**OpenShift Container Platform**

**POC Scope document**

**Prepared for: <CUSTOMER>**

[**Preface**](#_71lrhi4ltn1m)

[**Confidentiality, Copyright, and Disclaimer**](#_kxrgui7urg0p)

[**Audience**](#_w8wehb7tg1uu)

[**Background**](#_dxj5n8jcxd19)

[**Glossary**](#_ug8q8vr06ksn)

[**Overview**](#_1nguwj7kq4j4)

[**PROOF OF CONCEPT**](#_x9x2nnvxgn7)

[**3.1 Goal**](#_wxul0ounehbq)

[**3.2 POC Title**](#_5ipsgenvew7d)

[**3.3 POC Description**](#_cg16gowxehp1)

[**3.2 Scope of Work**](#_927w6pqgaeym)

[**3.4 Point of Contact**](#_46nfz1hj23mf)

[**3.5 Red Hat Participants**](#_hsbe3fu7lebc)

[**3.6 Location**](#_bf9txl5qfh3)

[**3.7 Red Hat Support Information**](#_tt98y2d21ylp)

[**3.8 Prerequisites**](#_63bdk0bjjz65)

[**3.9 Limitations of POC Environment**](#_u39ngw55u5n2)

[**3.10 Out of Scope**](#_3qzhq4u2fx72)

[**Approved Use Case Definitions**](#_vakpbghljwcw)

[**4.1 Use Case: Installation and Infrastructure Primer**](#_7i79bgr84fn3)

[**4.2 Use Case: Developer Primer part 1**](#_fxi6difmmgyh)

[**4.3 Use Case: Developer Primer part 2**](#_oehtrayr0pxy)

[**4.4 <CUSTOMER> Use Cases**](#_ud534cmsp88p)

[**Responsibility of the parties**](#_cf83rdqpuu7n)

[**What Red Hat will Provide**](#_5nerfhcemgwo)

[**What Customer will Provide**](#_h3nnnq7ewbo6)

# Preface

## Confidentiality, Copyright, and Disclaimer

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## Audience

This document is intended for Client project management and technical staff responsible for planning and preparation prior to a Red Hat Proof of Concept.

## Background

This document details the business goal, proposed solution, success criteria, and client requirements for the proof of concept.

## Glossary

The table below provides a glossary of the terms and acronyms used within this document.

|  |  |
| --- | --- |
| **Term** | **Description** |
| DNS | Domain Name Service |
| LDAP | Lightweight Directory Access Protocol |
| ETCD | Distributed datastore |
| Master | Service Orchestration |
| Node | Houses application runtime and database containers |
| State | General application state; this data is stored using etcd |
| RHEL | Red Hat Enterprise Linux 7.3 |
| BIND | Berkeley Internet Name Domain |
| RHSM | Red Hat Subscription Manager |
| RPM | Software packaged in a format which facilitates dependencies and installation/removal  The RPM Package Manager which processes .rpm files for installation |
| VM | Virtual Machine |
| OCP | Openshift Container Platform v3 |
| Git | Source Code Management system |
| FQDN | Fully Qualified Domain Name |
| Container | Logical container housing application runtime environment or database utilizing docker |
| PaaS | Platform as a Service |
| oc | Command line tool for interfacing with OpenStack Enterprise |

**Table 1 1: Terms Defined**

# Overview

Red Hat OpenShift Container Platform enables organizations to adopt rapid self-service deployment of application environments for developers. Built using the power of SELinux, Docker, Kubernetes, and ETCd; OpenShift provides secure and isolated operating environments for user applications. OpenShift Container Platform is capable of scaling applications as demand increases, as well as reducing the scale of applications as demand subsides.

For organizations interested in test-driving OpenShift Container Platform in a proof-of-concept (POC) environment, this guide will provide a listing of prerequisites and requirements, describe an ideal test environment, list test criteria and optional components, and explain what items are not covered under the terms of a POC agreement. Upon successful completion of a POC, a customer should have a strong understanding of the benefits of OpenShift Container Platform and be able to make an informed decision on moving forward with a production implementation.

# PROOF OF CONCEPT

## 3.1 Goal

Reduce app development time with openshift.

