



Step-by-Step Guide

Round the clock backup of everything
with On- & Off-site Data Protection

The aim of this document is to demonstrate an example setup of a SAN volume backup which can be called Round the clock backup of everything.

Round the clock: Because the replication task can run every minute for 24/7/365

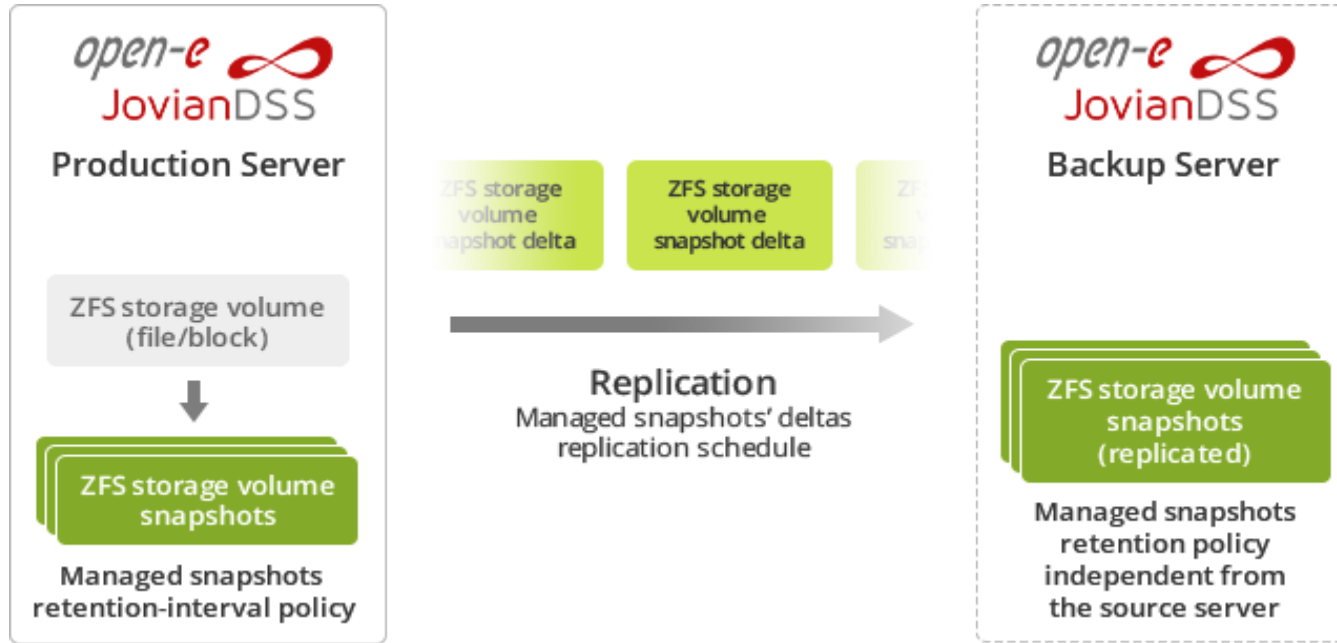
Backup of everything: Because it can backup virtual machines including operating systems, applications, databases and all kind of user data

On- & Off-site Data Protection creates the backup copy of the production volume with just a minute delay, and with guaranteed access to previous versions. The number and age of previous versions are defined by the user. The number and age of previous versions can be different on the source (production) and destination (backup). Users can also define more than one destination (backup).

The next slides present the technology details and the setup example starts with slide no. 18.



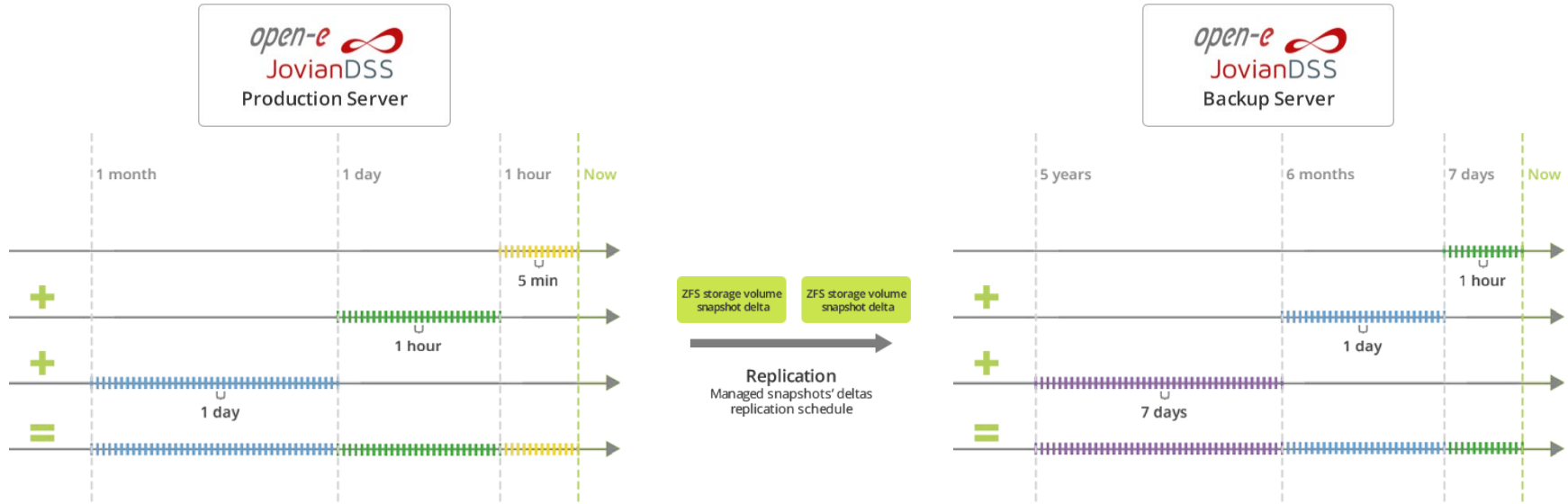
The On- & Off-site Data Protection feature is a strategy for Storage, Backup, Business Continuity and Archiving (optional) that allows for an instant restore of crucial company data in case of an unexpected disaster.



Main server used for day-to-day work with automated snapshots.

Replication of snapshot deltas to the off-site server.

Server at off-site location. Independent snapshots retention-interval policy, usually covering longer period than on main server.



On both local and Off-site locations there are independent snapshots retention policies for:

- Making new snapshots as often as 5 minutes
- Keeping snapshots even for years without running out of space

What are the key factors to measure the efficiency of disaster recovery?

RPO – Recovery Point Objective

Amount of time between the incident that caused data loss or corruption and the time of the last successful backup. Smaller RPO = better.

RTO – Recovery Time Objective

Amount of time required to restore the data and successfully resume the company's operations. Smaller RTO = better.

With On- & Off-site Data Protection both RPO and RTO can be counted in minutes. These parameters are among the best in the industry!



All-in-one storage and native backup

Built-in Enterprise-grade Backup and Disaster Recovery.

