SOLUTION BRIEF

Enterprise Cloud Software
Highly Distributed Containerized Cloud Platform

Introducing a Fully Integrated Turnkey Solution from Intel and Red Hat

Accelerate your path to an enterprise-grade Kubernetes* solution with the Red Hat OpenShift* Container Platform Deployable Solution Architecture

The Red Hat OpenShift Container Platform DSA is designed as a turnkey solution to deliver:

- A wholly integrated end-to-end hardware and software solution capable of deployment in about an hour, with high availability and persistent storage, automated with Red Hat Ansible, and configured to be horizontally scalable
- A bare-metal on-premises solution purpose-built for dev-test use cases utilizing hardware infrastructure including Intel® Xeon® Scalable processors, Intel® Solid State Drive (SSD) technology, and Intel® Network Interface Cards (NICs)
- A fast method of releasing cloud-based, stateless applications to a target audience, providing customers with an enterprise-grade Kubernetes* solution

Executive Summary

As technologies change and customer requirements shift, many businesses struggle to support an influx of new applications and services. Modernizing the data center has become mission-critical, and success in the digital ecosystem hinges on updating IT environments.

The Red Hat OpenShift* Container Platform Deployable Solution Architecture (DSA) implements Red Hat's enterprise-grade container application platform using Red Hat Ansible*. Designed to meet the demands of organizations that require highly streamlined deployment and manageability, the Red Hat OpenShift Container Platform DSA enables customers to release new services to market faster, more efficiently, and at scale.

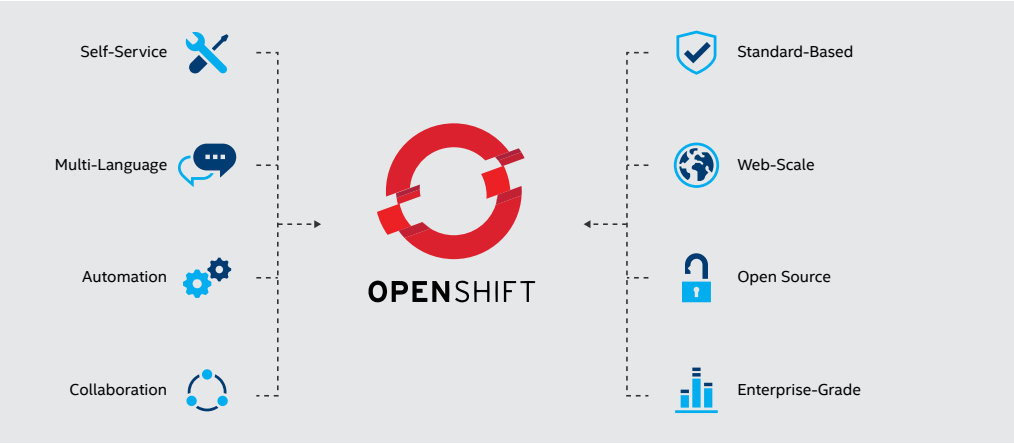

Figure 1. Red Hat OpenShift* features enable a fully integrated solution for provisioning, managing, and scaling container-based applications.

Benefits

OpenShift enables customers to implement an on-premises, private container platform, customizable for full interoperability with their local systems and environments. With pre-configured "smart default" settings and the flexibility to support customized configurations, the Red Hat OpenShift Container Platform DSA empowers businesses to develop 36% more applications and major features per year.[1] The default Red Hat OpenShift Container Platform DSA addresses high availability and storage needs by using GlusterFS* and can be deployed in about an hour—as opposed to the typical six hours or more.

The Red Hat OpenShift Container Platform DSA: Simplifying Deployment and Manageability

Many customers want a fully customizable OpenShift solution but don't have the time or resources to do their own customization. With a highly available configuration and virtual storage through GlusterFS, the Red Hat OpenShift Container Platform DSA takes the guesswork out of deployment, delivering all the advantages that OpenShift offers to enterprises with on-premises infrastructure.

