



NASLORD

Release Notes, v1.1



Gallium Inc.

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INTRODUCTION

NASLORD FOR POWERSCALE

Managing multi tenancy on PowerScale cluster

OneFS, the operating system running on PowerScale clusters, has the ability to support multiple tenants. It can support up to fifty separate tenants in a single cluster, each with their own subnet, routing, DNS, and security infrastructure. OneFS provides the ability to separate data layout with SmartPools, export and share level segregation, granular authentication and access control with Access Zones, and network partitioning with SmartConnect, subnets, and VLANs.

NASLORD tenant manager for PowerScale

NASLORD provide additional features over OneFs by simplifying and offering tenant self-service quota and snapshot schedule management as well as SMB shares and NFS exports.

Using NASLORD, administrators can delegate full Access Zone management to their users. Those special users, called "Access Zone Administrators" have a simple and secure way to manage their own Access Zone.

NASLORD can manage one or multiple Clusters. When connected to NASLORD, "Access Zone Administrators" sees only the access zones of the clusters they have been authorized. They can browse the file system associated with their own Access Zones on which they can view/create/edit/delete Quota, Snapshot schedule, NFS exports and SMB shares.

NASLORD FOR POWERPROTECT DD

Managing retention lock on PowerProtect DD

Retention lock is a feature of Dell's PowerProtect DD (Data Domain) to prevent modification or deletion of certain sets of files for a predetermined period.

That is, retention locked files are read-only until their retention period expires.

In the event of a Ransomware attack, even if your backup server is compromised, the attacker will be unable to encrypt or delete your backup copies.

NASLORD retention lock manager for PowerProtect DD

NASLORD Enables retention lock features for any applications. It automates the creation of the Retention Lock copies on the PowerProtect and the configured retention period will get applied by PowerProtect.



The copies are created very quickly using a feature called *fastcopy*. Since PowerProtect applies deduplication to all your data, these copies use very little disk space.

NASLORD also takes care of deleting the older copies, for which the retention period has expired

REQUIREMENTS

NASLORD is distributed as a portable, ready-to-go appliance.

NASLORD OVA requires

- VMWare ESXi 6.5+
- 4G ram
- 16G HD
- 1 virtual network adapte



INSTALLATION

DEPLOYING THE OVA

NASLORD OVA can be download from : <https://downloads.gallium-it.com>

From VCenter, choose Deploy OVF Template

Actions - Datacenter

- Add Host...
- New Cluster...
 - New Folder
 - Distributed Switch
- New Virtual Machine...
- Deploy OVF Template...
- Storage

Deploy OVF Template

1 Select an OVF template

2 Select a name and folder

3 Select a compute resource

4 Review details

5 Select storage

6 Ready to complete

Select an OVF template

Select an OVF template from remote URL or local file system

Enter a URL to download and install the OVF package from the local hard drive, a network share, or a CD/DVD drive.

☐ URL

☒ Local file

Choose Files

naslord-1.0-300.ova

Choose the previously downloaded OVA file, give it a name and select destination folder.

Deploy OVF Template

✓ 1 Select an OVF template

2 Select a name and folder

3 Select a compute resource

4 Review details

5 Select storage

6 Ready to complete

Select a name and folder

Specify a unique name and target location

Virtual machine name:

naslord-1.0-300

Select a location for the virtual machine.

▼ vcenter.gallium.lab

> Datacenter



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Select storage

Deploy OVF Template

- ✓ 1 Select an OVF template
- ✓ 2 Select a name and folder
- ✓ 3 Select a compute resource
- ✓ 4 Review details
- ✓ 5 License agreements
- 6 Select storage**
- 7 Select networks
- 8 Customize template
- 9 Ready to complete

Select storage


Select the storage for the configuration and disk files

☐ Encrypt this virtual machine (Requires Key Management Server)

Select virtual disk format:

Thin Provision

VM Storage Policy:

Name	Capacity	Provisioned	Free
 PowerMax	8.78 TB	28.06 TB	4.76 TB

Configure network setting or leave blank to use DHCP.