Backup of everything

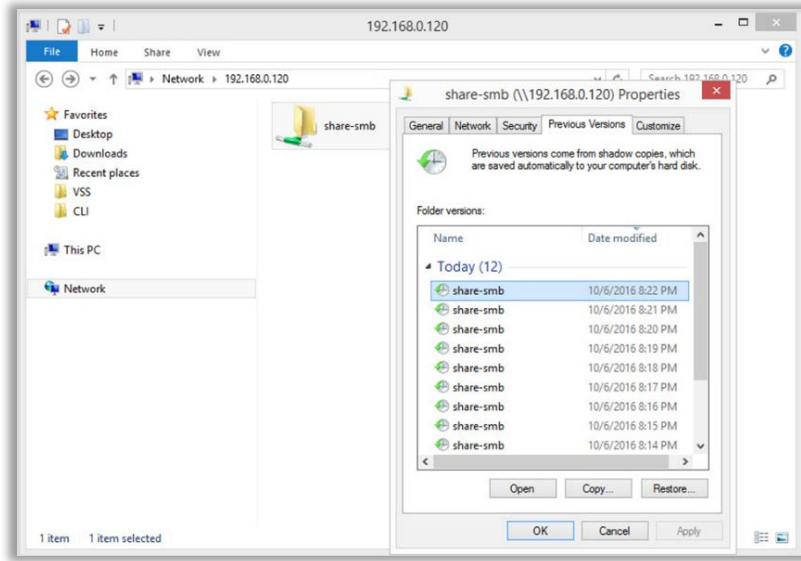
All running virtual machines with applications and data even databases backups are consistent.

Solved problem of Backup Window

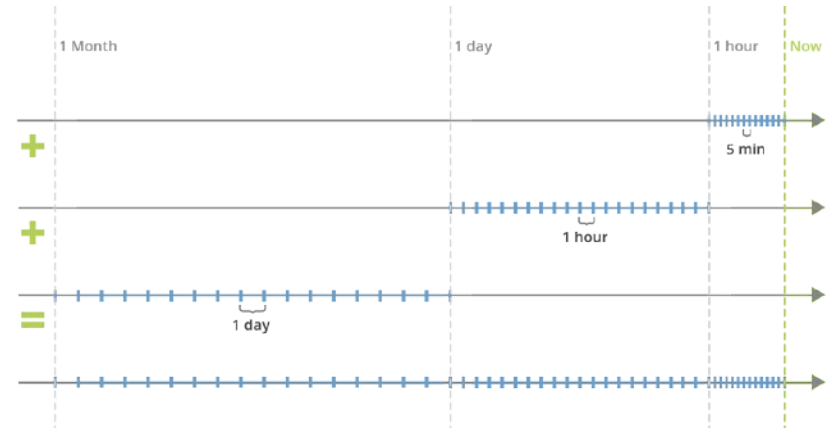
Backup Window reduced to minutes, only delta of all-data is replicated every interval.

Protection against ransomware

Very frequent snapshots with instant access to all-data provide very quick way to roll-back to the state before a virus attack.



**Instant access to /
restoration of old images**



Old images and data versions can be accessed / restored quickly. Via SMB every user has direct access to "Previous Versions" without administrator help.

Very light backup engine

Continuous interval-based replication works in the background with insignificant influence on production. Option to skip virtual machine snapshots in very heavy load time frames. Third party backup solutions are "very heavy" and generate high load during backup not to mention expensive.

Optional removal and rotation of backup media

Thanks to Export/Import users can safely remove the backup media (disks) and rotate with other sets, or ship to another location.

Encrypted transport

Data stream is sent via SSH. Easy to send via the Internet.



On- & Off-site Data Protection complements High Availability Clusters, but does not replace them!

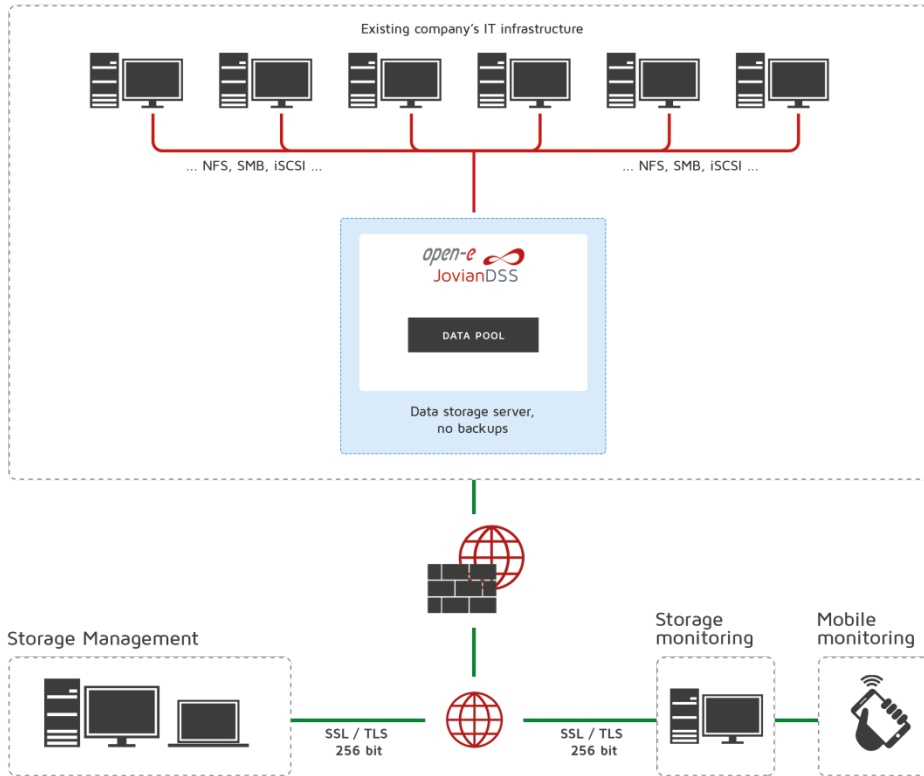
On- & Off-Site Data Protection

- Protects data by constantly backing it up and storing copies both locally and remotely
- Allows restoring data to a previously saved point in case of hardware failure or data corruption

High Availability Cluster

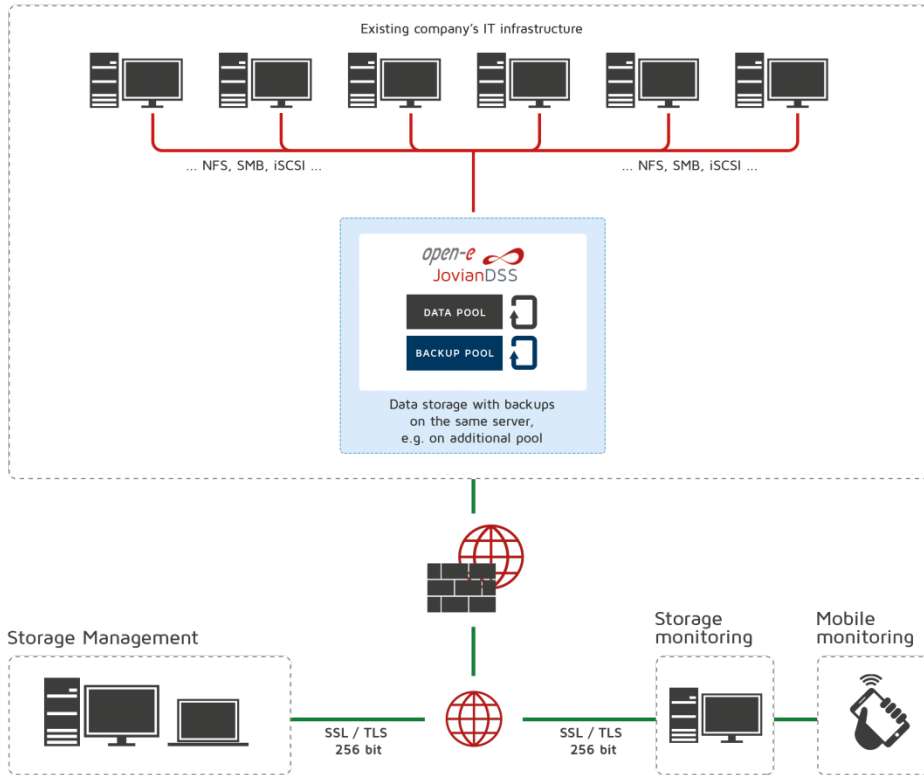
- Ensures business continuity by providing uninterrupted access to data even during hardware failures
- Maximizes utilization of hardware and network resources

