Fast, Scalable Cloud-native Storage for Containerized Telco Applications

Portworx by Pure Storage helps telcos overcome the challenges of scaling applications.

As telecommunications companies (telcos) accelerate their 5G rollouts, providing innovative products that attract new customers is critical to continued growth. To build the foundation for this growth and enable successful digital initiatives, telcos are embracing a digital-first approach that requires new technologies, such as containerized applications. Portworx® by Pure Storage®, along with with Red Hat OpenShift Container Platform, can help telcos build a foundation that supports new, innovative, and scalable apps to drive new growth.

The Challenges of a Digital-first Approach

A digital-first approach requires the adoption of key technologies and processes that let telcos gain insights from massive amounts of data, such as data from cloud-native software stacks built on hybrid-cloud infrastructure. These new software stacks can include a combination of open-source applications; open-source and traditional databases; and microservices that rely on Kubernetes automation, OpenShift containers, and the Red Hat Ansible Automation Platform.

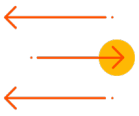
One of the challenges telcos face when deploying these technologies is that the traditional storage systems that telcos have relied on in the past were not built to handle containers and Kubernetes. As telcos push their applications to gather and process more data, traditional storage limitations can negatively impact performance and prohibit scaling. Additionally, new technology adoption often follows new process adoption, such as DevOps. New technologies and processes can require teams outside of the typical IT structure, such as site reliability engineers (SREs), to manage new application stacks.

A Digital-first Approach Enables New Opportunities

Telcos are embracing a digital-first approach that can help attract new 5G customers, who are critical to growth.

Portworx and Red Hat Help Telcos Scale Applications

Portworx and Red Hat technologies help enable fast, scalable cloud-native storage for containerized applications.



Portworx End-to-End Data Management

Integrate with any infrastructure for bare-metal, virtualization platforms, major public clouds, and hyperscalers.

When combined with OpenShift, Portworx Enterprise Kubernetes Data Services Platform helps telcos overcome the challenges of application scaling. This combination enables fast, scalable cloud-native storage for containerized applications and containerized network functions (CNF) for telcos.

Portworx Enterprise and OpenShift Container Platform Enable Modern Containerized Applications

As an end-to-end data-management platform, Portworx Enterprise delivers telcos cloud-native storage for containerized applications running on Kubernetes platforms, including OpenShift. Portworx is a top Kubernetes data-services platform and is used by Forbes Global 2000 companies, like KPN. Portworx was built from the ground up to support data-rich applications on Kubernetes in production.[1] The platform supports bare-metal and leading virtualization platforms, in addition to all major public clouds and hyperscalers.

