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Guide

Fortify WebInspect Automation Workflows

Fortify WebInspect automation workflows use build automation tools to manage the dynamic scanning ecosystem, including QA testing and cloud deployments.

Automation Allows Tests to Be Run Simultaneously and at Scale

One of the goals of Securing DevOps (DevSecOps) is to build security testing into the development process. Integrating automated security testing makes it simpler for developers, QA staff, and security teams to work in sync across silos. Security testing can be part of the testing stack with similar frequency and integration as unit, integration, compatibility, and performance testing.

Dynamic analysis (DAST), combined with static analysis (SAST), provides more thorough coverage, but automating dynamic is more complex. You can either build your own tech stack, or borrow a framework. This guide helps you accelerate your automation by using existing test automation scripts/frameworks that other enterprises have already created as part of their DevOps practices.

Automating Fortify WebInspect by OpenText into existing DevOps systems and processes allows security tests to be run simultaneously and at scale.

Maven Plugin for Fortify WebInspect

1) Instantiate a Fortify WebInspect proxy, 2) route the traffic from integration tests, 3) save the proxy traffic as a workflow macro (and shut down the proxy), 4) configure a new scan, and 5) run the scan.

- **https://github.com/rsenden/fortify-integration-maven-webinspect/tree/webinspect-maven-plugin-2.1**

Disclaimer: This information is provided as part of a community effort to share approaches to automation. The information is provided as a guidance and is not an endorsement for any particular solution. There may be no Fortify QA and Support for content within this page.

Fortify WebInspect Automation—General Workflow

Automation workflows use a build automation tool that manages the scanning ecosystem via the following steps:

A. Security team sets up the security scanning steps as a “security task” that is called after a build and after app deployment, via the build automation tool.

B. Development teams submit code changes to the build automation tool and after the set operational period, the security task is triggered after the build and app deployment is complete.

C. On completion of the security task, the automation tool is set up to either pass or fail the build job based on the security risk defined by the security team.

D. The security vulnerability findings are captured in Fortify Software Security Center (SSC) by OpenText, from where they can be optionally moved to bug repositories via the integrations available on Fortify SCC.