Data safety levels and customer cases



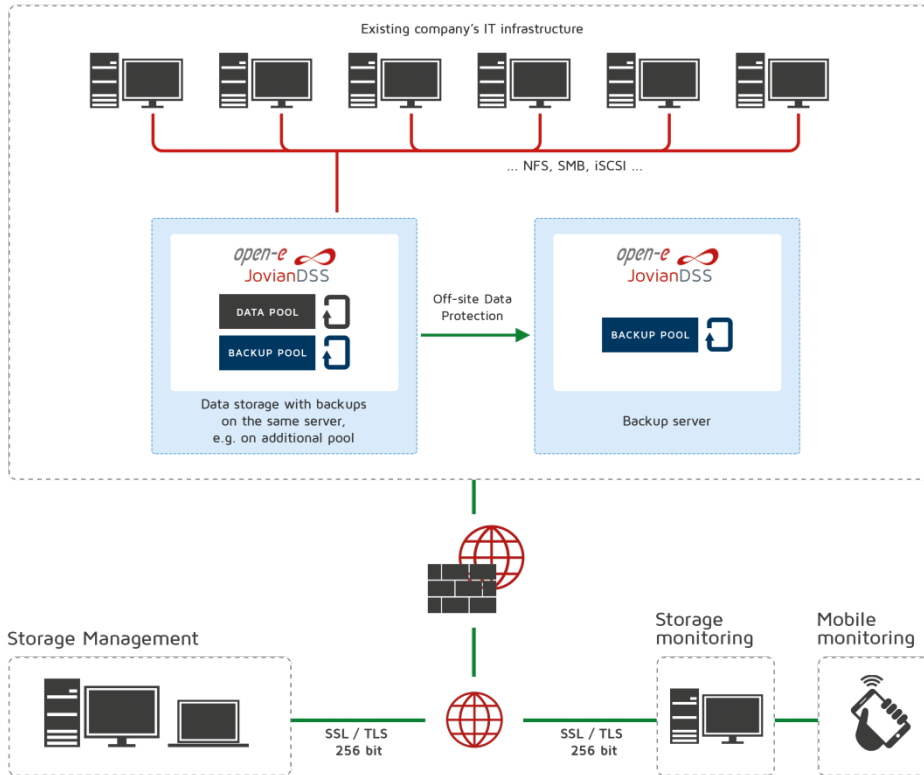
Open-E JovianDSS production server

Risks	Counter measure	Restore time
Virus attack	Snapshots	Instant
Data corruption	Self-healing	Instant
Disk failure	RAID	Instant
Rebuild failure	None	None
System failure	None	None
Natural disaster	None	None
Theft	None	None
Human error	None	None
Downtime	None	None



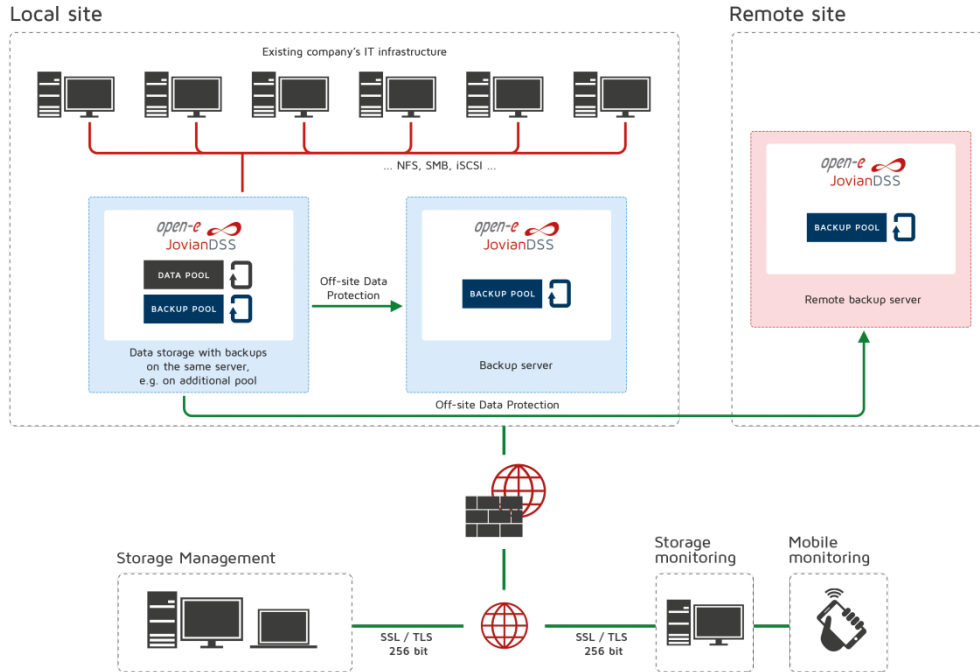
Open-E JovianDSS production server Backup on local pool

Risks	Counter measure	Restore time
Virus attack	Snapshots	Instant
Data corruption	Self-healing	Instant
Disk failure	RAID	Instant
Rebuild failure	Second RAID	Instant
System failure	None	None
Natural disaster	None	None
Theft	None	None
Human error	None	None
Downtime	None	None



Open-E JovianDSS production server
 Backup on local pool
 Backup on system in same location

Risks	Counter measure	Restore time
Virus attack	Snapshots	Instant
Data corruption	Self-healing	Instant
Disk failure	RAID	Instant
Rebuild failure	Second RAID	Instant
System failure	Backup server	Instant
Natural disaster	None	None
Theft	None	None
Human error	None	None
Downtime	None	None



