VMware vRealize Code Stream
Release higher quality applications faster while reducing operational risk

BENEFITS

- **Deliver applications faster**
  Become more responsive to business needs, while empowering new business opportunity and competitive advantage

- **Deliver more reliable applications**
  Automate deployment configuration and track artifacts to ensure correct versions are used in all delivery stages, from development through production

- **Leverage existing tools and processes**
  Adapts to an organization's evolving release automation maturity through orchestrating a combination of automated and manual tasks

- **Improve governance and visibility**
  Facilitate cross team collaboration via consolidated views and status across all stages in the pipeline

Figure 1. Continuous Delivery

Release Delivery Challenges

- **Lengthy application roll-outs:** multiple manual tasks accounting for a large portion of the release process.
- **Deployment failures:** deployments to production often fail, mostly due to avoidable errors e.g. misconfigured environment, deployed the wrong artifact version etc.
- **Poor visibility and traceability:** many tools are involved in the SDLC, but there is no clear visibility into the status of various builds and where they have been deployed.

How Code Stream Addresses these Challenges?

Code Stream allows teams to model and automate their software delivery pipeline across Development, Test and Production environments. It orchestrates the release process by acting as the glue between tools for Continuous Integration, Test, Provisioning, Configuration Management and Operations. It provides teams with high visibility, automation and control across the Software Development Lifecycle.
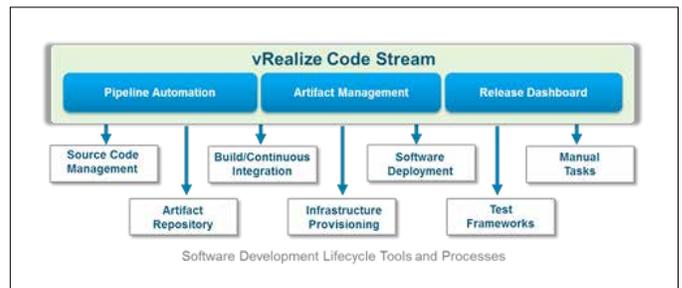
Pipeline Automation – Model any Release Process for any Kind of Software

Code Stream allows release teams to model any kind of release process for any kind of software, from application code to Infrastructure-as-code. The modeled applications can be simple, single node, on-premise to complex, multi-tiered, cloud-based next-gen applications. Code Stream is based on the faster, lightweight and open source Project Xenon™ engine. This makes it easy to deploy and run pipelines and tasks at large scale and it provides native support for running tasks in parallel.

Pipeline templates automate the tasks and governance policies used to build, deploy and test the software at each stage in the delivery process, as well as the gating rules between stages. Gating rules automatically move artifacts from one stage to the next stage when specified conditions are met. As organizations' release processes mature, Code Stream pipeline templates can be modified from partial to full-automation to evolve with them.
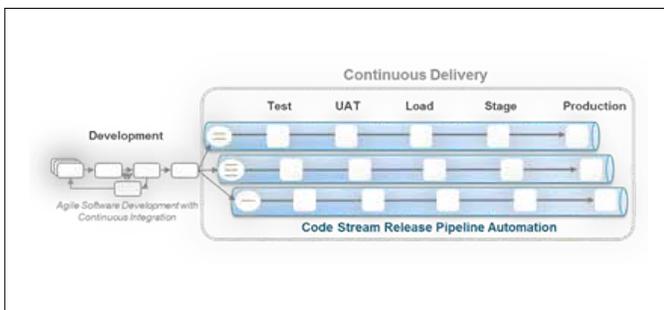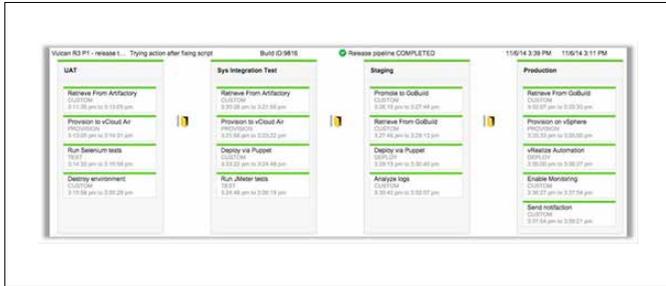
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An example of a pipeline is shown below.

Artifact Management – Assure the Right Artifact Versions for Each Release

As organizations move to continuous delivery with more frequent releases, keeping track of artifacts becomes increasingly more important. Code Stream supports the modeling and resolution of artifacts so that the right artifact versions are automatically retrieved when deploying a particular build version of an application.

One of the components of Code Stream's integration framework is an embedded version of JFrog's Artifactory repository manager. Artifactory is a distributed repository and repository management system that can store binary source code artifacts as well as provide remote access to other repositories. When used as part of Code Stream's pipeline automation, the combined solution assures consistency as code flows through the different groups from development to production

The Code Stream artifact repository can also store binary objects like virtual machine templates, vRealize Automation service blueprints etc. By using this capability, combined with the Code Stream Management pack, IT can track their artifacts and the associated dependent objects. The IT artifacts can now be treated the same as application artifacts and version controlled, tested and automatically released from Development to Production. This enables 'DevOps for IT' and 'Infrastruscture as Code' initiatives.

Release Dashboard and Reports – Improved Visibility and Productivity Tracking

As the pace of software releases accelerates, it becomes increasingly more important, but also more difficult, for organizations to track which applications, configurations and artifacts are deployed on the machines at various stages in the pipeline. Code Stream provides a summary view of all active pipelines and an end-to-end view of each pipeline where all users can see which tasks are completed, in progress or have resulted in an error. This helps identify problems so that they can be addressed quickly. Out-of-the-box reports help to measure release quality and efficiency over time. This unified view of the release status across environments empowers collaboration between teams to assure higher quality and faster delivery of new software releases.

Extensibility Framework – Leverage Existing Tools and Processes

Companies utilize variety of software development lifecycle tools to coordinate the build, deployment and testing tasks at each stage in the software delivery pipeline. Code Stream has out-of-the-box support for service blueprints that are modeled in vRealize Automation. Pipeline tasks can trigger Application provisioning and deployment using these blueprints. Code Stream also supports deployments using other configuration management tools like Puppet, Chef, and custom scripts. This integration is provided through various plug-ins.

Code Stream includes out-of-the-box support for a variety of software lifecycle tools including: Jenkins, Microsoft Team Foundation Server 2015 , Artifactory, Yum, Git and others.

In addition, Code Stream can automate almost any task by invoking vRealize Orchestrator workflows. A library of VMware and partner provide workflows and plug-ins, available on VMware Solutions Exchange, simplifies most customizations. Using some of these plugins, Code Stream can deploy to other IaaS and PaaS solutions. Finally, Code Stream includes public REST APIs to allow its pipeline executions to be initiated and managed from other applications, such as Jenkins.

Bridging the Gap between Dev and Ops

Code Stream is an application release automation solution that empowers development and operations teams to become more efficient and effective at releasing software.

• Task automation and process standardization reduces manual effort, and more importantly, accelerates completion of every task at each stage in the software delivery pipeline.

• Artifact management and governance policies help assure consistency at each stage in the process.

• Reporting and release dashboards allow all groups to monitor the status of a release and foster greater collaboration between teams.

Find Out More

For information or to purchase VMware products, call 877-4-VMWARE (outside North America, +1-650-427-5000), visit http://www.vmware.com/products or search online for an authorized reseller. For detailed product specifications and system requirements, refer to the VMware vRealize Code Stream installation and configuration guide.