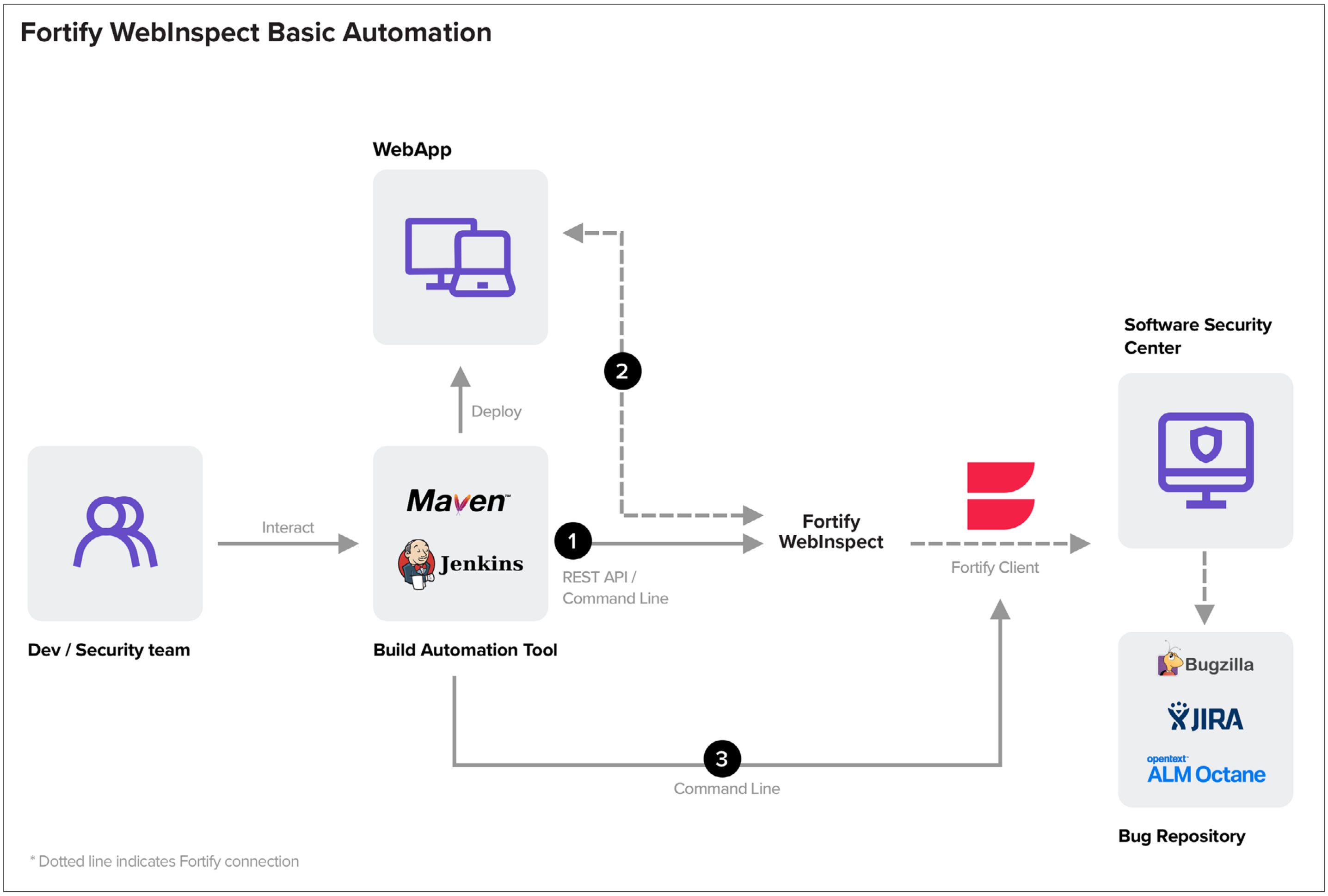

Figure 1. Basic Security Task—Fortify WebInspect

Basic Security Task—Fortify WebInspect

1. Health check the Fortify WebInspect sensor to ensure the scanner is available to schedule a scan.
2. Call the Fortify WebInspect REST API/ or command line to initiate a scan. This involves passing the necessary URL, settings file and login information.
3. Polling the sensor to check the status of scan and trigger the next steps on scan completion.
4. On scan completion, export findings as an FPR to a server containing Fortify Client and upload to Fortify SCC via the Fortify Client.

WebBreaker

Target solves Dynamic Application Security Test Orchestration (DASTO) with WebBreaker tool on GitHub. This open-source project utilizes WebInspect to provide greater agility and flexibility to deliver improved integration into the SDLC pipeline, Git workflows, etc.