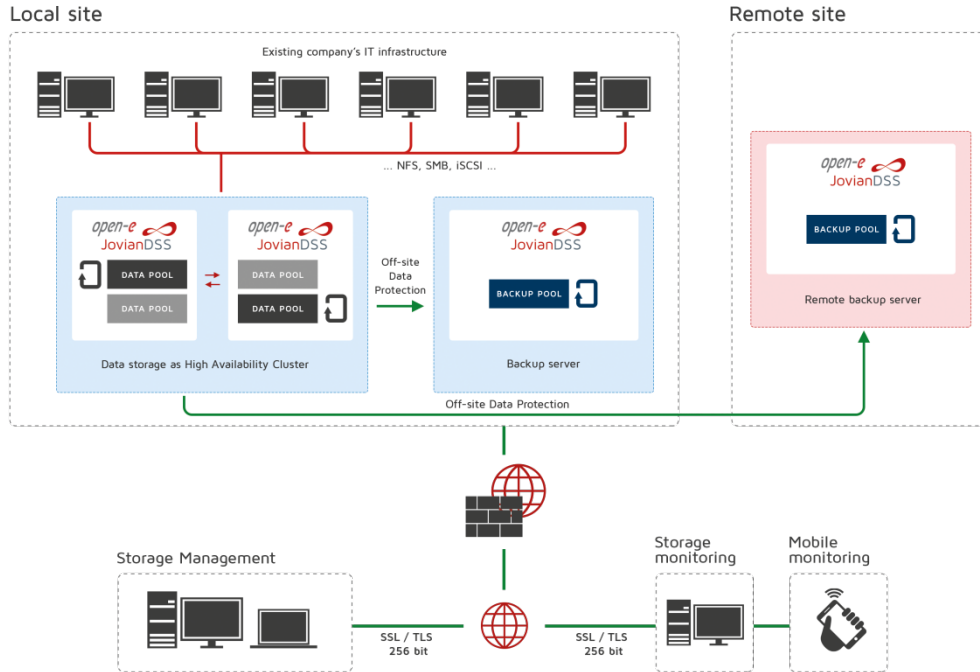
Open-E JovianDSS production server

Backup on local pool

Backup on system in same location

Backup on remote site

Risks	Counter measure	Restore time
Virus attack	Snapshots	Instant
Data corruption	Self-healing	Instant
Disk failure	RAID	Instant
Rebuild failure	Second RAID	Instant
System failure	Backup server	Instant
Natural disaster	Remote server	Hours
Theft	Remote server	Hours
Human error	Remote server	Hours
Downtime	None	None



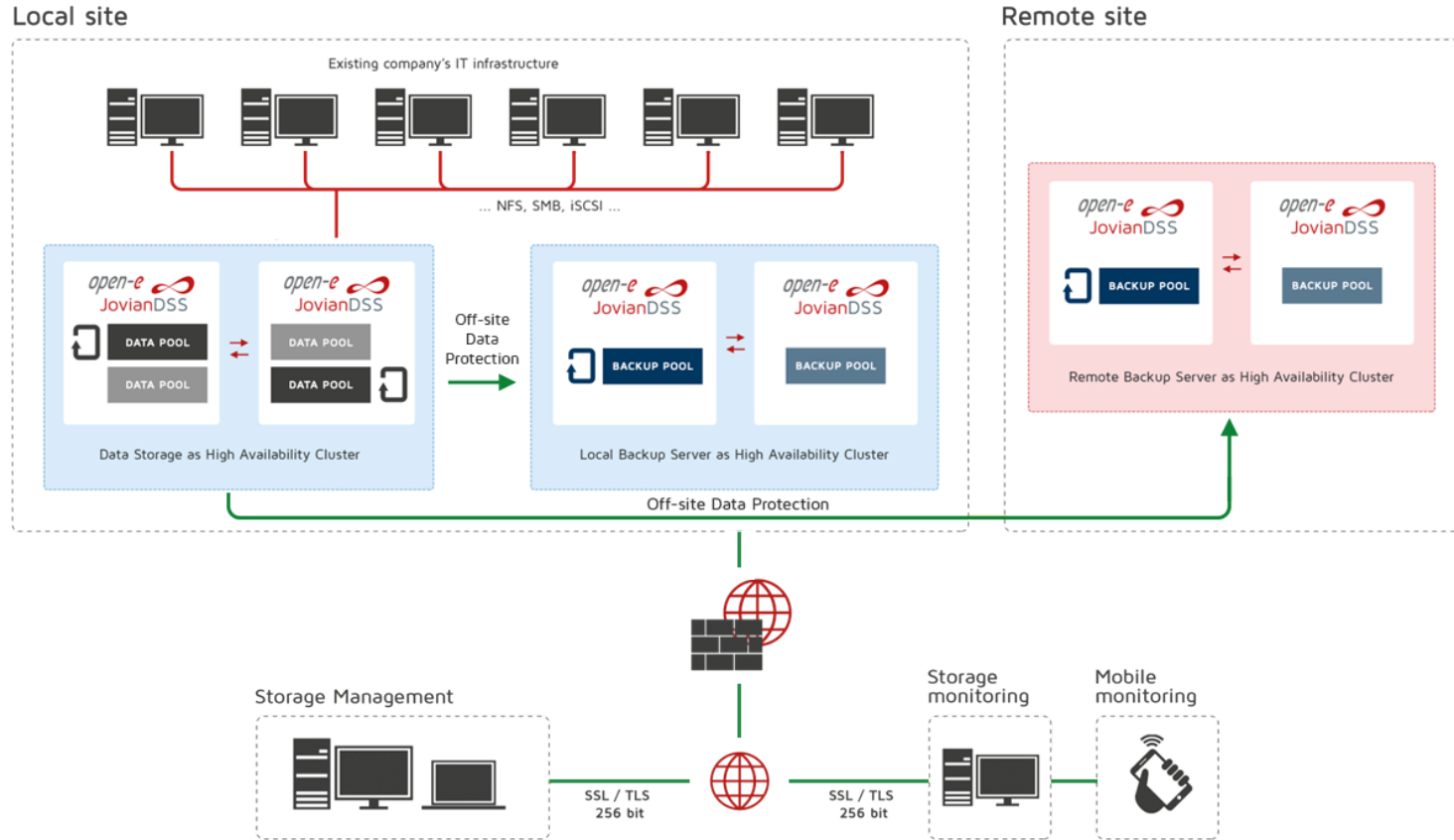
High-Availability Open-E JovianDSS production server

Backup on local pool

Backup on system in same location

Backup on remote site

Risks	Counter measure	Restore time
Virus attack	Snapshots	Instant
Data corruption	Self-healing	Instant
Disk failure	RAID	Instant
Rebuild failure	Second RAID	Instant
System failure	Backup server	Instant
Natural disaster	Remote server	Hours
Theft	Remote server	Hours
Human error	Remote server	Hours
Downtime	High Availability	Instant



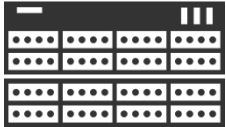
To set up a backup of everything with On- & Off-site Data Protection, perform the following steps:

1. Create a Zpool and iSCSI target on source and destination nodes
2. Detach the backup destination volume on the Backup node
3. Create a Replication task
4. List all created snapshots
5. Export the backup volume via a target in order to access or restore the data
6. Detach the volume network-export on the Backup node
7. Clone snapshots in order to access or restore the data

NOTE: This document is using iSCSI volume (zvol) only. The backup of NAS volumes (dataset) will be analogical. The only difference is that the NAS volumes are exported via a share and the SAN volumes are exported via an iSCSI target.

1. Creating a Zpool and iSCSI target on both nodes

open-e



JovianDSS: **Production node**
IP Address: 192.168.0.82

This step-by-step assumes that a pool and a target have already been created.

NOTE: Please refer to JovianDSS Jump-Start in order to create a Zpool and iSCSI target.

In the **production node**, please go to the Storage menu. The **iSCSI targets** tab shows the configured zvol00 on the Production node.

The screenshot shows the JovianDSS web interface on a browser. The left sidebar contains the following menu items: Storage, User Management, Failover Settings, Storage Settings, Backup & Recovery, System Settings, and Diagnostics. The main content area is titled 'Storage' and shows the configuration for 'Pool-0'. The pool status is 'ONLINE' and it contains 8 disks with a total storage of 127.00 GiB. A status message indicates 'Zpool is functioning correctly'. Below this, there are tabs for 'Status', 'Disk groups', 'iSCSI targets', 'Snapshots', 'Shares', and 'Virtual IPs'. The 'iSCSI targets' tab is active, showing a table of targets. One target is listed: 'iqn.2017-10:production-node.target0' with status 'Active' and 1 Zvol. A table below shows the details for 'zvol00':

Name	Type	SCSI ID	LUN	Logical size	Physical size	Compression	Provisioning
1 zvol00	zvol	L1CQ8sRINT2t7J	0	1000.00 GiB	127.75 KiB	1.00	thin

Below the table, it shows 'Zvols not attached to targets' with 0 Zvols. At the bottom, there is a 'Rescan required' notification: 'Click Rescan button above to scan disks for new zpools.'