## 3.2 POC Title

Openshift Container Platform 3 POC for <CUSTOMER>

## 3.3 POC Description

Red Hat will set up a 60-day supported OpenShift 3 installation in the <CUSTOMER> environment. This environment will be used by the <CUSTOMER> development team to deploy their applications and conduct evaluation.

## 3.2 Scope of Work

1. Install Openshift Container Platform 3 as on-premise PaaS in <CUSTOMER>'s environment with 1 master and 3 nodes
2. Demonstrate client tools to access Openshift using Openshift cli tools and web console
3. Demonstrate sample applications run in this environment using STI
4. Demonstrate running pre-built docker images.
5. Demonstrate a scaled application
6. Access Database from a container
7. Go over Operations toolset

## 3.4 Point of Contact

|  |  |  |
| --- | --- | --- |
| **Name** | **Title/Role** | **Email** |
|  |  |  |
|  |  |  |

## 3.5 Red Hat Participants

|  |  |  |
| --- | --- | --- |
|  |  |  |
| Nick Nachefski | App Specialist SA | nick@redhat.com |
|  |  |  |
|  |  |  |
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|  |  |  |

## 3.6 Location

<POC Location>

## 3.7 Red Hat Support Information

This POC comes with a 60 day support for OpenShift provided by Red Hat Global Support. <CUSTOMER> can contact Red Hat support and open support cases by opening a support ticket or calling the support phone number  
  
• Customer Portal:<https://access.redhat.com/support/cases/new>

• Support Number: (888) 467-3342

## 3.8 Prerequisites

Before agreeing to undertake a POC, it is important to ensure that specific prerequisites are met (These are minimum requirements):

Detailed Pre-reqs can be found here:

https://docs.openshift.com/container-platform/3.6/install\_config/install/prerequisites.html

* Infrastructure (physical or virtual machines):
  + Master (1 VM)
  + 16GB RAM (32GB Recommended)
  + 4 CPUs (1 socket 4 threads or 2 socket 2 threads is fine)
  + 30GB HDD (For OS)
  + >=50GB formatted and mounted as /var/lib/docker
  + >=30GB formatted and mounted as /var/lib/openshift
  + 50 GB HDD (For running Docker)
  + Prefer This to be a “raw” un-formated HDD
  + A static IP address that is Routable
  + Formatted & mounted 120G HDD for registry (20GB), logging (50GB), metrics (50GB).
  + Node Host(s) (2-3 VMS)
  + 16GB RAM (32GB Recommended)
  + 4 CPUs (1 socket 4 threads or 2 socket 2 threads is fine)
  + 30GB HDD (For OS)
  + >=50GB formatted and mounted as /var/lib/docker
  + >=30GB formatted and mounted as /var/lib/openshift
  + 50 GB HDD (For running Docker)
  + Prefer This to be a “raw” un-formated HDD
  + A static IP address that is Routable
* RHEL 7.3 from standard Red Hat ISO on these hosts
  + - Not customized image nor any customization with post installation scripts.
    - SELinux should be **enforcing**
    - Firewall should be **running**.
    - NetworkManger 1.0 or later
    - The “Minimum” installation profile is recommended.
* If using a NAT IP address for access. Please make sure that it NATs to the Master's IP address with ports 80/443 open.
* If need to review cockpit, Please make sure that it NATs to the Master's IP address with ports 9090 open.
* Internet connectivity from Nodes is required for certain functionality (Eg: node.js, maven, rubygems)
  + Proxy Configuration is available
  + “Disconnected” install is available but not recommended
* Choose a domain name for Openshift
  + Example: *cloudapps.example.com*
  + Using the above example, the applications will get a name as:
    - *appname-projectname.cloudapps.example.com*
  + DNS entries MUST be resolvable to the hostname of the Master and Node (examples)
  + ocp3-master.example.com
  + ocp3-node1.example.com
  + ocp3-node2.example.com
* DNS Configuration: Wildcard DNS entry must be made pointing to the IP address of the Master
  + If you're using a NAT system...the IP of the nat
  + Wildcard entry example: *\*.cloudapps.example.com*
* Activate the Openshift subscriptions provided by Red Hat
  + If using a Satellite Server, synchronize the relevant channels to the Satellite Server.
* Developer workstation/Client System: The following software will be installed on the developer workstation used for testing Openshift.
  + Git
  + oc (openshift command-line)
  + Eclipse or Jboss Developer Studio (optional)
* Firewall rules must be in place if there is a Firewall between the master/nodes
  + <https://docs.openshift.com/container-platform/3.4/install_config/install/prerequisites.html#prereq-network-access>