- **https://github.com/target/webbreaker**

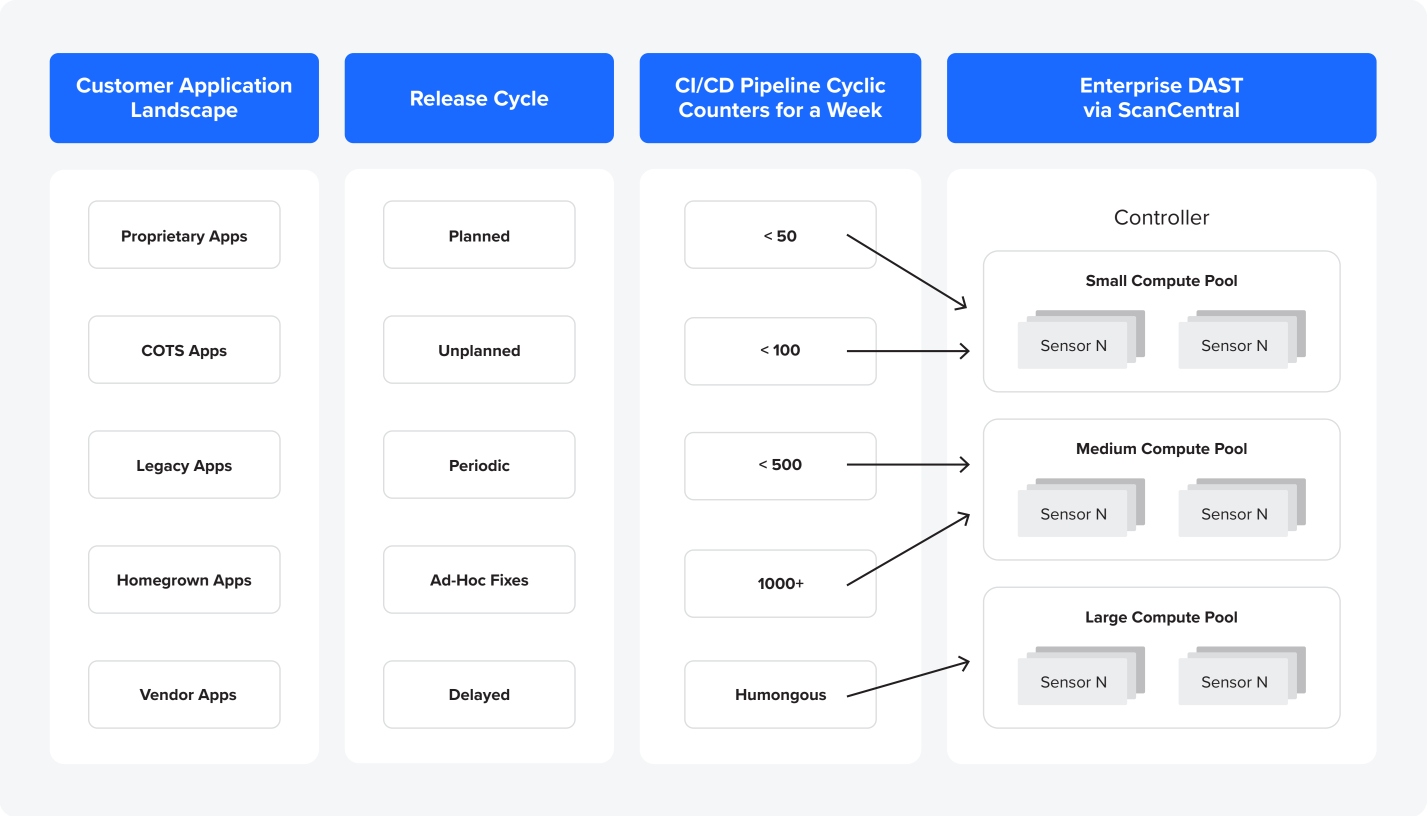

Figure 2. Basic Security Task—Fortify ScanCentrall DAST

Basic Security Task—Fortify ScanCentral DAST

Fortify ScanCentral DAST by OpenText enables orchestration and automation of dynamic security scans at a new level. Fortify ScanCentral DAST enables the operation of hundreds or even thousands of scans efficiently. We now have a platform that existing Fortify WebInspect Enterprise customers can migrate to, as well as interoperate with Fortify ScanCentral SAST by OpenText. The ability to scan multiple applications at once with Fortify ScanCentral further keeps security from being a bottleneck and impacting the velocity of development.

Proxy and QA Automation

Automation can utilize artifacts generated during QA functional tests (for example Selenium scripts to automate WI scans). The advantage of this approach is:

A. The functional testing often involves a sequence of actions that have a business logic associated with them, whereas it is impossible to model from a blind Fortify WebInspect automatic crawl.

B. The possibility to utilize the login sequence used during the functional testing and not create a separate Fortify WebInspect Login Macro. This involves configuring settings to exclude the login page from WI crawl or audit, and also that a logout doesn't occur during security scan.