2. Detaching the backup destination volume on Backup node

open-e



JovianDSS: **Backup node**
IP Address: 192.168.0.83

Next, in the **Backup node** go to the Storage menu, and select the **iSCSI targets** tab.

The backup destination volume should be not available on the network. In order to hide the volume on the network, click the **Options** drop-down menu and select **Detach**.

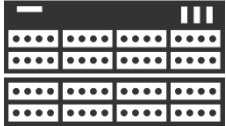
The screenshot shows the open-e JovianDSS web interface. The left sidebar contains the following menu items: Storage, User Management, Failover Settings, Storage Settings, Backup & Recovery, System Settings, and Diagnostics. The main content area is titled 'Storage' and shows the configuration for 'Pool-0-backup'. The status is 'ONLINE'. A message box indicates 'Status: Zpool is functioning correctly. Action: None required.' Below this, there are tabs for 'Status', 'Disk groups', 'iSCSI targets', 'Snapshots', 'Shares', and 'Virtual IPs'. The 'iSCSI targets' tab is active, showing a table of iSCSI targets. The first target is 'iqn.2017-10.backup-node.target0' with status 'Active' and 'Zvols: 1'. A table below lists the details for this target:

Name	Type	SCSI ID	LUN	Logical size	Physical size	Compression	Provisioning
1 zvol00	zvol	9H8zMQSCDexQ...	0	1.95 TiB	162.75 KiB	1.00	thin

Below the table, there is a section for 'Zvols not attached to targets' with 'Zvols: 0'. A red arrow points from the 'Options' dropdown menu of the first target to the 'Detach' option. At the bottom of the interface, there is a 'Rescan required' notification.

2. Detaching the backup destination volume on the Backup node

open-e

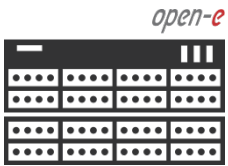


JovianDSS: **Backup node**
IP Address: 192.168.0.83

Next, click the **Yes** button to confirm the detachment.

The screenshot shows the open-e JovianDSS web interface. The main content area displays the 'Pool-0-backup' storage pool, which is in an 'ONLINE' state. Below this, there is a section for 'ISCSI targets'. A 'Detach' dialog box is open, asking for confirmation to detach a zvol from a target. The dialog text reads: 'Are you sure you want to detach this zvol from target? Zvol will be moved to "Zvols not attached to targets" group.' There are 'No' and 'Yes' buttons. A red arrow points from the 'Yes' button in the dialog to the 'Yes' button in the dialog box. Below the dialog, there is a table for 'Zvols not attached to targets' which currently shows 'No volumes found.'

2. Detaching the backup destination volume on the Backup node



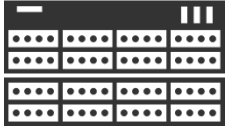
JovianDSS: **Backup node**
IP Address: 192.168.0.83

Now, the zvol00 is listed in the **Zvols not attached to targets** section.

The screenshot shows the open-e JovianDSS web interface. The left sidebar contains navigation options: Storage, User Management, Failover Settings, Storage Settings, Backup & Recovery, System Settings, and Diagnostics. The main content area is titled 'Storage' and shows details for 'Pool-0-backup', which is in an 'ONLINE' state. Below this, there are tabs for 'iSCSI targets', 'Snapshots', 'Shares', and 'Virtual IPs'. The 'iSCSI targets' section shows one target: 'iqn.2017-10.backup-node.target0' with a status of 'Active' and 0 Zvols. Below this, a table titled 'Zvols not attached to targets' shows one entry: 'zvol00' with a logical size of 1.95 TiB and a physical size of 162.75 KiB. A red arrow points from the text box on the left to the 'zvol00' entry in this table.

3. Backup task setting

open-e



JovianDSS: **Production node**
IP Address: 192.168.0.82

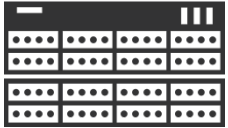
Go back to the Production node. In the menu **Backup & Recovery** -> **Tasks**, click the **Add replication task** button in order to start the **Backup task wizard**.

The screenshot shows the JovianDSS web interface in a browser window. The address bar shows the URL https://192.168.0.82. The page title is "open-e JovianDSS". The left sidebar contains a navigation menu with the following items: Storage, User Management, Failover Settings, Storage Settings, Backup & Recovery (highlighted), System Settings, and Diagnostics. The main content area is titled "Backup & Recovery" and has two tabs: "Tasks" (selected) and "Destination servers / vCenter / vSphere server". Under the "Tasks" tab, there is a search bar and a table with the following columns: Source, Source retention, Destination path, Destination retention, Description, VMware int., and Status. The table currently shows "No tasks found." and "Results per page: 10". A red arrow points from the "Add replication task" button in the top right corner of the table area to the "Add replication task" button in the text box on the left. Another red arrow points from the "Tasks" tab to the "Add replication task" button. A third red arrow points from the "Add replication task" button to the "Add replication task" button in the text box on the left.

3. Backup task setting

open-e

JovianDSS: **Production node**
IP Address: 192.168.0.82



In the first wizard step, click the **Browse** button.

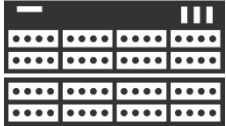
The screenshot shows the JovianDSS web interface with the 'Backup & Recovery' section selected. A 'Backup task wizard' dialog box is open, showing the '1. Source configuration' step. The 'Resource path' field is empty, and a red arrow points to the 'Browse...' button. Below this, the 'Retention-Interval plan for source' is displayed, showing three retention rules:

Snapshot Frequency	Retention Period
A snapshot taken every 5 minute(s)	should be kept for 1 hour(s)
A snapshot taken every 15 minute(s)	should be kept for 3 day(s)
A snapshot taken every 1 hour(s)	should be kept for 2 week(s)

The 'Next' button is highlighted in green, indicating the next step in the wizard.

3. Backup task setting

open-e



JovianDSS: **Production node**
IP Address: 192.168.0.82

Now, select the **Pool-0/zvol00** as the source volume and click the **Apply** button.

The screenshot shows the JovianDSS web interface. The main navigation menu on the left includes Storage, User Manager, Failover Setting, Storage Setting, Backup & Recovery (selected), System Setting, and Diagnostics. The 'Backup & Recovery' section is active, displaying a 'Backup task wizard' with five steps: 1. Source configuration, 2. Destination configuration, 3. vCenter / xSphere server integration, 4. Task properties, and 5. Summary. A 'Browse' dialog box is open over the 'Source configuration' step, showing a search for 'Zvols'. The 'Resource name' field contains 'Pool-0/zvol00'. The 'Apply' button is highlighted with a red arrow, and another red arrow points from the text box to the 'Apply' button.

3. Backup task setting

open-e



JovianDSS: **Production node**
IP Address: 192.168.0.82

The wizard will show the default retention-interval plan. It can be modified any time. Then, please click the **Next** button.