Deploy OVF Template

- ✓ 1 Select an OVF template
- ✓ 2 Select a name and folder
- ✓ 3 Select a compute resource
- ✓ 4 Review details
- ✓ 5 License agreements
- ✓ 6 Select storage
- ✓ 7 Select networks
- 8 Customize template**
- 9 Ready to complete

✓ All properties have valid values

> Advanced settings	1 settings
> Networking	6 settings
Hostname	Hostname (Enter the FQDN, DHCP if left blank) <u>naslord.gallium.lab</u>
DNS	DNS Servers (Space-separated list, DHCP if left blank) <u>192.168.11.22</u>
IP Address	IP Address of eth0 (DHCP if left blank) <u>192.168.12.196</u>
Netmask bits	Ex: 24 (DHCP if left blank) <u>24</u>
DNS Domain	DNS Domain Name (DHCP if left blank) <u>gallium.lab</u>
Gateway	Default gateway (DHCP if left blank) <u>192.168.12.1</u>

CANCEL

BACK

NEXT

Click NEXT, wait for deployment to complete then start the virtual machine.

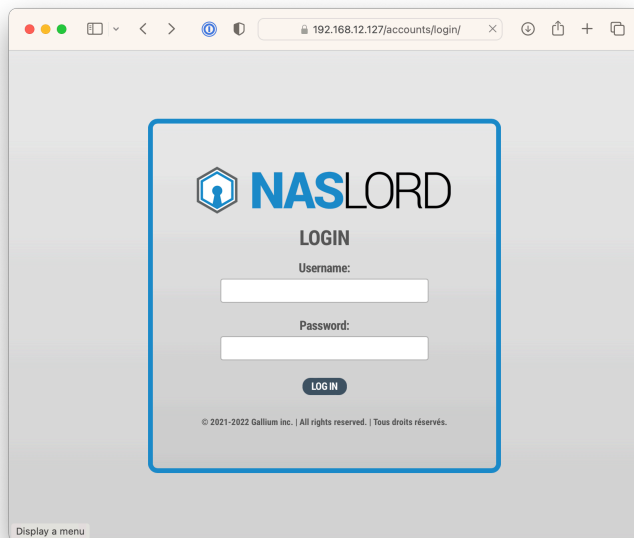


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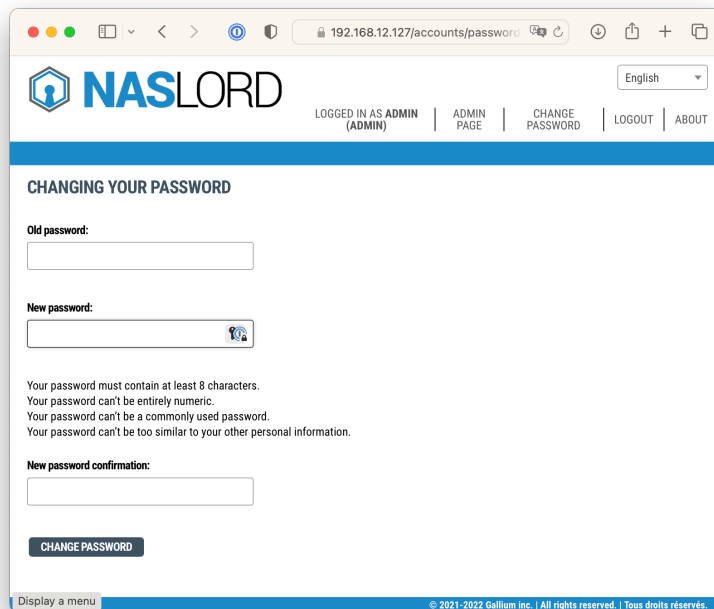
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INITIAL CONFIGURATION

Open a browser using its hostname or ip address.
Default password for user admin is 'changeme'.



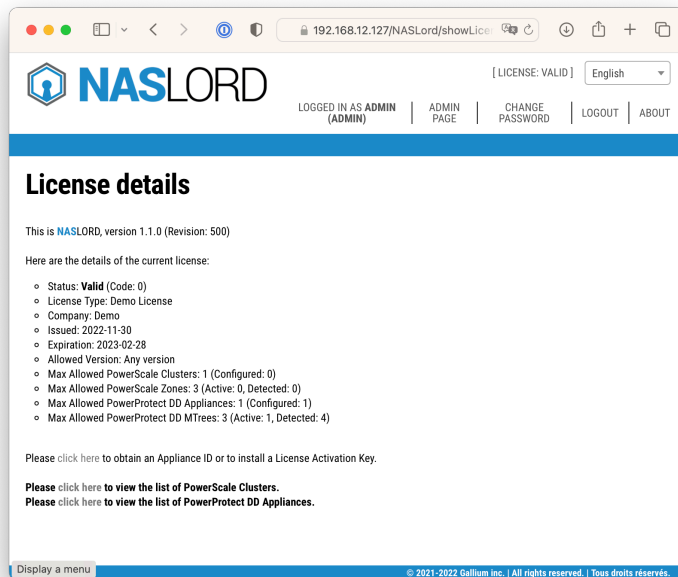
Click on CHANGE PASSWORD to create a new password.