## 3.9 Limitations of POC Environment

* Maximum of 1 Master and 3 nodes will be created
* Maximum of 10 user accounts will be created. Client can add additional accounts as needed.
* A dedicated test environment is required to prevent impact to production systems

## 3.10 Out of Scope

The following items are out of scope for these POC. These may be handled by the client post POC as next steps or as a Paid Engagement (using “Smart Start” from professional services).

* [LIST ITEMS]

# Approved Use Case Definitions

## 4.1 Use Case: Installation and Infrastructure Primer

OpenShift provides the infrastructure to be able to build and deploy containerized applications. There are key components that are at the core of the functionality of OpenShift.

Description:

* Installation of OpenShift
* Deploy and Configure the SDN
* Deploy and Configure the Routing Component
* Deploy and Configure the Docker Registry
* Node Management and Troubleshooting
* Install Monitoring Component (Cockpit)
* Install EFK stack (optional)
* Install Environment Metrics gathering (optional)
* User Management

Success Criteria:

* Install OpenShift using the “Advanced” method (leveraging Ansible)
* Deploy, Configure, and understand the following components/concepts
  + Routing using HAProxy and SDN networking
  + Docker Registry for application image storage
  + Understand Templates
  + Understand how DNS is used within OpenShift
  + Understand how to use Cockpit
  + Understand how metrics are used
  + Become familiar with how Log Aggregation works.

## 4.2 Use Case: Developer Primer part 1

Openshift supports application creation and updates via command line, web console and IDEs such as JBoss Developer Studio and Eclipse. Applications using source code (S2I); and deploy existing images.

Description:

* Setting up client tools
* Creating an application from an existing Docker Image using CLI
* Create an application using Docker Build Strategy using CLI
* Using Web Console
* Creating an application using JBoss EAP builder image
* Creating an application with frontend and backend database using templates
* Scale Up Scale Down and Idle the application instances
* Binary deployment of a war file

Success Criteria:

* Get familiar with how to interact with OpenShift
  + Using the “oc” client binary
  + Using the Web UI
* Deploy a docker container
* Build a container using a “Dockerfile” with OpenShift
* Demonstrate how to deploy Java Based Applications
* Wiring together multi-tier applications

## 4.3 Use Case: Developer Primer part 2

Continuing with the Developer experience with OpenShift; we will get into more advanced topics with OpenShift, as it pertains to development.

Description:

* Using SSL In your Application
* Blue-Green Deployments
* SCM - Web Hooks
* Rollback Applications
* Code Promotion Across Environments
* Dynamic Configuration updates using ConfigMap
* Changing code on the fly

Success Criteria:

* Demonstrate how OpenShift can be used for automated application deployment
* Demonstrate how to manage application configurations with OpenShift

## 4.4 <CUSTOMER> Use Cases

During the POC **<CUSTOMER>** has provided use cases that they would like to go through

Description:

* [ITEMS]

Success Criteria:

* [ITEMS]

# 

# 

# Responsibility of the parties

## What Red Hat will Provide

* Red Hat will provide software entitlements to be used during the POC for only those product(s) to be tested:
  + Openshift Container Platform
  + Openshift JBoss EAP (optional)
* Red Hat will provide access to product support through our Global Support Services (GSS) as part of the evaluation process.
* Red Hat will provide a Solution Architect and/or Domain Architect to lead the engagement and to ensure all success criteria are met.

## What Customer will Provide

* Customer will provide a single point of contact for the coordination of on-site and remote engagements. Customer will provide a dedicated test or development lab that is completely isolated from production systems and equipment. Customer will provide access to equipment/servers and/or virtual consoles where necessary. Customer will provide a Red Hat Network account (login id), or ensure the point of contact has the credentials, for the purpose of obtaining evaluation entitlements, access to software and documentation, and access to Red Hat's customer portal for ticketing. If the POC is installed on an external cloud (eg: Amazon EC2), the customer will provide account credentials or ensure the point of contact has the credentials.