Production-Node x Backup-Node x +

https://192.168.0.82

open-e JovianDSS

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3. vCenter / vSphere server integration

Diagnostics

4. Task properties

5. Summary

Backup task wizard

1. Source configuration

2. Destination configuration

3. vCenter / vSphere server integration

4. Task properties

5. Summary

Source

Resource path: Pool-0/zvol00 Browse...

Retention-Interval plan for source

Snapshots from source will be sent every 5 minutes (i.e. the shortest interval from the source retention rules)

Retention rules:

A snapshot taken every	5	minute(s)	should be kept for	1	hour(s)	
A snapshot taken every	15	minute(s)	should be kept for	3	day(s)	X
A snapshot taken every	1	hour(s)	should be kept for	2	week(s)	X

+ Add another rule

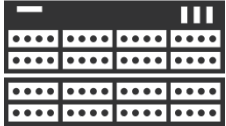
Restore to default

Cancel Next

Notifications 0 0 2

3. Backup task setting

open-e



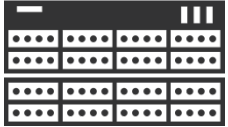
JovianDSS: **Production node**
IP Address: 192.168.0.82

In the **Destination configuration** step select the **Destination server**.

The screenshot shows the 'Backup task wizard' in the 'Destination configuration' step. The wizard is titled 'Backup task wizard' and has a sidebar with steps: 1. Source configuration, 2. Destination configuration (selected), 3. vCenter / vSphere, 4. Task properties, and 5. Summary. The main area shows a checkbox for 'Set remote destination for backup task' which is unchecked. Below it is a section for 'Destination 1' with a 'Remove resource' button. The 'Destination server and resource path' section has a 'Destination server' dropdown menu (open, showing 'Local server' and 'Add new server') and a 'Resource path' field with a 'Browse...' button. The 'Retention-Interval plan for destination' section shows 'Snapshots from source will be sent every 5 minutes (i.e. the shortest interval from the source retention rules)'. Below this are 'Retention rules' with two rows of input fields: 'A snapshot taken every 5 minute(s) should be kept for 12 hour(s)' and 'A snapshot taken every 15 minute(s) should be kept for 1 week(s)'. At the bottom are 'Cancel', 'Back', and 'Next' buttons.

3. Backup task setting

open-e



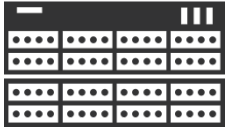
JovianDSS: **Production node**
IP Address: 192.168.0.82

Now add the new server information credentials of the **Backup node**. In this example the **IP Address**: 192.168.0.83
Default port = 40000 can be changed as well. In the Password field enter the current GUI password of the of **Backup node**.
Next, click the **Apply** button.

The screenshot shows the JovianDSS web interface with the 'Backup & Recovery' section active. A 'Backup task wizard' is open, and a sub-dialog 'Add new server' is displayed. The 'Add new server' dialog has the following fields: IP (192.168.0.83), Port (40000), Password (masked with dots), and Description (zvol backup). The 'Apply' button is highlighted in green. Red arrows point from the text in the left box to the IP, Port, Password, and Apply fields in the dialog.

3. Backup task setting

open-e



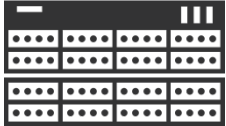
JovianDSS: **Production node**
IP Address: 192.168.0.82

In the **Resource path** click the **Browse** button.

The screenshot shows the open-e JovianDSS Backup & Recovery interface. A "Backup task wizard" dialog is open, displaying the "2. Destination configuration" step. The "Destination 1" section is expanded, showing the "Destination server and resource path" configuration. The "Destination server" is set to "192.168.0.83:40000". The "Resource path" field is empty, and a red arrow points to the "Browse..." button next to it. Below this, the "Retention-Interval plan for destination" section is visible, showing retention rules for snapshots. The "Next" button is highlighted in green.

3. Backup task setting

open-e



JovianDSS: **Production node**
IP Address: 192.168.0.82

In the **Browse** window select the **Pool-0-backup/zvol** and click the **Apply** button.

The screenshot shows the JovianDSS web interface for Backup & Recovery. The main window is titled "Backup task wizard" and is currently on the "2. Destination configuration" step. A "Browse" dialog box is open, showing a list of resources. The resource "Pool-0-backup/zvol00" is selected. The "Apply" button is highlighted with a red arrow. The "Cancel" button is also visible. The background shows the "Backup & Recovery" menu item selected in the left sidebar.

3. Backup task setting



JovianDSS: **Production node**
IP Address: 192.168.0.82

The wizard will show the default retention-interval plans. The destination default retention is much longer than on the source volume. This is why the destination volume requires more storage capacity than the source. The retention-interval plans can be modified any time.

Now click the **Next** button.

Production-Node x Backup-Node x +
https://192.168.0.82

open-e JovianDSS

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Backup task wizard

1. Source configuration

2. Destination configuration

3. vCenter / vSphere server integration

4. Task properties

5. Summary

Destination 1

Remove resource

Destination server and resource path

Destination server: 192.168.0.83:40000

Resource path: Pool-0-backup/zvol00 Browse...

Retention-Interval plan for destination

Snapshots from source will be sent every 5 minutes (i.e. the shortest interval from the source retention rules)

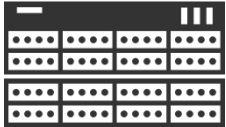
Retention rules:

A snapshot taken every	5	minute(s)	should be kept for	12	hour(s)
A snapshot taken every	15	minute(s)	should be kept for	1	week(s)
A snapshot taken every	1	hour(s)	should be kept for	3	week(s)

Cancel Back Next

3. Backup task setting

open-e



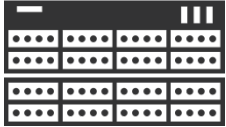
JovianDSS: **Production node**
IP Address: 192.168.0.82

In the **vCenter / vSphere server integration**, click the **Next** button in order to skip this step.

The screenshot shows a web browser window with two tabs: 'Production-Node' and 'Backup-Node'. The address bar shows 'https://192.168.0.82'. The page title is 'open-e JovianDSS'. The main navigation menu includes 'Storage', 'User Management', 'Failover Settings', 'Storage Settings', 'Backup & Recovery', 'System Settings', and 'Diagnostics'. The 'Backup & Recovery' section is active, displaying the 'Backup task wizard'. The wizard has five steps: 1. Source configuration, 2. Destination configuration, 3. vCenter / vSphere server integration, 4. Task properties, and 5. Summary. Step 3 is currently selected. In step 3, there is a checkbox labeled 'Integrate vCenter / vSphere server' which is currently unchecked. At the bottom of the wizard, there are three buttons: 'Cancel', 'Back', and 'Next'. A red arrow points from the text box on the left to the 'Next' button.

3. Backup task setting

open-e



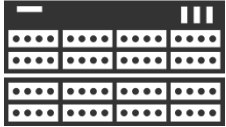
JovianDSS: **Production node**
IP Address: 192.168.0.82

In the **Task Properties** please enter the task description, and click the **Next** button.

NOTE: It is possible to assign extra RAM for buffering the replication data stream with the mbuffer option.

3. Backup task setting

open-e



JovianDSS: **Production node**
IP Address: 192.168.0.82

Next, in the **Summary** click the **Add** button.

