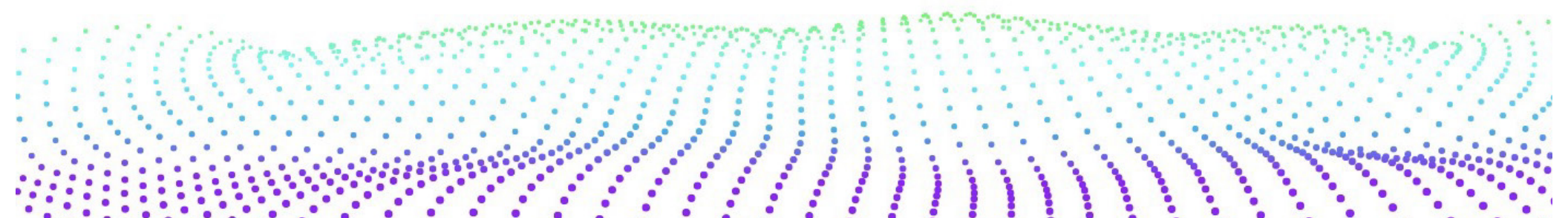




Infinidat OpenShift Integrations to Make Life Easy at Petabyte Scale

Carvel Baus
Kubernetes CSI/Golang Developer
November 2023

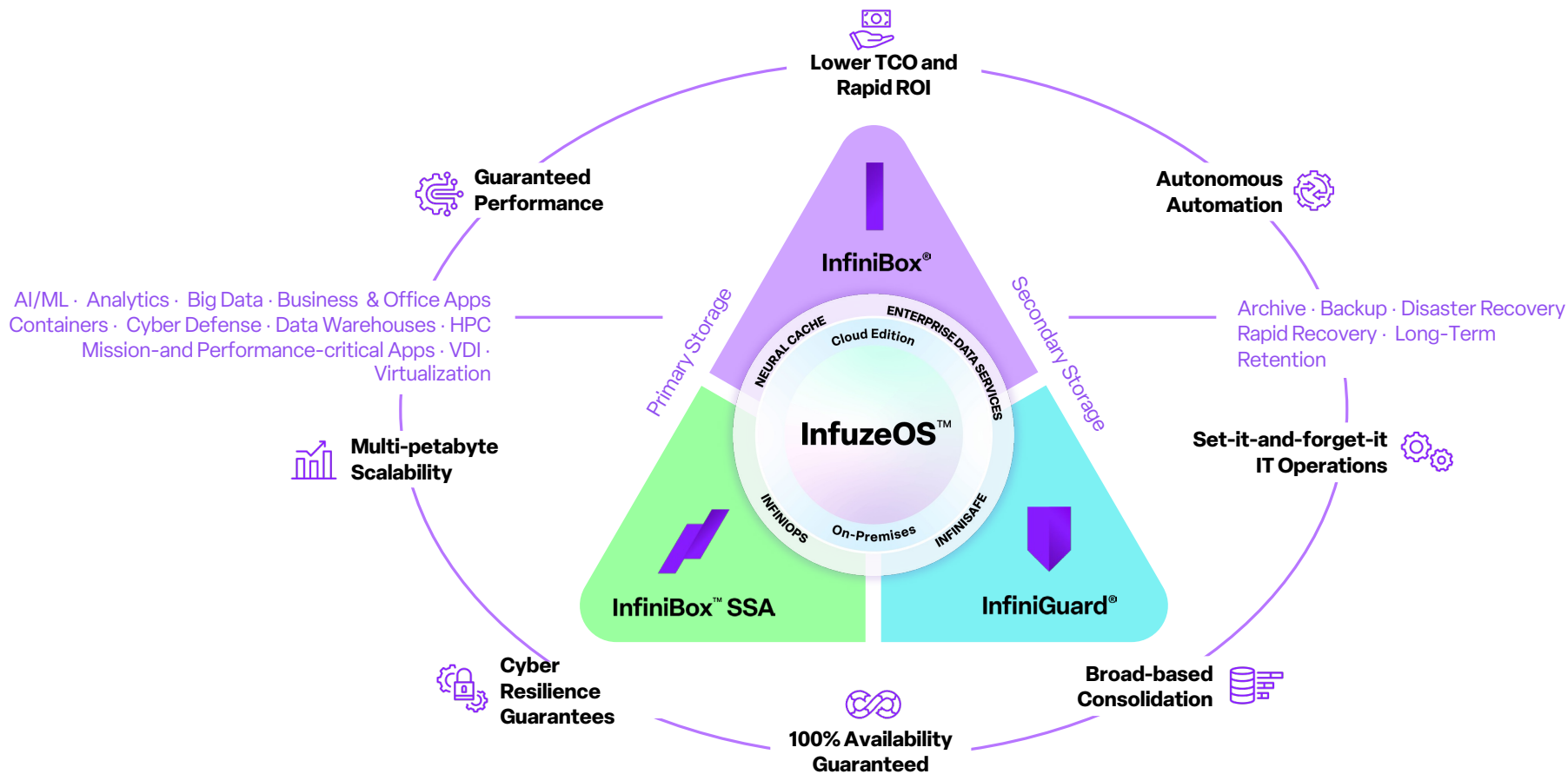