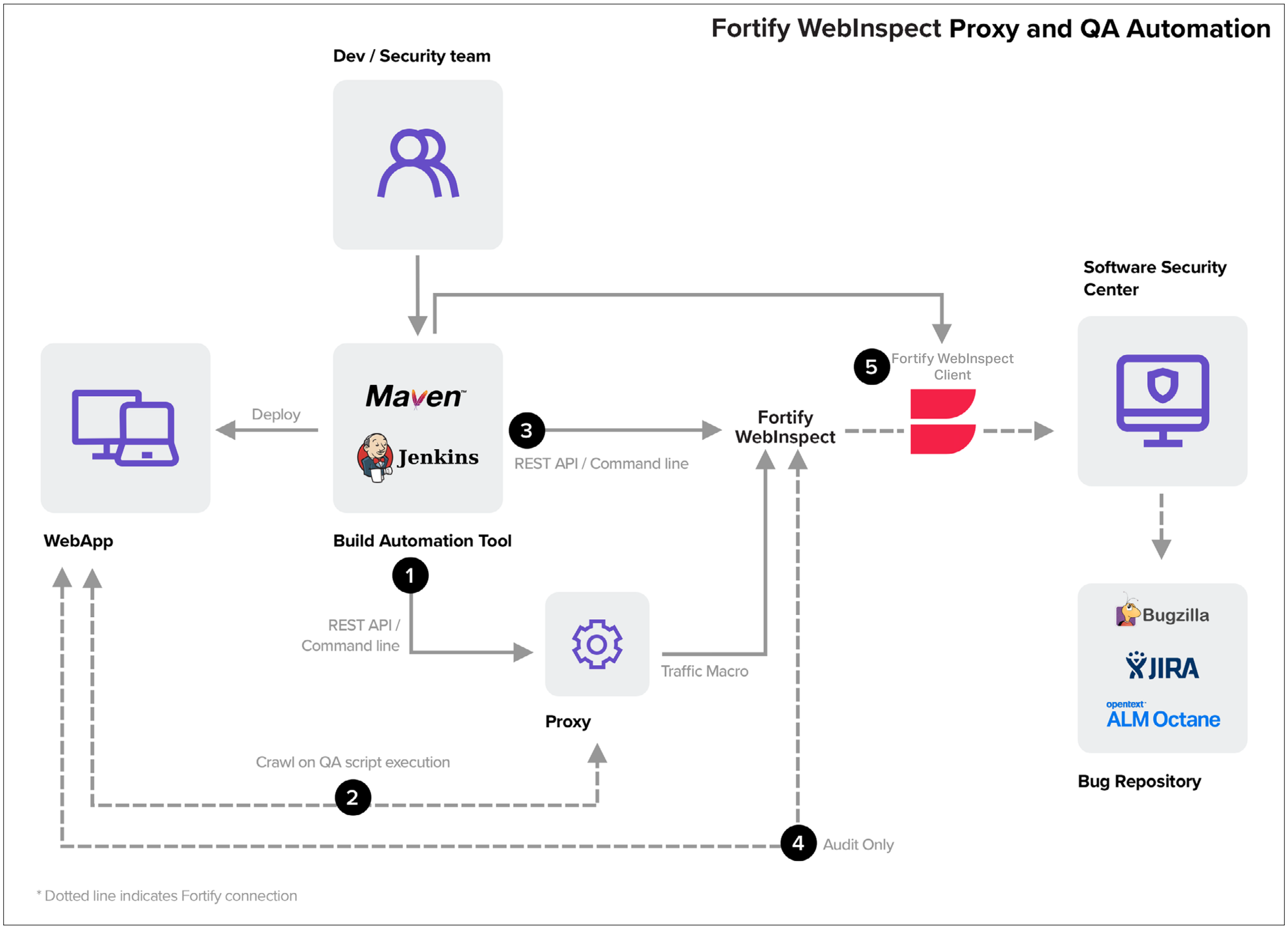

Figure 3. QA Security Task—Fortify WebInspect

QA Security Task—Fortify WebInspect

Add these steps to the Basic Security Task—Fortify WebInspect:

1. Spinning up a WI proxy via REST API and replaying the captured QA artifact to generate a traffic file. The traffic file is then saved as a WebMacro.
2. Using Command line/ REST API to modify default settings file. The settings file is overridden] a Workflow macro saved from the traffic file in step 1.

Useful Links for Automation

1. FoD BugTrackerUtility. Fully automated command-line utility for batch submission of Fortify SCC and Fortify on Demand vulnerabilities to various external systems.
   - **https://github.com/fod-dev/FoDBugTrackerUtility/tree/processrunner-bugtracker-root-3.2**
2. Fortify WebInspect APIs
   - **http://<hostname:port>/webinspect/swagger/ui/index#/**
3. Maven repository for Fortify-related artifacts
   - **https://github.com/rsenden/FortifyMavenRepo**

