavefront can be used to track metrics for code quality, production quality, customer satisfaction, and flow efficiency such as cycle time, throughput and work in progress.

Market Recommendations

Gartner recommends that product and platform teams use VSDPs when:
The benefit of a fully integrated platform outweighs the cost and effort to manage a complex toolchain. Operating a DevOps toolchain is not a one-time exercise. Rather, it requires ongoing resources and skills for operating and maintaining the tools that comprise it and a deep understanding of development workflows and deployment architecture.

- Specialized VSDP capabilities in one area of the application delivery value stream are essential. This includes tight integration among security policy enforcement, code reviews, continuous integration and version control. Ensure that the “good enough” capabilities outside of the specialization area meet enough of the organization's needs to justify the trade-offs. For instance, capabilities for canary and blue-green deployment, manual change approvals, and automated rollbacks may not be native to all VSDPs.

- The licensing and pricing advantages of VSDPs are attractive, compared to stitching together a complex DevOps toolchain through multiple vendor relationships.

Gartner cautions against using VSDPs when:

- The organization lacks the skills or technical maturity needed to take advantage of a VSDP. VSDP capabilities such as pipelines as code or declarative pipelines demand new skills and ways of working. Unless development teams are willing to adopt the right practices, investing in a new platform that supports those practices may not yield the desired benefits.

- VSDPs fail to integrate with tools that your organization already uses. For example, VSDPs should either provide built-in capabilities for planning, security and compliance automation, and infrastructure automation, or enable native integration with the tools you already use.

- Product teams are not ready to replace an existing toolchain, but platform engineering teams are trying to standardize the toolchain across all product teams. The VSDP choice must enable developer productivity and business agility, not inhibit it. In addition, VSDPs may create affinity to one vendor. Therefore, we recommend validating the vendor's product roadmap and strategy to ensure it meets the product teams' technology and architectural requirements.
**Note 1:**
**Representative Vendor Selection**

The representative vendors listed in this research are a subset of the total market. Although none of the vendors meets the needs of a complete value stream delivery platform for all use cases, the vendors represented in this Market Guide continue to innovate and expand their capabilities that align with the market definition. Therefore, the capabilities are reflective of what clients expect in such a platform and not necessarily the capabilities that every vendor provides.

Some platforms focus on continuous development and integration, while others focus on continuous delivery and deployment. Vendors differentiate themselves by enhancing the development experience, streamlining release workflows and securing the delivery life cycle.

**Document Revision History**

*Market Guide for DevOps Value Stream Delivery Platforms - 28 September 2020*

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**Recommended by the Authors**

Some documents may not be available as part of your current Gartner subscription.

- Infographic: Platforms and Tools to Scale the Delivery of High-Quality Software
- The Future of DevOps Toolchains Will Involve Maximizing Flow in IT Value Streams
- Magic Quadrant for Enterprise Agile Planning Tools
- Critical Capabilities for Enterprise Agile Planning Tools
- Market Guide for Container Management
- Solution Path for Agile Transformation
- Market Guide for Cloud Management Tooling
- Solution Path for Continuous Delivery With DevOps
- Keys to DevOps Success
### Table 1: Representative Vendors in Value Stream Delivery Platforms

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Products or Service</th>
<th>Example Use Cases*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlassian</td>
<td>Jira Software, Jira Align, Jira Service Management, Confluence, Trello, Bitbucket, Crucible, Bamboo, Opsgenie</td>
<td>G</td>
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<td>Bitrise</td>
<td>Bitrise</td>
<td>M</td>
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<td>CloudBees</td>
<td>CloudBees Software Delivery Automation</td>
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<td>Copado DevOps Platform</td>
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<td>Harness</td>
<td>Harness Software Delivery Platform</td>
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<tr>
<td>Source</td>
<td>Platform Name</td>
<td>Use Case</td>
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<td>Red Hat</td>
<td>Red Hat OpenShift Platform Plus</td>
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<td>Stratox Enterprises</td>
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<tr>
<td>VMware</td>
<td>VMware Tanzu Advanced Edition</td>
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**Public Cloud Providers**

