

# Catalogic DPX

## Overview

DPX is Catalogic's backup and recovery software platform for enterprise physical and virtual workloads. It is complemented by CloudCasa, Catalogic's "as-a-service" offering for protecting Kubernetes and cloud-native workloads that is covered separately in Evaluator Group's Backup-as-a-Service Evaluator Series Research segment.

DPX creates block-level, incremental, snapshot-based, read-only backups. Catalogic's Instant Virtualization technology allows these snapshots to be directly mounted to compute nodes, making the backup data quickly accessible for recoveries and for adjacent use cases including analytics, dev/test and reporting.

DPX can recover bare metal as well as virtualized systems. It supports granular recovery, for example, of individual files, Exchange and SharePoint items, and SQL database tables. Additionally, it supports replication – including of encrypted volumes – to a secondary system. Replication bandwidth is throttled to optimize performance, and specific volumes can be prioritized for replication.

DPX vPlus (formerly branded as vProtect) is Catalogic's backup software for open VM environments (e.g., Nutanix AHV, Citrix Xen, Red Hat OpenStack, KVM), Microsoft 365, Amazon EC2, Google Compute Engine, and Microsoft Azure VMs. DPX vPlus uses a node that serves as a data mover to transport agentless snapshots in their required format to any DPX-supporttrf repository. vPlus also allows clones in the form of writeable snapshots to be created and accessed through DPX Instant Access.

DPX backups are sent to the Catalogic vStor software-defined, scalable backup repository. vStor nodes can be deployed on bare metal servers or virtual appliances with any variation of storage hardware, allowing customers to balance their capacity and performance requirements. vStor is based on the open-source file system ZFS, which facilitates platform-native (DPX Block, VMware, ESXi, Microsoft Hyper-V) copy-on-write snapshots that can be recovered from using DPX Instant Access.

## Highlights

- Supports a variety of applications and databases, cloud storage, virtual systems, operating systems
- Recovery in-place from snapshot-based backups stored on disk, tape, and cloud targets
  - Single file or directory restore for virtual environments
- Replication with network throttling
- Archival to cloud and tape targets
- Supports immutability (S3 Object Lock)
- vStor software-defined backup repository

DPX supports disk-to-disk and direct-to-cloud backups. Backup copies are stored as immutable data copies; this includes support for S3 Object Lock (compliance and governance modes) for a number of cloud storage targets including Amazon and Backblaze. Additionally, backups can be automatically tiered to air gapped tape storage or long-term retention cloud storage.

For ransomware resiliency, Catalogic added a capability called GuardMode into DPX. GuardMode facilitates ransomware detection via scanning against over 4,000 known ransomware signatures, as well as by scanning for anomalous activity that could indicate an attack. Additionally, it can track and analyze file metadata, and it can detect encrypted files and tracks the encryption process to generate a list of affected files through a REST API. In addition to detecting that an attack has occurred – or is occurring – these capabilities allow IT operations to identify specifically which files have been impacted by an attack, which increases visibility into the scope of an attack and allows good data changes to be preserved. Entropy analysis reduces the likelihood of false positives. GuardMode further deters attacks with block-list detection and a honeypot mechanism. Alerting of nefarious activity is integrated into the DPX console, and integration with SIEM tools allows for centralized visibility as well as alerting across the IT infrastructure environment – not just the data storage environment. In addition to supporting Windows environments, Catalogic has added a GuardMode agent to support Linux and Samba shares.

## Usage and Deployment

Catalogic DPX protects physical and virtual systems as well as a number of common applications with incremental, snapshot-based backups that can be directly mounted to compute for fast recoveries. It also includes a number of additional important enterprise-grade capabilities including replication, immutability, and direct tiering to archival storage targets.