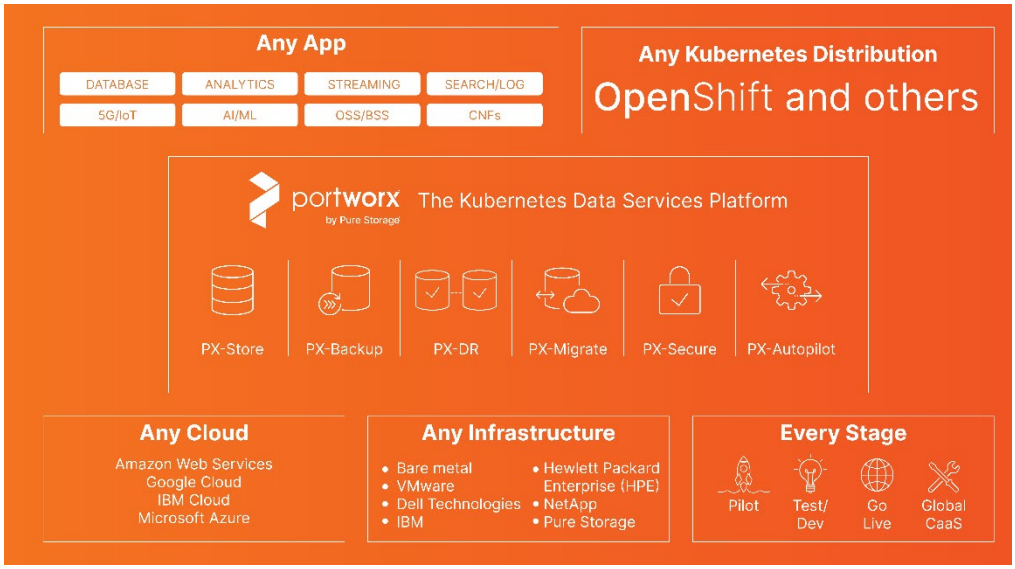


Figure 1. The Portworx platform is an end-to-end data-management platform that supports leading virtualization platforms, major public clouds, and hyperscalers.

Portworx Enterprise provides solutions for scalable, performant container storage, backup and disaster recovery, multi-cloud operations, data security, capacity management, and compliance and governance through its core modules: PX-Store, PX-Backup, PX-DR, PX-Migrate, PX-Secure, and PX-Autopilot.

PX-Store: PX-Store is cloud-native, scalable, persistent storage for Kubernetes. As a storage solution for cloud, on-premises, or hybrid-cloud applications, PX-Store provides high availability and failover capabilities and shared volumes with elastic scaling. It helps automate the deployment of container storage in any infrastructure, including OpenShift.

PX-Backup: Backup and recovery are key requirements for telcos, especially for customers that might be running an app on a telco offering. While OpenShift provides several tools, scripts, and commands for backing up components, PX-Backup is an enterprise backup solution that protects all data running on an OpenShift platform. Built from the ground up to support

Kubernetes and containers, PX-Backup captures entire applications, application data, Kubernetes objects, metadata, and critical features. Continuous backups can spread across an individual data center or across global data centers. Point-and-click recovery of Kubernetes apps can help telcos fulfill compliance and governance responsibilities from a single graphical user interface (GUI).

PX-DR: Backup and recovery are only one piece of an overall disaster recovery (DR) strategy. PX-DR provides enterprise DR capabilities for telcos running OpenShift applications that require stringent recovery point objectives (RPOs) and recovery time objectives (RTOs). PX-DR extends the data-protection capabilities of PX-Store with zero RPO and low RTO, which are critical to putting apps into a production OpenShift environment. PX-DR also provides multi-site synchronous replication across a metro area or asynchronous replication across a wide area network (WAN).

PX-Migrate: PX-Migrate simplifies the process of moving entire applications between clouds seamlessly. Telcos don't have to rewrite applications to move to a cloud platform; any application written for OpenShift can quickly and easily be moved to any cloud with a couple of clicks. This enables telcos to move apps seamlessly from the edge to a public cloud or on-premises, which helps support both 5G initiatives across a wide breadth of locations and delivery of a container-first strategy that fits within an overall cloud strategy.

PX-Secure: PX-Secure provides encryption for both data in motion and data at rest across an OpenShift cluster while also providing namespace-granular, role-based access control (RBAC). Built on the JavaScript Object Notation (JSON) Web Tokens (JWT)-based authentication and authorization model, PX-Secure provides access control for authorization, authentication, and ownership. With Active Directory and Lightweight Directory Access Protocol (LDAP) integration, telcos can make use of their existing authentication and access-control infrastructures with PX-Secure.

PX-Autopilot: PX-Autopilot provides capacity-management capabilities that help keep telcos from over-provisioning cloud storage capacity. PX-Autopilot can automatically resize individual container volumes or entire storage pools, and it integrates with Amazon Elastic Block Store (EBS), Google Persistent Disk, and Microsoft Azure Managed Disks. PX-Autopilot lets telcos automatically scale their storage while helping manage cloud storage costs.

Additional Resources

- Try Portworx for free.
- Learn more about how to accelerate your digital transformation with Portworx.

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[1] GigaOm. "GigaOm Radar Report for Data Storage for Kubernetes." March 2020. https://portworx.com/wp-content/uploads/2020/03/gigaom-radar-for-data-storage-for-kubernetes.pdf.

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