<table>
<thead>
<tr>
<th>Source</th>
<th>Platforms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amazon Web Services (AWS)</td>
<td>AWS CodePipeline, AWS CodeCommit, AWS CodeBuild, AWS CodeDeploy, AWS CodeArtifact, AWS Amplify, AWS CloudFormation, AWS X-Ray and Amazon CloudWatch</td>
</tr>
<tr>
<td>Google Cloud Platform (GCP)</td>
<td>Cloud Source Repositories, Cloud Code, Cloud Build, Artifact Registry, Google Cloud's operations suite</td>
</tr>
<tr>
<td>Microsoft Azure</td>
<td>Azure DevOps Services</td>
</tr>
</tbody>
</table>

* "Use case" reflects Gartner’s view of the use case that the platform is best positioned to support. This is Gartner’s recommended use case for buyers of the platform. 

G = General-purpose application development (both container and noncontainer use cases with support for a wide variety of programming languages and frameworks)
COTS = Optimized for commercial off-the-shelf software such as Salesforce, SAP and Oracle
M = Optimized for mobile application development
E = Optimized for edge deployments
C = Optimized for container-native (Kubernetes) deployments

Source: Gartner (October 2021)
## Table 2: VSDP Capabilities Matrix (Native or Integration)

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Planning</th>
<th>Source Code Management</th>
<th>Continuous Integration</th>
<th>Deployment Automation</th>
<th>Security Capabilities</th>
<th>Value Stream Metrics</th>
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</thead>
<tbody>
<tr>
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<td>Native + Integration</td>
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<td>Integration</td>
<td>Native + Integration</td>
<td>Native + Integration</td>
<td>Native + Integration</td>
<td>Basic</td>
</tr>
<tr>
<td>Harness</td>
<td>Integration</td>
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<td>Native + Integration</td>
<td>Native + Integration</td>
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<tr>
<td>HCL Software</td>
<td>Native (Compass)</td>
<td>Native (VersionVault)</td>
<td>Integration</td>
<td>Native (Launch)</td>
<td>Native (AppScan)</td>
<td>Native (Accelerate)</td>
</tr>
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<tr>
<td>JFrog</td>
<td>Integration</td>
<td>Integration</td>
<td>Native</td>
<td>Native</td>
<td>Native + Integration</td>
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<td>Native</td>
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<td>Native</td>
<td>Integration</td>
<td>Basic</td>
</tr>
<tr>
<td>Nevercode</td>
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<td>Integration</td>
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<td>Native + Integration</td>
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<tr>
<td>Red Hat</td>
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<td>Integration</td>
<td>Native</td>
<td>Native</td>
<td>Native + Integration</td>
<td>N/A</td>
</tr>
<tr>
<td>Stratox Enterprises (Managed OSS VSDP)</td>
<td>Native (Redmine)</td>
<td>Native (GitLab CE)</td>
<td>Native (Tekton)</td>
<td>Native (Argo CD)</td>
<td>Native (via SonarQube, ZAP, Vault)</td>
<td>Basic</td>
</tr>
<tr>
<td>VMware</td>
<td>Native (Pivotal Tracker)</td>
<td>Integration</td>
<td>Native</td>
<td>Native</td>
<td>Native + Integration</td>
<td>Basic</td>
</tr>
</tbody>
</table>

Note:
"Native" implies that the capability is native to the platform.
"Integration" implies the capability is provided via prebuilt integrations with a third party.
"Basic" implies the capability is currently rudimentary.
"Native + Integration" implies the platform provides native capabilities as well as integrates with other tools for additional capabilities. This is primarily important for security and compliance requirements because they span the complete technology stack. For example, the platform can provide native capabilities for secrets scanning and security testing. In addition, it can integrate with other tools for software composition analysis, infrastructure policy as code and container scanning.

Source: Gartner (October 2021)