- Characteristics
  - Performance – depends on hardware including network connections; includes bandwidth throttling.
  - Availability – includes replication and direct access to snapshot-based backups.
  - Replication – native, node-to-node, multi-tier asynchronous replication of encrypted volumes.
- Applications
  - Multiple applications are supported including:
    - Microsoft Exchange, SharePoint, and SQL Server
    - Oracle and SAP HANA databases
    - Microsoft 365 (DPX vPlus)
- System environments
  - Linux, Windows and UNIX operating systems:
    - CentOS
    - Debian
    - Novell
    - RedHat

- SUSE
- Ubuntu
- Oracle Linux, Solaris and AIX
- Microsoft Hyper-V, VMware ESXi (agentless)
- On-premises object storage targets (MinIO; Scality)
- Cloud object storage targets
  - Alibaba Object storage
  - AWS (incl. S3 Object Lock, Amazon S3 Glacier, and Glacier Deep Archive)
  - Backblaze
  - Cloudian
  - Microsoft Azure Blob
  - Wasabi
- Deployment and Administration
  - On-premises software deployment; also available as “vStor” software-defined appliance with target storage capacity, deployable on bare metal or virtualized infrastructure.
  - Agentless or proxy-based backups for virtual environments.
  - HTML5 user interface with option for CLI.
  - Reporting capabilities, with the ability to set reporting schedules and to send reports to an administrator’s email inbox.

## Evaluator Group EvaluScale™: Catalogic DPX

Evaluator Group product review methodology “EvaluScale” assesses each product within a specific technology area. The definitions of the criteria and explanations of how products are reviewed can be found in the [Evaluation Guides](#).

	Criteria	Description	Requirement	EG View of Catalogic DPX	Explanation for Catalogic DPX
1	<b>Data Sources</b>	Variety and comprehensiveness of data sources that can be protected (on- and off-prem. business apps and databases, cloud-hosted IaaS, physical systems, VMs on-prem. and in the cloud, containers).	<b>Meets requirements:</b> Supports physical systems in addition to two of the sources identified in “description” with the ability to automatically apply protection policies consistently. <b>Exceeds requirements:</b> Supports additional sources identified in “description” with the ability to automatically apply protection policies consistently.	<b>Meets requirements</b>	Supports VMs, physical systems and a range of on-prem. applications. Container and cloud-based sources are supported through CloudCasa.
2	<b>Protection Targets</b>	Variety and comprehensiveness of locations for storing backup and retention data (on-prem. disk, tape, VTL, on-prem. object, nearline, coldline and archive cloud storage).	<b>Meets requirements:</b> Satisfies “3-2-1” requirements (allows for three different copies to be stored on two different storage media types, one of which is offsite). <b>Exceeds requirements:</b> Additional storage target support beyond satisfying “3-2-1;” automated tiering to archive/retention storage.	<b>Exceeds requirements</b>	Supports backup to on-premises disk storage arrays, on- and off-premises object stores, and direct, automated tiering to VTL and tape systems as well as cloud-based long-term retention storage. Backups are written as immutable snapshots; S3 Object Lock (compliance and governance modes) is supported.
3	<b>Application Integration</b>	Integrate with applications for controls, coherent data protection.	<b>Meets requirements:</b> Supports Microsoft Active Directory, Exchange and SQL Server, and Oracle and SAP databases – with controls from application administration for protection and recovery and for quiescing performing coherent backups. <b>Exceeds requirements:</b> Supports additional applications.	<b>Meets requirements</b>	Typical applications including Microsoft Active Directory, Exchange, SharePoint, SQL Server and Oracle and SAP databases. DPX vPlus and CloudCasa required for additional applications.
4	<b>Vendor Support / Product Viability</b>	Long-term support and advancement of the product from the vendor.	<b>Judgement-based.</b> “Meets Requirements” typically requires more than five years of company existence and product general availability (GA); <b>“Exceeds”</b> typically requires more than 15 years.	<b>Meets requirements</b>	Catalogic was spun out of Syncsort in 2013.