Data Protection Challenges of Kubernetes Platforms

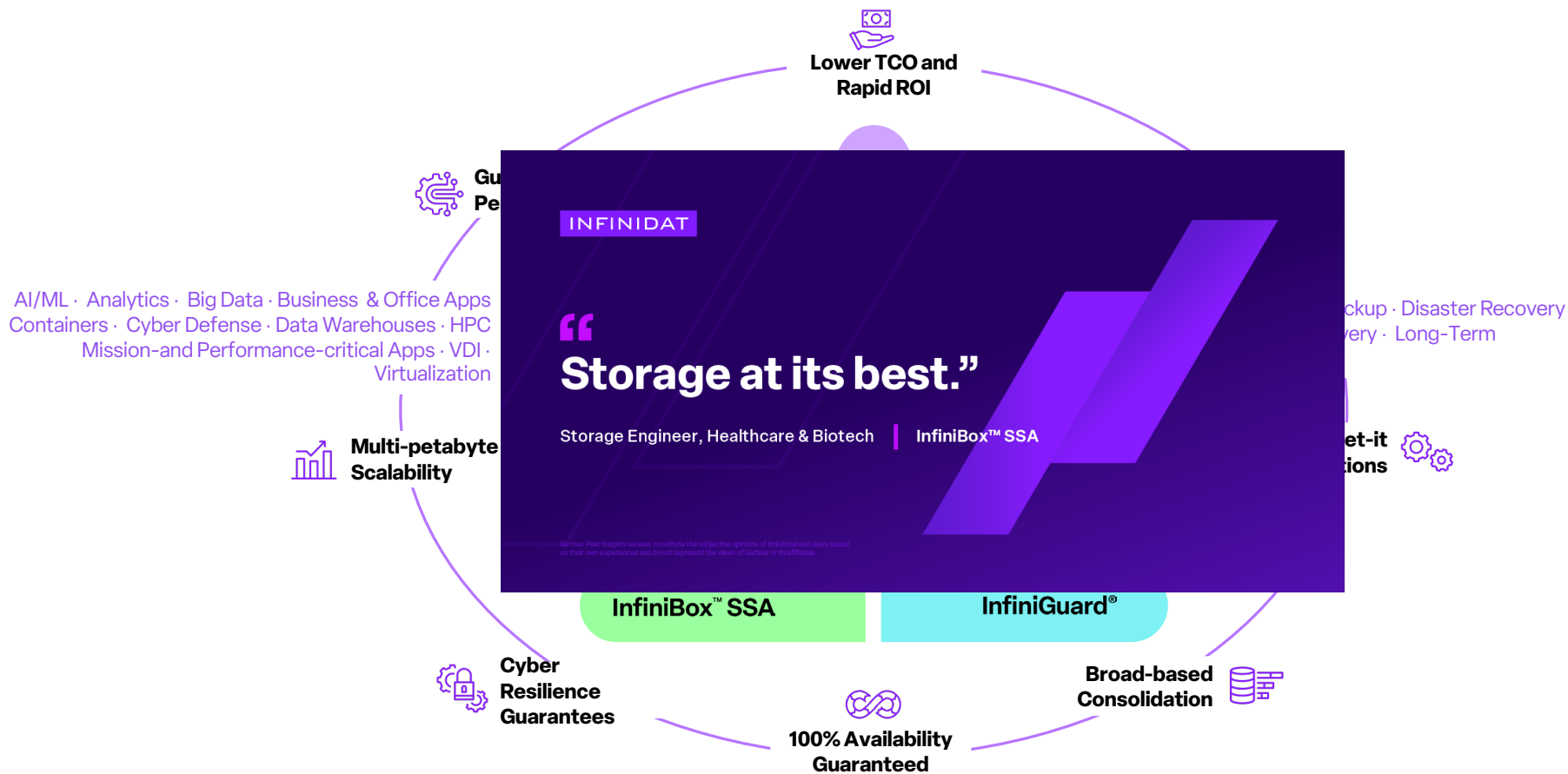
- Application Consistency
- Volume Consistency
- Scalability
- Performance impact
- Disaster recovery



