

SOLUTION BRIEF

Portworx for Telecom

The easiest and most complete Kubernetes data platform for telecom cloud-native transformation

Container-based cloud-native network functions (CNFs) are changing the telecom landscape with performance and automation at scale and improved feature velocity via continuous integration and continuous deployment (CI/CD). [Portworx](#)® by Pure Storage® is the ideal platform for managing and protecting CNFs or other containerized apps, whether built in-house or acquired from industry providers.

The rollout of 5G services presents carriers with both a challenge and an opportunity. Many new service offerings will be possible, opening entirely new lines of business. The challenge will be to meet this demand and be agile enough to spin up new telco services quickly to outpace the competition. Cloud-native is the way to go.

Simplifying Container Deployments for Telecoms

Application developers love Kubernetes and containers since they don't have to worry about the environment the apps are being deployed on, keeping their focus on agile app development. In addition, ISVs that deliver applications to the telecom industry are rolling out cloud-native versions, which presents a challenge for infrastructure teams that aren't familiar with Kubernetes or cloud-native deployments. Portworx makes containerized application deployment much easier by providing container-native persistent storage that integrates seamlessly with Kubernetes. Encryption and secure multi-tenancy are provided by the platform, allowing the organization to isolate workloads and protect sensitive data. It also includes built-in backup and recovery capabilities, allowing organizations to recover quickly from data loss or corruption.

Portworx is infrastructure-agnostic and can be deployed across multiple public clouds and with any virtualized or bare metal physical storage infrastructure, though Pure Storage hardware users gain unique benefits. Portworx Enterprise is composed of function-specific modules, which are outlined below. For a comprehensive feature list, [click here](#).



Simplify Container Deployments

Simplify the move to containerized applications with Portworx handling critical storage management tasks.



Application-centric Operation

Out of the box integration with key applications and services such as Kafka, Elasticsearch, Cassandra, MongoDB, PostgreSQL, MySQL, and more.



Keep Data Safe

Get data protection functions like encryption, backup and restore, and disaster recovery

5G Core & Edge



Cloud RAN



OSS/BSS



CI/CD



Automation



Figure 1. Cloud-native Network Functions (CNFs) are being deployed for many telecom use cases, some of which are shown above. Containers allow for faster and more resilient deployment of new services.

Scalable Persistent Storage for Kubernetes

PX-Store provides core persistent storage for containers. Persistent data storage is a critical component of many telecom services such as mobile payments, billing systems, customer relationship management (CRM), and device management systems. Portworx handles vital storage tasks for you, including:

- Container-optimized volumes with elastic scaling with no application downtime
- High availability (HA) across nodes, racks, and/or availability zones so applications can failover in seconds, keeping services on-line
- Storage-aware class-of-service (COS) and application-aware I/O tuning, which help ensure your most critical workloads meet their required service levels

PX-Store works in multiple cloud and/or on-premises environments, including Amazon Web Services Elastic Kubernetes Service (EKS), Microsoft Azure Kubernetes Service (AKS), Google Cloud Kubernetes Engine (GKE), VMware Tanzu, IBM Kubernetes Service (IKS), Rancher Kubernetes Engine (RKE), Docker Swarm, Mesos, Hashicorp Nomad, Red Hat OpenShift and more. Portworx Enterprise also supports IPv6, commonly found in 5G networks.

Multi-cloud Application Portability at Your Fingertips

PX-Migrate lets you easily move entire applications across clusters, racks, and clouds, giving you enhanced openness and application portability. This is exceptionally helpful for meeting seasonal or event-driven compute needs. PX-Migrate provides:

- Multi-cloud/multi-cluster application migrations that allow you to optimize workloads and infrastructure costs
- Snapshot-based backups to any cloud
- Application-consistent snapshots with support for popular data services such as Cassandra, Elastic, MongoDB, PostgreSQL, MariaDB, Kafka, MySQL, and more.

Automated Capacity Management to Avoid Overprovisioning

PX-Autopilot allows you to avoid over-provisioning storage capacity in the cloud, delivering savings on your cloud storage bill. PX-Autopilot includes:

- Automatic resizing of individual container volumes or entire storage pools
- A rules-based engine with customization capabilities to optimize apps based on performance requirements
- Integration with Google Persistent Disk, Azure Managed Disks, Amazon EBS, and VMware vSphere. PX-Autopilot also works directly with Pure FlashArray.

With PX-Autopilot, container capacity management is easy and fully automated.

Easy Backup and Restore of Containerized Applications

[PX-Backup](#) gives you the agility benefits of Kubernetes without sacrificing data protection and control. It protects the entire application, including data, application configuration, and Kubernetes objects. PX-Backup delivers:

- Point-and-click recovery for both stateless and stateful Kubernetes applications
- Application-aware protection for complex distributed applications
- Role-Based Access Control (RBAC) for easy staff task assignments

PX-Backup can be deployed separately from the full Portworx Enterprise platform.

Container Data Security without Compromise

Data security for telecoms has never been more critical. PX-Secure provides the encryption and access controls needed to protect your data. PX-Secure includes:

- Cluster-wide encryption
- Container-granular or storage-class based Bring Your Own Key (BYOK) encryption
- Role-based access control for authorization, authentication, and ownership
- Integration with Active Directory and LDAP

Direct Integration with Pure Storage Arrays

Portworx is 100% software and runs on any infrastructure. Using Portworx with Pure Storage FlashArray™ and FlashBlade® you benefit from Kubernetes-native storage and data management, as well as our industry-leading performance and reliability. Portworx provides direct access for FlashArray, enabling automated storage provisioning directly on the array. With FlashBlade, Portworx creates a volume for Kubernetes applications on the FlashBlade in pass-through mode. This means that the Portworx control plane will send the PVC request directly to the FlashBlade file system for those applications.

You can also get the most performance out of your Pure Storage using [PX-Fast](#), which provides best-in-industry performance for apps with massive data ingestion needs, as well as delivering low latency and high throughput for mission-critical workloads. Portworx uniquely provides throughput/IOPS extremely close to the equivalent of writing directly to the high-performing NVMe-based FlashArray. PX-Fast makes Kubernetes data storage look like local storage for containerized apps and data.

Portworx also integrates with [Pure1® cloud management](#), providing a consolidated view of all Portworx clusters for monitoring essential metrics, including cluster health, configuration, and support-case management.

Delivering Database-as-a-Service for Telecoms

For the ultimate in container service simplicity, [Portworx Data Services](#) lets databases and other stateful services be deployed and managed on any Kubernetes cluster with a single click, giving IT organizations the advantages of a managed database offering without vendor lock-in.

DevOps engineers can deploy a managed, production-grade data service on Kubernetes from the industry's broadest catalog of options for SQL, NoSQL, search, streaming, and more. Portworx Data Services fully automates Day-2 operations, including monitoring, backups, HA, DR, migration, auto-scaling, and security.

For telecoms struggling with digital transformation and the move to containerized workloads, Portworx Data Services represents a game-changing new approach.

Additional Resources

- Read how [Netherlands telecom KPN](#) uses Portworx to manage a multi-tenant Kubernetes platform.
- [Watch the video](#) on how Comcast deployed a next-generation infrastructure platform using Kubernetes and Portworx.
- [Read](#) how America's largest media and entertainment company goes smart and fast with Portworx.
- Check out our [telecom blogs](#).
- Download [our whitepaper](#) on "The Past, Present and Future of the Telecom Cloud" (no registration required).

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