<b>5</b>	<b>Operations</b>	Simplicity for installation and administration.	<b>Meets requirements:</b> Intuitive and simple installation (e.g. wizards, cloud deployment). Option to automate protection jobs. <b>Exceeds requirements:</b> Self-service portal for restores.	<b>Meets requirements</b>	On-premises deployment (no option for cloud deployment). Simplicity supported through wizards and automation. No self-service restore capabilities.
<b>6</b>	<b>Data Management</b>	Manage the protected data with capabilities and tools.	<b>Meets requirements:</b> Catalogs all data discovered to be able to manage the protected copies and identify unprotected data. Can search for data and identify different file versions. <b>Exceeds requirements:</b> Policy-based automation, identification of security vulnerabilities and rule violations, identification and oversight over compliance data.	<b>Meets requirements</b>	Metadata cataloging and search to identify versions and protected copies. Reporting on data that has not been backed up.
<b>7</b>	<b>Economics</b>	Licensing of data protection software and data reduction drives the economics of the solution.	<b>Meets requirements:</b> Has compression and deduplication; option to license by capacity protected after dedupe. <b>Exceeds requirements:</b> Global dedupe, consumption-based licensing, features to optimize network bandwidth consumption.	<b>Meets requirements</b>	Global compression and deduplication (integrated ZFS dedupe on vStor or Netapp CDOT). Flexible licensing (source capacity-based after dedupe, or based on the number of VM hosts). vStor appliance has throttling (added in v4.8).
<b>8</b>	<b>Regulatory Compliance</b>	Meet regulatory requirements for specific types of data.	<b>Varies based on individual needs; basics include:</b> <b>Meets requirements:</b> Provides immutability and the ability to isolate a data copy (e.g. air gapping). <b>Exceeds requirements:</b> Provides centralized oversight and analytics (e.g. identifying PII).	<b>Meets requirements</b>	Supports S3 Object Lock immutability via vStor. Supports archive targets such as Amazon S3 Glacier, Glacier Deep Archive. Can air gap data to tape and cloud storage.
<b>9</b>	<b>Performance</b>	Time required for backup and restore of data.	<b>Meets requirements:</b> Leverages snapshots, source-side deduplication, and incremental backups. <b>Exceeds requirements:</b> Additional capabilities to utilize resources and acceleration features (e.g. parallel transfers).	<b>Exceeds requirements</b>	Incremental snapshot-based backups, compression, source-side deduplication, network bandwidth throttling. DPX Instant Access accelerates recoveries.
<b>10</b>	<b>Assurance</b>	Operational assurance for recovery is a business-critical concern.	<b>Meets requirements:</b> Automated testing of integrity and restorability of protected data. <b>Exceeds requirements:</b> Automated testing of failover and failback processes.	<b>Meets requirements</b>	Has backup verification. Can use vStor replication to another site, but cannot seamlessly failover/failback, or test failover/failback processes.

## Evaluator Group Opinion: Differentiating elements for Catalogic DPX

Following its sale of its flagship ECX copy data management software to IBM in 2021, Catalogic has further focused its product development and sales and marketing efforts on DPX as well as Catalogic, its software-as-a-service data protection solution for Kubernetes container environments and cloud-native databases. Catalogic's background in copy data management translate into strong metadata cataloging and search as well as granular recovery capabilities. Additionally, global compression and deduplication as well as performance optimization drive cost optimization and support adherence to RPOs and RTOs. Catalogic's investments in areas such as cloud archiving capabilities, replication of encrypted backups and replication bandwidth throttling further increase cost efficiencies and resiliency against ransomware and other cyber-attacks for customers. With CloudCasa and vPlus, Catalogic supports a very broad range of workloads. GuardMode helps Catalogic to address the broadening scope of data protection to include not just data backup and recovery, but cyber-attack detection as well for cyber resiliency.

Information that is more detailed is available at <http://evaluatorgroup.com>

Copyright 2023 Evaluator Group, Inc. All rights reserved.

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or stored in a database or retrieval system for any purpose without the express written consent of Evaluator Group Inc. The information contained in this document is subject to change without notice. Evaluator Group assumes no responsibility for errors or omissions. Evaluator Group makes no expressed or implied warranties in this document relating to the use or operation of the products described herein. In no event shall Evaluator Group be liable for any indirect, special, inconsequential or incidental damages arising out of or associated with any aspect of this publication, even if advised of the possibility of such damages. The Evaluator Series is a trademark of Evaluator Group, Inc. All other trademarks are the property of their respective companies.