One SDS Architecture, All Platforms

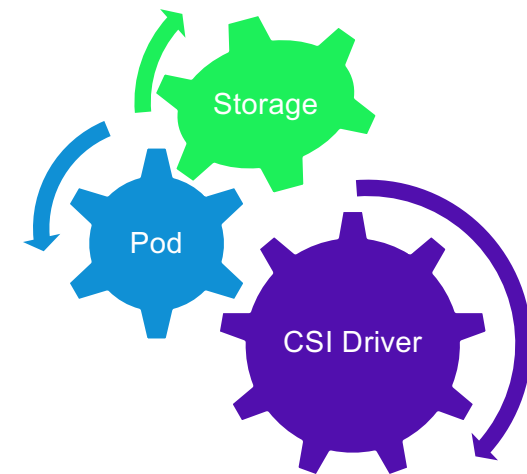


One SDS Architecture, All Platforms



In what way does persistent storage integrate with Kubernetes?

- Kubernetes is the de-facto standard for container orchestration
- Heavy demand to run Stateful Applications
- Advanced Storage and Data protection capabilities
- CSI is a standard for exposing arbitrary block and file storage systems to containerized workloads on Kubernetes
- CSI increased the autonomy and flexibility of developers



InfiniBox Container Storage Interface (CSI) Driver



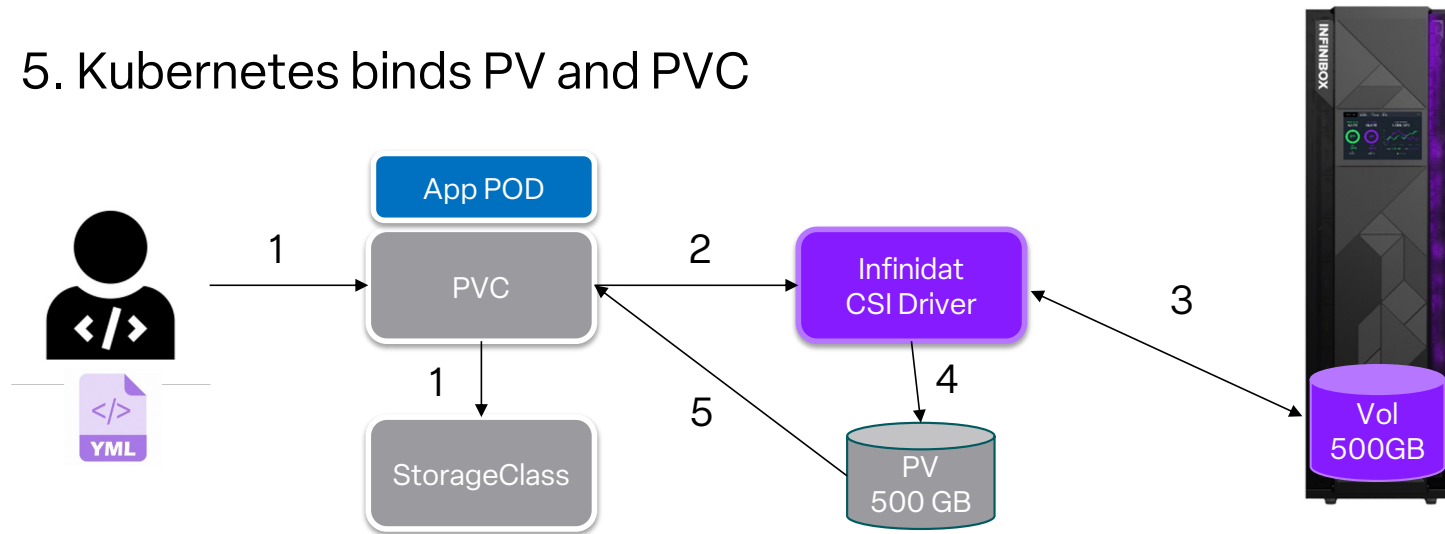
- Features
 - ✓ Multiple InfiniBox systems
 - ✓ Dynamic provisioning
 - ✓ Raw block
 - ✓ Cloning
 - ✓ Resize
 - ✓ Immutable snapshots
 - ✓ Restore
 - ✓ Import
- Protocols
 - ✓ FC / iSCSI / NFS / NFS-TreeQ
- Deployment Methods
 - ✓ Helm for upstream K8s
 - ✓ Operator for OpenShift