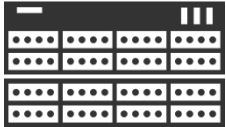
The screenshot shows the JovianDSS Backup & Recovery interface. A 'Backup task wizard' dialog is open, showing the following configuration:

- 1. Source configuration:** Resource path: Pool-0/zvol00
- 2. Destination configuration:** Source retention: 1h every 5min, 3d every 15min, 2w every 1h
- 3. vCenter / vSphere server integration:** Destination 1: Destination path: 192.168.0.83:40000/Pool-0-backup/zvol00; Destination retention: 12h every 5min, 1w every 15min, 3w every 1h, 3m every 12h
- 4. Task properties:** vCenter / vSphere server integration
- 5. Summary:** (Current step)

At the bottom of the wizard, there are three buttons: 'Cancel', 'Back', and 'Add'. A red arrow points to the 'Add' button.

3. Backup task setting

open-e



JovianDSS: **Production node**
IP Address: 192.168.0.82

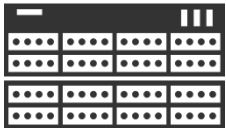
After completing the **Backup task wizard**, return to the **Backup & Recovery**. It shows all the details of the backup tasks. The **Task** has the **Enabled** status. The status can be either disabled or all settings can be edited, or the task can be deleted using the **Options** menu.

The screenshot shows the JovianDSS web interface. The left sidebar contains navigation options: Storage, User Management, Failover Settings, Storage Settings, Backup & Recovery (selected), System Settings, and Diagnostics. The main content area is titled 'Backup & Recovery' and has tabs for 'Tasks', 'Destination servers', and 'vCenter / vSphere server'. The 'Tasks' tab is active, showing a table of backup tasks. A search bar and an 'Add replication task' button are at the top. The table has columns for Source, Source retention, Destination path, Destination retention, Description, VMware, and Status. One task is listed with a status of 'Enabled' and an 'Options' menu. A red box highlights the task, and a red arrow points from the text in the callout box to the 'Enabled' status and 'Options' menu.

Source	Source retention	Destination path	Destination retention	Description	VMware	Status
Pool-0/zvol00	1h every 5min 3d every 15min 2w every 1h		1w every 15min 3w every 1h 3m every 12h			Enabled

4. List all created snapshots

open-e



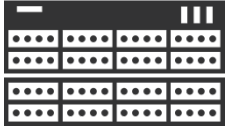
JovianDSS: **Production node**
IP Address: 192.168.0.82

Next, go to the **Storage** menu. In the **Snapshot** tab, the zvol00 includes A and B icons. **A** for Auto-snapshots and **B** for Backup functionality. Once the first auto-snapshot is created the + icon appears. After clicking the + icon, the GUI will list all the created snapshots.

The screenshot shows the open-e JovianDSS interface. The left sidebar has 'Storage' selected. The main content area shows the 'Storage' configuration for 'Pool-0'. The 'Snapshots' tab is active, displaying a table of snapshots for 'zvol00'. The table has columns for Name, Options, and a '+' icon. The first row shows 'zvol00@autosnap_2017-10-20-200500'. Below the table, there is a section for 'Snapshots of datasets' which currently shows 'No snapshots found.'.

4. List all created snapshots

open-e



JovianDSS: **Backup node**
IP Address: 192.168.0.83

Next, go to the **Backup node**. In the **Storage** menu select the **Snapshot** tab.

Once the first auto-snapshot backup is **COMPLETED** the **+** icon appears. After clicking the **+** icon the GUI will list all the **REPLICATED** snapshots on the backup volume.

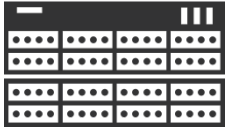
The screenshot shows the open-e JovianDSS web interface. The left sidebar contains a navigation menu with the following items: Storage, User Management, Failover Settings, Storage Settings, Backup & Recovery, System Settings, and Diagnostics. The main content area is titled 'Storage' and shows the 'Pool-0-backup' status as 'ONLINE'. Below this, there are tabs for 'Status', 'Disk groups', 'iSCSI targets', 'Snapshots', 'Shares', and 'Virtual IPs'. The 'Snapshots' tab is selected, showing a search bar and two sections: 'Snapshots of zvol' and 'Snapshots of datasets'. Under 'Snapshots of zvol', there is a table with the following data:

Name	Options
zvol00	Options
zvol00@autosnap_2017-10-20-200500	Options

The '+' icon next to the 'zvol00@autosnap_2017-10-20-200500' entry is highlighted with a red arrow. The 'Snapshots of datasets' section shows 'No snapshots found.'

5. Exporting of the backup volume to the target

open-e



JovianDSS: **Backup node**
IP Address: 192.168.0.83

In order to access the most recent data backup, the backup volume will need to be exported via a target.

On the backup node, select the **iSCSI targets** tab, then click the **Options** drop-down menu and select the **Attach to target**.

Production-Node x Backup-Node +

https://192.168.0.83

open-e JovianDSS

About Help Logout

Rescan Add zpool

Storage Pool-0-backup Options

State: ONLINE

Zpool ID: 6768746494006155078

Total storage: 191.00 GiB

Disks: 12

Status: Zpool is functioning correctly.

Action: None required.

Status Disk groups iSCSI targets Snapshots Shares Virtual IPs

+ Add new target

iqn.2017-10.backup-node.target0 Status: Active Zvols: 0

Search Options

Name	Type	SCSI ID	LUN	Logical size	Physical size	Compression	Provisioning
No volumes found.							

Zvols not attached to targets Zvols: 1

Search Options

Name	Type	Logical size	Physical size	Compression	Provisioning
1 zvols	zvols	1000.00 GiB	162.75 KiB	1.00	ti

Attach to target

Edit

Delete

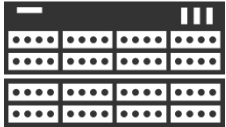
Backup task

Add to backup task

Notifications 0 0 6

5. Exporting of the backup volume to the target

open-e



JovianDSS: **Backup node**
IP Address: 192.168.0.83

In the **Attach zvol00 to target**, select the **Target** in drop-down menu and click the **Add** button.

The screenshot shows the JovianDSS web interface. The main content area displays the 'Pool-0-backup' status as 'ONLINE'. A modal dialog box titled 'Attach zvol00 to target' is open, showing the following fields:

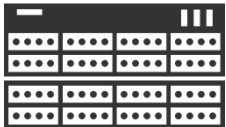
- Target name: iqn.2017-10:backup-node.target0
- SCSI ID: automatic
- LUN: 0
- Access mode: Read-write (default)

The 'Add' button is highlighted with a red arrow. Below the dialog, the 'Zvols not attached to targets' section shows a table with one entry:

Name	Type	Logical size	Physical size	Compression	Provisioning
1 zvol00	zvol	1000.00 GiB	162.75 KiB	1.00	thin

5. Exporting of the backup volume to the target

open-e



JovianDSS: **Backup node**
IP Address: 192.168.0.83

Now the **zvol00** is listed under the volume attached to the target section.

The **zvol00** can be connected via an iSCSI initiator on the client's computer.

The user data can be accessed and restored if required.

Storage

Pool-0-backup

State: ONLINE

Zpool ID: 6768746494006155078

Total storage: 191.00 GiB

Disks: 12

Status: Zpool is functioning correctly.

