Bitnami Packaging Toolchain for Systems Integrators, Consultancies, and Managed Service Providers

A service for automatic generation of images and templates to help with migration to public cloud infrastructure.

Who should read this?

Systems Integrators (SIs), Consultancies, Managed Service Providers (MSPs), Distributors, and Value Added Resellers looking for a simpler, more efficient, and repeatable way of delivering Linux-based solutions with open source and proprietary applications & infrastructure components on public cloud infrastructure (e.g. AWS, Azure, Google Cloud, Oracle Cloud).

How can you benefit?

- Deliver cloud-native DevOps-oriented solutions more easily on public clouds

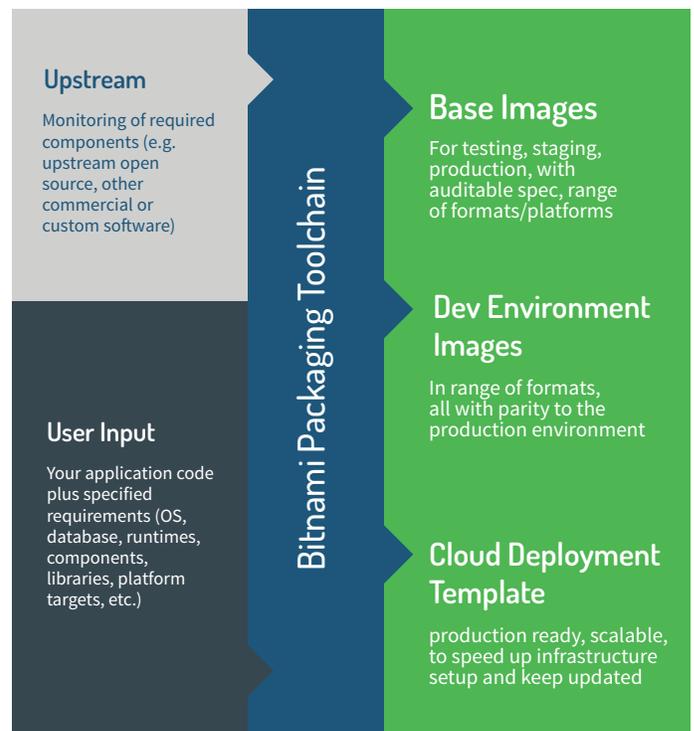- Migrate customers faster - with less risk, greater efficiency and more repeatability

Context

Bitnami offers a library of over 150 applications and developer stacks (mostly open source), published across nine cloud platforms including AWS, Azure, Google Cloud, and Oracle Cloud. We package in multiple formats including virtual machines and Docker containers. Our apps are launched over 1 million times every month and are renowned for being secure, optimized for the specific cloud platform, and up-to-date. CVEs are identified and vulnerabilities secured in the fastest possible time. Bitnami achieves this through an automation platform developed and battle-tested over a number of years: an end-to-end toolchain that automates every stage of application packaging. We are now making this available for others to use as a service.

Bitnami is actively looking to collaborate with SIs, MSPs, and consultancies on the new Packaging Toolchain service to help them deliver customer solutions on public cloud infrastructure faster, more efficiently and with less risk.

Bitnami Packaging Toolchain

The Bitnami Packaging Toolchain is a suite of multiple tools and services linked together to build cloud images, Docker containers, and cloud deployment templates. It combines your unique application code with the underlying operating system, libraries, components, and orchestration methods necessary to deploy it in a range of platforms. By doing so, it eliminates most of the boilerplate work needed to get a project started in the cloud. After the initial deployment, it provides a simple way to deliver new releases of the application or components and ensures that security vulnerabilities can be fixed in the fastest time possible. The Packaging Toolchain complements existing Continuous Integration (CI) and build infrastructure. It can be used end-to-end in its entirely, or in part in combination with your existing tools and services.

Upstream
Monitoring of required components (e.g. upstream open source, other commercial or custom software)

User Input
Your application code plus specified requirements (OS, database, runtimes, components, libraries, platform targets, etc.)

Bitnami Packaging Toolchain

Base Images
For testing, staging, production, with auditable spec, range of formats/platforms

Dev Environment Images
In range of formats, all with parity to the production environment

Cloud Deployment Template
production ready, scalable, to speed up infrastructure setup and keep updated

User Input

The Packaging Toolchain allows you to specify your requirements spec in the most appropriate way (e.g. API, jsonnet, or via the UI). You will be asked to upload (or specify the location of) your application code, and specify your requirements including Linux distro (e.g. specific version of Ubuntu, Debian, etc.), database (e.g. MySQL, MongoDB), components (e.g. Git, OpenSSL), system libraries and custom runtime/buildtime scripts. You can also select the target (AWS, Azure, Docker, VM, etc.) and any architectural requirements (e.g. load balancing, CDN, regions, integrations with cloud services). The inputs you specify will define a stack manifest used by the Packaging Toolchain to generate the appropriate outputs.

Packaging Toolchain – Main Components

- **Upstream Tracker**: Tracks for the latest releases of upstream applications, components, and libraries.

- **CVE Service:** Monitors for security vulnerabilities in the entire stack and, when a security update is released upstream, can trigger the build process.

- **Builder:** Automatically creates updated assets when upstream changes or vulnerability fixes are detected. Can be set to run automatically or with user approval.

- **Testing** to ensure that all components have been installed and configured properly, and that the underlying OS configuration is both secure and production-ready.