"Infinidat is the front-runner for enterprise storage innovation" GigaOm 2023

PV creation flow

1. Developer / App creates a PVC, specifies a StorageClass
2. CSI driver is notified of a request
3. CSI driver provision volume in InfiniBox
4. CSI driver creates a PV resource
5. Kubernetes binds PV and PVC



- Administrator
- Home
- Operators
 - OperatorHub
 - Installed Operators
- Workloads
 - Pods
 - Deployments
 - DeploymentConfigs
 - StatefulSets
 - Secrets
 - ConfigMaps
 - CronJobs

You are logged in as a temporary administrative user. Update the [cluster OAuth configuration](#) to allow others to log in.

Project: infinidat-csi

OperatorHub

Discover Operators from the Kubernetes community and Red Hat partners, curated by Red Hat. You can purchase commercial software through [Red Hat Marketplace](#). You can install Operators on your clusters to provide optional add-ons and shared services to your developers. After installation, the Operator capabilities will appear in the [Developer Catalog](#) providing a self-service experience.

All Items

- AI/Machine Learning
- Application Runtime
- Big Data
- Cloud Provider
- Database
- Developer Tools
- Development Tools
- Drivers and plugins
- Integration & Delivery
- Logging & Tracing
- Modernization & Migration
- Monitoring

All Items

Search: Infinidat

1 items

INFINIDAT

Certified

InfiniBox CSI Driver - Operator
provided by Infinidat

Infinidat InfiniBox Container Storage Interface (CSI) Driver is a CNCF-compliant Kubernetes...

The screenshot shows the Red Hat OpenShift OperatorHub interface. On the left is a navigation sidebar with categories like Administrator, Home, Operators, Workloads, and CronJobs. The main content area displays the details for the 'InfiniBox CSI Driver - Operator' (version 2.9.0) provided by Infinidat. The interface includes an 'Install' button, a 'Latest version' section, a 'Capability level' section with radio buttons for 'Basic Install', 'Seamless Upgrades', 'Full Lifecycle', 'Deep Insights', and 'Auto Pilot'. It also lists 'Source' (Certified), 'Provider' (Infinidat), and 'Repository'. A 'Features and Benefits' section lists multi-protocol flexibility, multi-petabyte scalability, and advanced enterprise features. A 'Required Parameters' section lists hostname, username/password, and SecretName.

- Administrator
- Home
- Operators
 - OperatorHub
 - Installed Operators
- Workloads
 - Pods
 - Deployments
 - DeploymentConfigs
 - StatefulSets
 - Secrets
 - ConfigMaps
 - CronJobs
 - Jobs
 - DaemonSets
 - ReplicaSets
 - ReplicationControllers

You are logged in as a temporary administrative user. Update the [cluster OAuth configuration](#) to allow others to log in.

OperatorHub > Operator Installation

Install Operator

Install your Operator by subscribing to one of the update channels to keep the Operator up to date. The strategy determines either manual or automatic updates.

Update channel * ?

- stable
- alpha

Installation mode *

- All namespaces on the cluster (default)
This mode is not supported by this Operator
- A specific namespace on the cluster
Operator will be available in a single Namespace only.

Installed Namespace *

PR infinidat-csi

Update approval * ?