Action: None required.

iSCSI targets

iqn.2017-10.backup-node.target0 — Status: Active — Zvols: 1

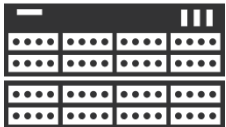
Name	Type	SCSI ID	LUN	Logical size	Physical size	Compression	Provisioning
1 zvol00	zvol	de527f65cf902fab	0	1000.00 GiB	162.75 KiB	1.00	thin

Zvols not attached to targets — Zvols: 0

No volumes found.

6. Detaching the volume network-export on Backup node

open-e



JovianDSS: **Backup node**
IP Address: 192.168.0.83

Once the data restore is completed, the volume network-export should be disabled again. In order to disable the network export of the volume, click the **Options** drop-down menu and select the **Detach** and confirm it by clicking the **Yes** button.

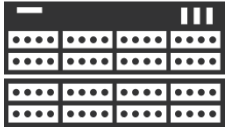
The screenshot shows the open-e JovianDSS web interface. The left sidebar contains navigation options: Storage, User Management, Failover Settings, Storage Settings, Backup & Recovery, System Settings, and Diagnostics. The main content area is titled 'Storage' and shows the configuration for 'Pool-0-backup'. The status is 'ONLINE' with a message: 'Zpool is functioning correctly. Action: None required.' Below this, there are tabs for 'Status', 'Disk groups', 'iSCSI targets', 'Snapshots', 'Shares', and 'Virtual IPs'. The 'iSCSI targets' tab is active, showing a table with one target:

Name	Type	SCSI ID	LUN	Logical size	Physical size	Compression	Provisioning
1 zvol00	zvol	de527f65cf902fcb	0	1000.00 GiB	162.75 KiB	1.00	thin

Below the table, there is a section for 'Zvols not attached to targets' which is currently empty. A red arrow points from the 'Options' menu of the 'zvol00' target to the 'Detach' option in the dropdown menu.

7. Cloning of snapshots backup data

open-e



JovianDSS: **Backup node**
IP Address: 192.168.0.83

In order to access **not** the most recent but previous data backup, the requested snapshot will need to be cloned first.

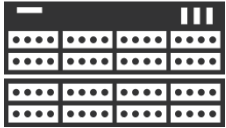
In the **Snapshots** tab, click the **Options** drop-down menu and select the **Clone**.

The screenshot shows the JovianDSS web interface. The top navigation bar includes 'Production-Node' and 'Backup-Node' tabs, a search bar, and a 'Logout' button. The main content area is titled 'Storage' and shows details for 'Pool-0-backup', which is in an 'ONLINE' state. Below this, there are tabs for 'Snapshots', 'Shares', and 'Virtual IPs'. The 'Snapshots' tab is selected, showing a list of snapshots for 'zvol00'. A red arrow points from the 'Options' menu of a snapshot to the 'Clone' option. Another red arrow points from the 'Options' menu to the 'Snapshots' tab.

Name	Options
zvol00	Options
zvol00@autosnap_2017-10-20-200500	Options
zvol00@autosnap_2017-10-20-201000	Options
zvol00@autosnap_2017-10-20-201500	Delete Snapshot details Clone Rollback

7. Cloning of snapshots backup data

open-e



JovianDSS: **Backup node**
IP Address: 192.168.0.83

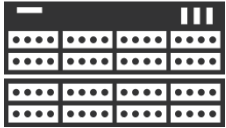
Enter the volume-clone name and
select the **Attach to target**

The screenshot shows the JovianDSS web interface. The main content area displays the 'Pool-0-backup' status as 'ONLINE'. A modal dialog box is open, titled 'Clone "zvol00@autosnap_2017-10-20-201000"'. The dialog has a 'Name' field containing 'zvol00-clone' and an 'Attach to target' checkbox that is checked. There are 'Cancel' and 'Add' buttons at the bottom of the dialog. In the background, a table lists snapshots for 'zvol00' with columns for Name, Status, and Options.

Name	Status	Options
zvol00@autosnap_2017-10-20-200500		Options
zvol00@autosnap_2017-10-20-201000		Options
zvol00@autosnap_2017-10-20-201500		Options

7. Cloning of snapshots backup data

open-e



JovianDSS: **Backup node**
IP Address: 192.168.0.83

Select the target from the drop-down menu and click the **Add** button.

Production-Node Backup-Node
https://192.168.0.83

open-e JovianDSS

About Help Logout

Storage Rescan Add zpool

Pool-0-backup Options

Clone "zvol00@autosnap_2017-10-20-201000"

Clone properties

Name: zvol00-clone

Attach to target

Target name: ign.2017-10.backup-node.target0

SCSI ID: automatic Generate

LUN: 0

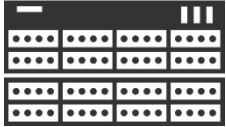
Access mode: Read-write (default)

Cancel Add

Notifications 0 0 6

7. Cloning of snapshots backup data

open-e



JovianDSS: **Backup node**
IP Address: 192.168.0.83

A new zvol00-clone has been created and attached to the target. The **zvol00-clone** can be connected via an iSCSI initiator on the client's computer. The user data can be accessed and restored if required.

The screenshot shows the JovianDSS web interface for a backup node. The left sidebar contains navigation options: Storage, User Management, Failover Settings, Storage Settings, Backup & Recovery, System Settings, and Diagnostics. The main content area displays the configuration for 'Pool-0-backup', which is in an 'ONLINE' state. A status message indicates 'Zpool is functioning correctly. Action: None required.' Below this, there are tabs for 'Status', 'Disk groups', 'iSCSI targets', 'Snapshots', 'Shares', and 'Virtual IPs'. The 'iSCSI targets' tab is active, showing a table of targets. One target is listed: 'iqn.2017-10.backup-node.target0' with a status of 'Active' and 1 Zvol. Below this, a table shows the details of the attached Zvol:

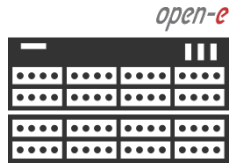
Name	Type	SCSI ID	LUN	Logical size	Physical size	Compression	Provisioning
1 zvol00-clone	clone	720d622727d30539	0	1000.00 GiB	< 1 B	1.00	thin

Below the target table, there is a section for 'Zvols not attached to targets' with 1 Zvol. A table shows the details of this Zvol:

Name	Type	Logical size	Physical size	Compression	Provisioning
1 zvol00	zvol	1000.00 GiB	162.75 KiB	1.00	thin

At the bottom of the interface, there is a 'Notifications' bar showing 0 errors, 0 warnings, and 6 info messages.

7. Cloning of snapshots backup data



JovianDSS: **Production node**
IP Address: 192.168.0.82

After a while the GUI will list more auto created snapshots, accordingly to the retention-interval plans defined in the replication tasks.

The screenshot shows the JovianDSS web interface. The left sidebar contains navigation options: Storage, User Management, Failover Settings, Storage Settings, Backup & Recovery, System Settings, and Diagnostics. The main content area is titled 'Storage' and shows details for 'Pool-0'. The status is 'ONLINE'. A message box indicates 'Status: Zpool is functioning correctly. Action: None required.' Below this, there are tabs for Status, Disk groups, iSCSI targets, Snapshots, Shares, and Virtual IPs. The 'Snapshots' section is expanded, showing a search bar and a table of snapshots for 'zvol00'. The table lists several snapshots, including one with a tooltip that says 'This resource has a replication BACKUP task configured'. At the bottom, there are notification icons for 0 errors, 0 warnings, and 2 info messages.

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Thank you!