Release Schedule and Availability

The Red Hat OpenShift Container Platform DSA is an ongoing program from Intel, Red Hat, and their OEM partners. Released in August 2017 as a collaboration with Lenovo, the first design provided a base configuration of Red Hat OpenShift. A subsequent release in November 2017 included an upgrade to OpenShift 3.6 and base configuration for GlusterFS. Additional releases will include support for stateful sets and enhance the diversity of hardware and software components available to customers. It will also enable the platform to support additional workloads, simplifying IT management. Each solution includes a predefined bill of materials and Ansible-powered infrastructure automation.

The Red Hat OpenShift Container Platform DSA starter kit is a fully converged and automated solution using Ansible and bare-metal provisioning technology to eliminate much of the manual work around orchestrating containers. It includes:

- Lenovo* System x3550 M5 rack servers distributed among three master nodes, two infrastructure nodes, six worker nodes, and a single bastion host, along with a leaf-spine network topology
- The Intel® Xeon® processor E5-2600 v4 product family (44 cores per server), with fast, energy-efficient IBM* TruDDR4 Memory and Intel® SSD technology in a RAID 1 configuration for operating system high availability

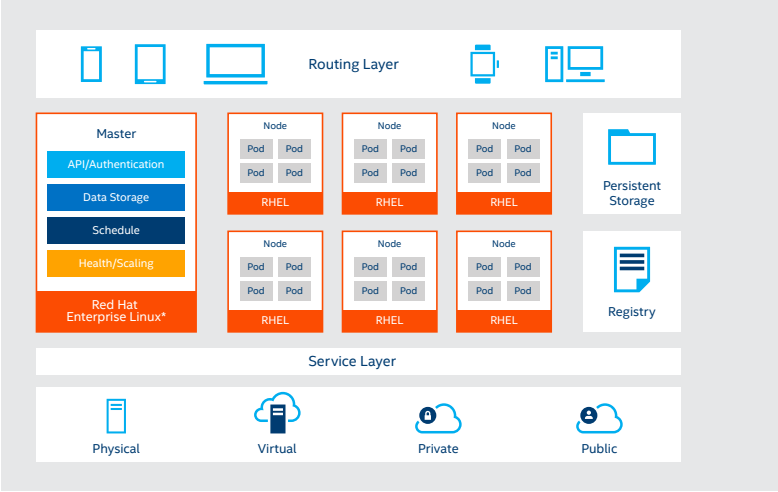

Figure 2. The Red Hat OpenShift Container Platform DSA solution.

With up to 28 cores and 56 threads—and memory speeds up to 2,666MHz—Intel® Xeon® Scalable processors are built to meet the most demanding workloads.

Conclusion

The Red Hat OpenShift Container Platform Deployable Solution Architecture delivers a turnkey end-to-end solution running on a cluster of 15 servers based on the latest Intel® technologies—enabling customers to focus their resources on developing innovative applications instead of planning, deploying, and managing entire on-premises cloud infrastructures.

Next Steps

For more on the Red Hat OpenShift Container Platform DSA, including partner information, visit **openshift.com**

Configurations:
Master Nodes: Three Lenovo System x3550 M5: Intel® Xeon® processor E5-2680 v4, 128GB RAM, two 150GB Intel® SSD Data Center S3520 Series drives in RAID 1 configuration.
Infrastructure Nodes: Two Lenovo System x3550 M5: Intel® Xeon® processor E5-2620 v4, 128GB RAM, one 150GB Intel® SSD Data Center S3520 Series drive in RAID 1 configuration.
Worker Nodes: Six Lenovo System x3550 M5: Intel® Xeon® processor E5-2680 v4, 384GB RAM, two 150GB Intel® SSD Data Center S3520 Series drives in RAID 1 configuration.
Bastion: One Lenovo System x3550 M5: Intel® Xeon® processor E5-2620 v4, 128GB RAM, two 150GB Intel® SSD Data Center S3520 Series drives in RAID 1 configuration; this node provides the runtime environments for containers and has the required services to be managed by the master. This node also has the required services to run pods, including Docker, a kubelet, and a service proxy.

1."The Business Value of Red Hat OpenShift." IDC, 2016.