- Automatic
- Manual

Install Cancel

InfiniBox CSI Driver - Operator
provided by Infinidat

Provided APIs

ICD InfiniboxCsiDriver
Not available

You are logged in as a temporary administrative user. Update the [cluster OAuth configuration](#) to allow others to log in.

Project: infinidat-csi

Pods

Create Pod

Filter Name Search by name...

Name ↑	Status ↓	Ready ↓	Restarts ↓	Owner ↓	Memory ↓	CPU ↓	Created ↓
infiniboxcsidriver-sample-driver-0	ContainerCreating	0/6	0	infiniboxcsidriver-sample-driver	-	-	Nov 3, 2023, 9:13 AM
infiniboxcsidriver-sample-node-7vgkf	ContainerCreating	0/3	0	infiniboxcsidriver-sample-node	-	-	Nov 3, 2023, 9:13 AM
infiniboxcsidriver-sample-node-9jnx7	ContainerCreating	0/3	0	infiniboxcsidriver-sample-node	-	-	Nov 3, 2023, 9:13 AM
infinidat-csi-operator-controller-manager-7b8ddcb689-4n4zn	Running	2/2	0	infinidat-csi-operator-controller-manager-7b8ddcb689	31.3 MiB	0.001 cores	Nov 3, 2023, 9:10 AM

You are logged in as a temporary administrative user. Update the [cluster OAuth configuration](#) to allow others to log in.

Project: infinidat-csi

Pods

Create Pod

Filter Name Search by name... /

Name ↑	Status ↓	Ready ↑	Restarts ↓	Owner ↓	Memory ↓	CPU ↓	Created ↓
infiniboxcsidriver-sample-driver-0	Running	6/6	0	infiniboxcsidriver-sample-driver	-	-	Nov 3, 2023, 9:13 AM
infiniboxcsidriver-sample-node-7vgkf	Running	3/3	0	infiniboxcsidriver-sample-node	-	-	Nov 3, 2023, 9:13 AM
infiniboxcsidriver-sample-node-9jnx7	Running	3/3	0	infiniboxcsidriver-sample-node	-	-	Nov 3, 2023, 9:13 AM
infinidat-csi-operator-controller-manager-7b8ddcb689-4n4zn	Running	2/2	0	infinidat-csi-operator-controller-manager-7b8ddcb689	31.3 MiB	0.001 cores	Nov 3, 2023, 9:10 AM

Summary:

- OpenShift + Infinidat
 - Simplified, seamless and rapid integration of persistent storage to your Kubernetes environment via the OperatorHub
- Multi-protocol flexibility
 - Customers can manage Kubernetes Persistent Volumes attached via block and file protocols, including Fibre Channel, iSCSI, and NFS, with all access modes
- Multi-petabyte scalability
 - Support hundreds of thousands of PVs per InfiniBox system and control multiple InfiniBox arrays within a single Kubernetes cluster
- Advanced enterprise features
 - Manage native InfiniBox snapshots and clones, restore from snapshots, import PVs created outside of InfiniBox CSI Driver, automatic updates with no administrative hassle

The End Users Have Spoken



InfiniBox Reviews

by Infinidat in Primary Storage

4.9 ★★★★★ 441 Ratings



InfiniBox SSA Reviews

by Infinidat in Primary Storage

4.9 ★★★★★ 11 Ratings



InfiniGuard Reviews

by Infinidat in Data Center - Others

4.8 ★★★★★ 17 Ratings



As of October 26, 2023

The End Users Have Spoken

InfiniBox Reviews
by Infinidat in Primary Storage
4.9 ★★★★★ 441 Ratings

“Infinidat is the Golden Standard for Enterprise Storage.”
Storage Operations Supervisor, Banking | InfiniBox®

Gartner Peer Insights reviews constitute the subjective opinions of individual end users based on their own experiences and do not represent the views of Gartner or its affiliates.



InfiniGuard Reviews
by Infinidat in Data Center - Others
4.8 ★★★★★ 17 Ratings



As of October 26, 2023

Infinidat Drives Dramatic CAPEX and OPEX Savings

162%
5-year ROI

48%
Reduced
OPEX

51%
More efficient
storage
management

11 Month
Payback in
11 months



[Video Webinar](#)



[On-demand](#)

<https://www.infinidat.com/en/financial-benefits>

Thank you



SCAN ME

INFINIDAT