- **Publisher:** Releases the assets into the Release Library. The Bitnami Toolchain is highly parallelized, meaning that it can build installers, VMs, cloud images and containers simultaneously.

- **Release Library:** This artifact repository stores every output of the toolchain, so that they can be deployed in various environments on demand.

- **Templater:** Publishes orchestration assets (e.g. CloudFormation Templates, Helm Charts for Kubernetes, Terraform) that will be needed to deploy the assets together as a working environment.
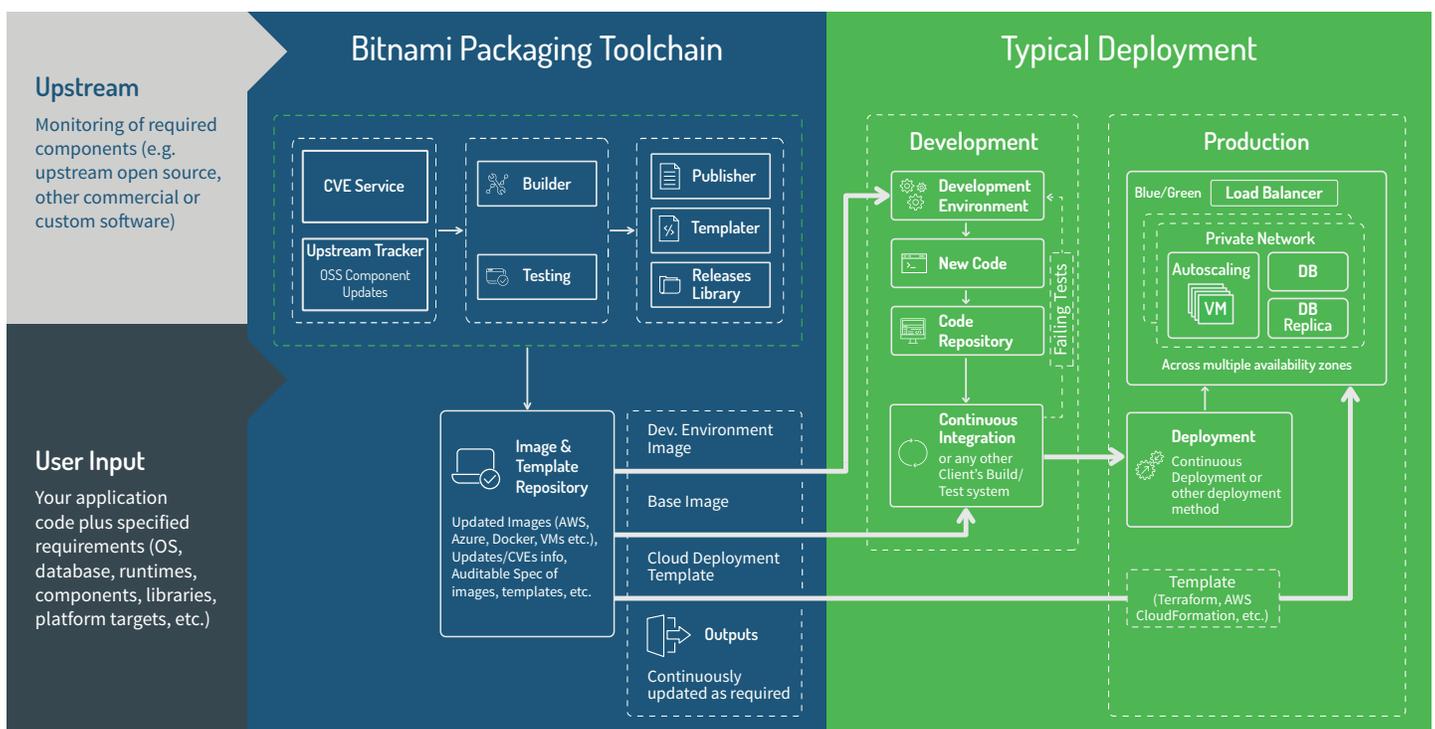
Outputs

The Packaging Toolchain produces the following artifacts to be used in deploying the customer application

- **Base Images** (e.g. an AMI) for testing, staging, and production.

- **Cloud Deployment Templates** (e.g. Terraform, AWS CloudFormation) to provision and manage cloud resources.

- **Development Environment Images** (e.g. Docker containers, VMs)

Integrating Outputs into Deployment Infrastructure

The Packaging Toolchain helps you to provision a flexible development environment that mirrors the production environment, realize a DevOps oriented solution with CI/CD, and deliver an immutable infrastructure.

After initial implementation, an update to your image will automatically trigger new builds. Every new commit will update the assets ingested into a CI system for further development and testing and, when ready, deployed to production servers via CD. You will be notified whenever there is an update or security patch for any part of the stack and will have the option to incorporate updates into new builds on demand.

Custom Image Service

If full access to the Packaging Toolchain is not required, Bitnami can produce custom images on request. If, for example, you have a consulting practice focused specifically on Drupal, Bitnami can provide a set of Drupal assets and templates that can be deployed in a wide variety of customer engagements on multiple cloud platforms along with matching Docker-based development environments.

Bitnami Mission & Company Overview

- Founded in 2005

- Focus from Day 1 – simplifying/automating installation & config of software

- InstallBuilder deployment engine powers products of thousands of orgs

  - Intel, Atlassian, Evernote, Autodesk, Huawei, Chevron, General Electric, US Air Force

- 80 staff and growing. Offices in the US & Europe

- Privately held, profitable, primarily bootstrapped

- Participant in YCombinator in 2013

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