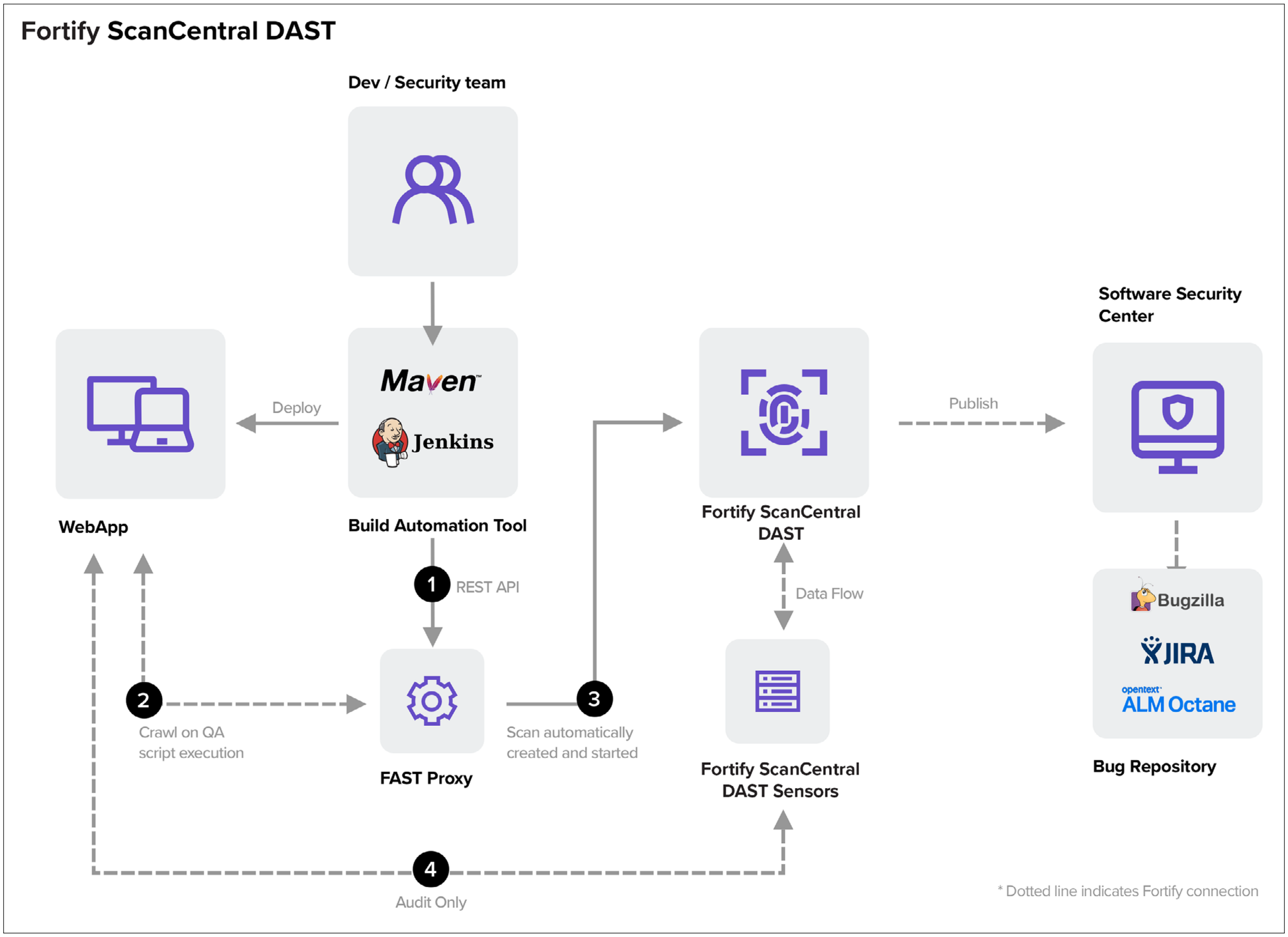

Figure 4. QA Security Task—Fortify ScanCentral DAST

QA Security Task—Fortify ScanCentral DAST

1. Same additional steps as for WI. For customers who don’t have access to WI desktop to spin up a proxy, download a license-free instance of a proxy available at the Fortify product line Marketplace.
2. After creating a settings file, the process of initiating a scan involves additional steps found in the Creating Scan Guide.

Automation in the Cloud

Another use case is automation in the cloud by deploying the sensors for WI, and dynamically scaling the sensor installation around the scale of application security testing under process.

