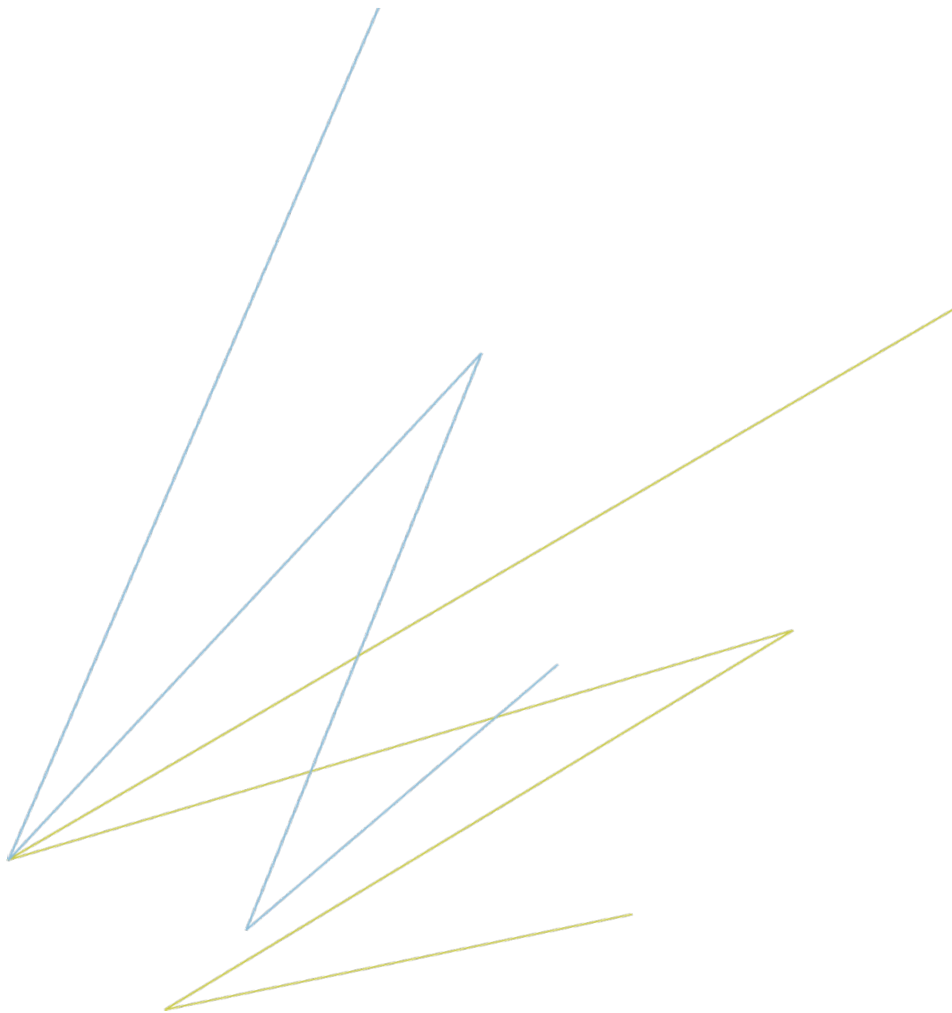


# Criteria i

used at least five modern and open-source technologies, regardless of architectural layer (frontend, backend, etc.)

*Doing What's Right—Doing What Works*



Criteria i:

used at least five modern and open-source technologies, regardless of architectural layer (frontend, backend, etc.)

This document includes a list of the technologies used to develop and deploy the myHealthAlerts prototype and provides the type of open-source license used for each:



**Grails** – Open source web application framework built on the idea of rapid prototyping and low configuration effort.

**Why we used it:** Grails gives us the ability to quickly create a full stack application, including a file or in memory base database, out of the box with minimal effort to create a deployable artifact (war file).

**License:** Apache 2.0 License / GNU General Public License



**Groovy** – Object-oriented programming language for the Java platform.

**Why we used it:** Built on Java, Groovy provides several key features that Grails uses to create its web framework. These features include closures, collection utilities, domain specific languages, functional programming patterns, and meta programming.

**License:** Apache 2.0 License / GNU General Public License



**Java** – General-purpose object-oriented computer programming language.

**Why we used it:** Java is a mature and mainstream high level programming language. It is supported by several web application frameworks and web application servers, giving us the ability to choose what framework and server works best for the situation. Java is cross platform giving developers the ability to develop on several operating systems.

**License:** Binary Code License Agreement / GNU General Public License

Criteria i:

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# Jenkins

**Jenkins** – Open source continuous integration tool.

**Why we used it:** Jenkins is a highly extensible application. It allows us to pull from a public Git repository then build, test and deploy our prototype in a rapid, stable and monitored fashion to an externally facing Apache Tomcat application server.

**License:** Apache 2.0 License / GNU General Public License / MIT License



# CentOS

**CentOS Linux Distribution** – Open source Linux distribution based on Red Hat Enterprise Linux (RHEL).

**Why we used it:** Using CentOS, we were able to take advantage of an enterprise-grade distribution of Linux. It's broad adoption and stability gave us a secure and rock solid platform to use as our foundation for our prototype.

**License:** Centos Creative Commons Attribution 3.0 / GNU General Public License



**Linux KVM/Qemu (Virtualization stack)** - (Kernel-based Virtual Machine) is a full virtualization solution for Linux on x86 hardware containing virtualization extensions (Intel VT or AMD-V).

**Why we used it:** KVM is an open source, widely used virtualization stack that is not only fast but very extensible. It's speed and scriptable nature allows it to be leveraged for rapid development environments.

**License:** GNU General Public License / Lesser General Public License

Criteria i:

used at least five modern and open-source technologies, regardless of architectural layer (frontend, backend, etc.)



**Puppet** - Very popular, open source configuration management utility.

**Why we used it:** Puppet allows us to provision virtual machines and to have confidence in the underlying virtual machine's configuration. It's configuration enforcement and reporting mechanisms make it a welcomed addition to our prototype's development and deployment environments.

**License:** Apache 2.0 License



**Tomcat** - Open source web server and servlet container.

**Why we used it:** Using a combination of Tomcat and Jenkins, we are able to continuously, rapidly and securely deploy to a lightweight Java application server with minimal overhead. The scope of the prototype was ideal for leveraging Tomcat's speed and usability.

**License:** Apache license 2.0



**Bootstrap** – A popular User Interface (UI) framework with many styling abilities out of the box.

**Why we used it:** We were able to create an incredibly rich website with responsive design using Bootstrap's preprocessing and screen scaling features.

**License:** MIT License

Criteria i:

used at least five modern and open-source technologies, regardless of architectural layer (frontend, backend, etc.)



**Docker** – Docker is an open platform for building, shipping and running distributed applications. It gives programmers, development teams and operations engineers the common toolbox they need to take advantage of the distributed and networked nature of modern applications.

**Why we used it:** Docker was an excellent candidate for deploying a web application in an isolatable container.

**License:** Apache license 2.0