1. Security team accesses the scan request pipeline and determines scaling/descaling of N Sensors. Assign licenses based on this requirement.
2. Security teams use the general workflow described in the general workflow and then loop through steps 1 and 2.

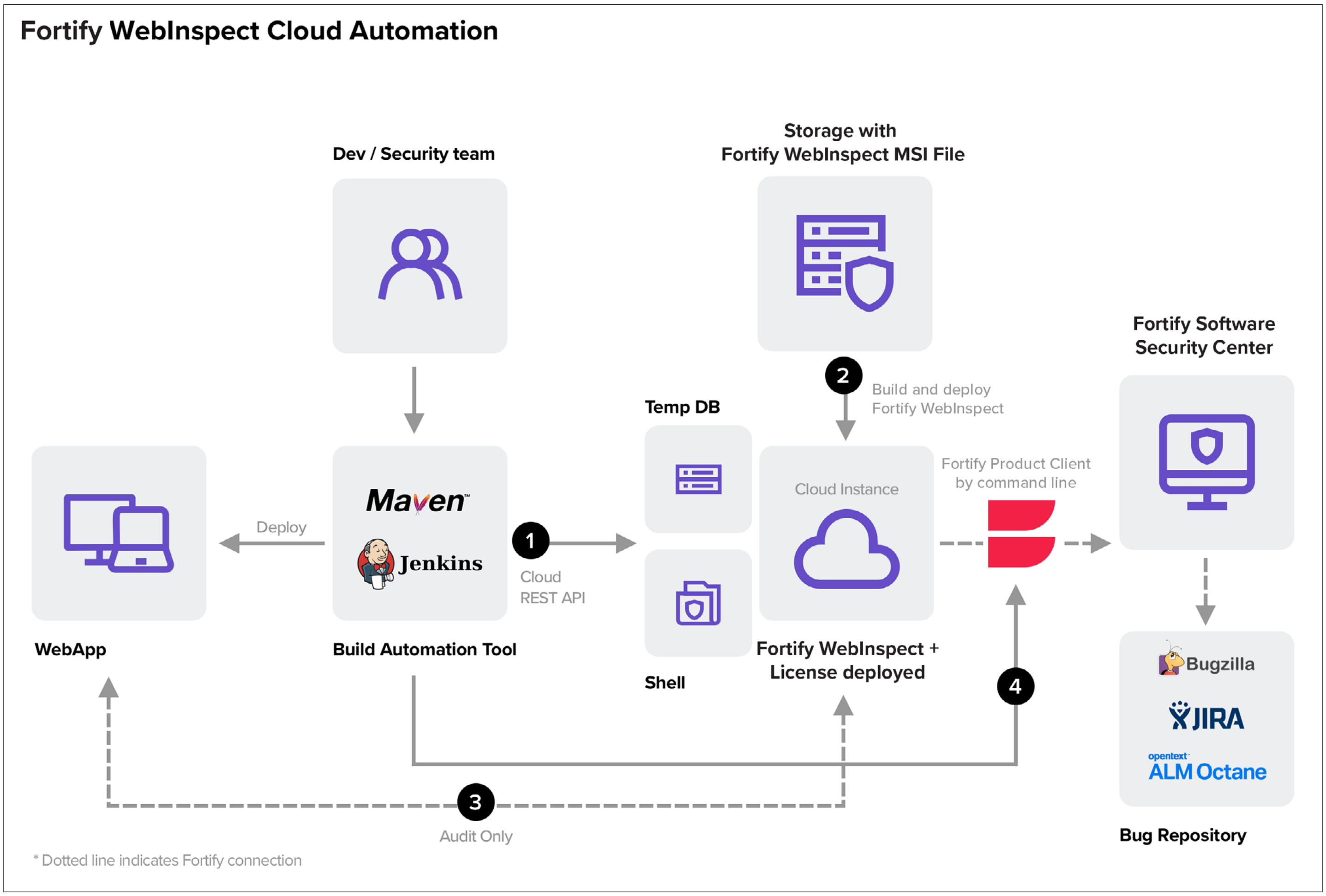
Fortify WebInspect Cloud Automation
Dev / Security team
Storage with Fortify WebInspect MSI File
Fortify Software Security Center
2
Build and deploy Fortify WebInspect
Temp DB
Cloud Instance
Fortify Product Client by command line
Maven
Jenkins
Deploy
1
Cloud REST API
WebApp
Build Automation Tool
Fortify WebInspect + License deployed
Shell
4
Bugzilla
JIRA
opentext ALM Octane
3
Audit Only
Bug Repository
* Dotted line indicates Fortify connection

Figure 5. Cloud Security task—Scaling for Fortify WebInspect sensors

Cloud Security Task—Scaling for Fortify WebInspect Sensors

1. A Fortify WebInspect installation MSI is stored in cloud storage and ready for deployment. [call location: cloud_memory]
2. Security team calls the cloud API to create a windows instance and uses the command line of the instance (C_Instance) to do a headless installation of Fortify WebInspect sensor from location: cloud_memory.
3. Necessary settings and macro files are deployed over the instance.
4. A scan is triggered in the command line (C_Instance) using the REST APIs of Fortify WebInspect in that instance.
5. On scan completion, export findings as an FPR to a server containing Fortify Client and upload to Fortify SCC via the Fortify Client.

Learn more about dynamic application security testing software.

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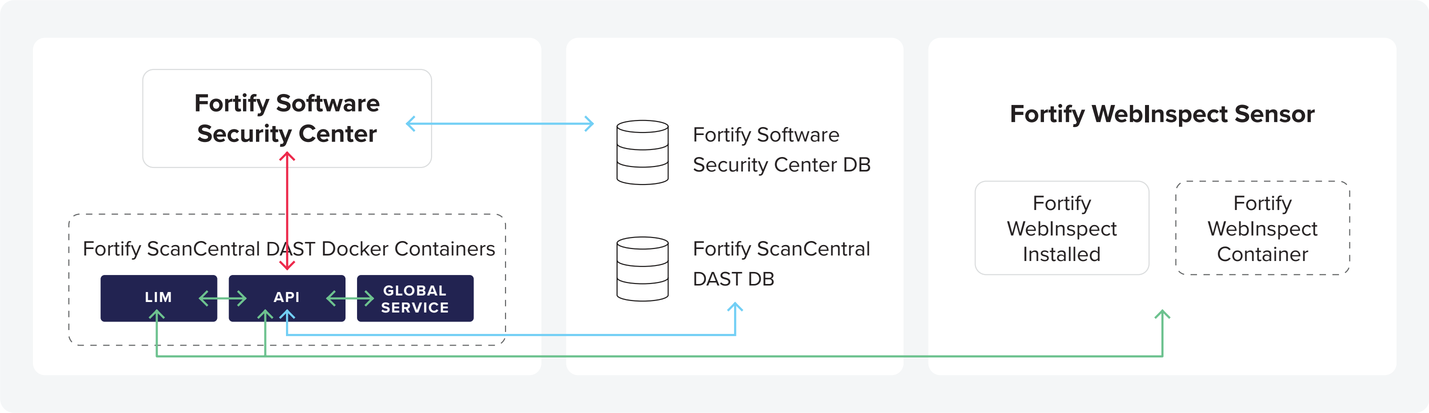

Fortify Software Security Center
Fortify ScanCentral DAST Docker Containers
LIM
API
GLOBAL SERVICE
Fortify Software Security Center DB
Fortify ScanCentral DAST DB
Fortify WebInspect Sensor
Fortify WebInspect Installed
Fortify WebInspect Container

Figure 6. Cloud Secuirty Task—Scaling for Fortify ScanCentral DAST Sensors

Cloud Security Task—Scaling for Fortify WebInspect Enterprise Sensors

Fortify ScanCentral DAST is a scalable architecture that enables Horizontally Scaling through multiple containerized versions of Fortify WebInspect (known as Sensors) that can parallel process JavaScript, DOM Rendering, and other activities. Horizontally Scaling enables dramatically reduced scan times without permanently dedicating resources. As a result, Fortify ScanCentral DAST can scan very large applications in a fraction of the time, which enables integration into CI/CD pipelines and shifting left. Fortify SCC can be used for onboarding an application, scheduling scans, and setting limits on scan parameters. All of this is done through a Dockerized deployment, enabling you to have multiple sensors.

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