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You will have a 90 days trial before you need to request a production license.



(OPTIONAL) CREATE ADDITIONAL SUPER-USER ACCOUNTS

Navigate to "ADMIN PAGE" → "USER MANAGEMENT" → "+ ADD USER"

Enter the desired Username and Password. Enter the password in the "Password confirmation" field as well.

Enable the "Super-user " checkbox.

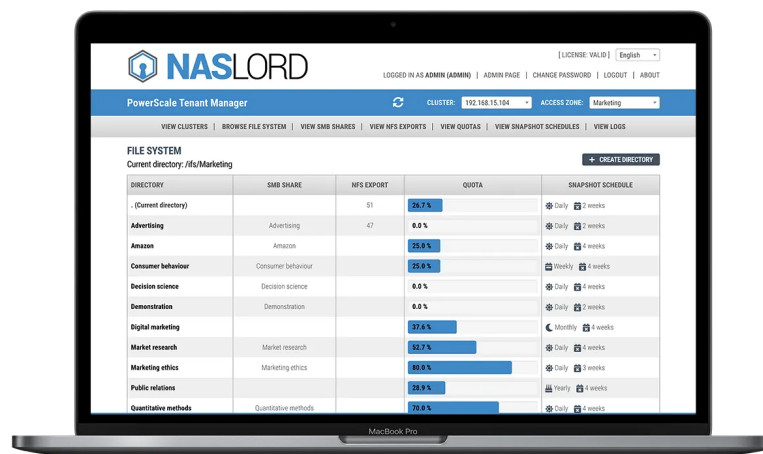
Note: Super-users do not need to be explicitly granted access to any specific Access Zones or MTrees. Super-users automatically have access to all Access Zones and MTrees across all Clusters.



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POWERSCALE TENANT MANAGER

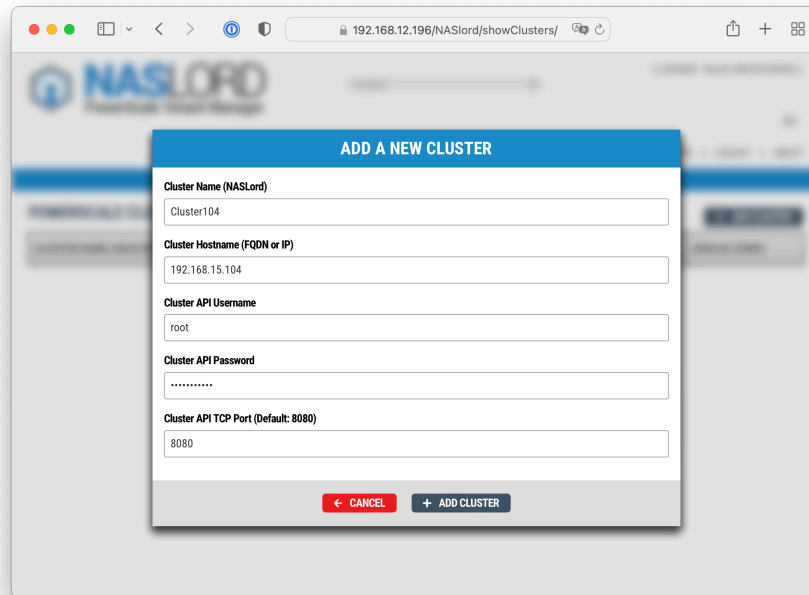


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Navigate to the **POWERSCALE CLUSTERS** page and use the "ADD CLUSTER" button located on the top right.

Note: When adding a new cluster to **NASLORD**, all Access Zones are automatically discovered and added to the **NASLORD** configuration. Users do not automatically get access to any Access Zone; access must be granted explicitly. See section below on how to create a dedicated user on PowerScale if you don't want to use the root account.

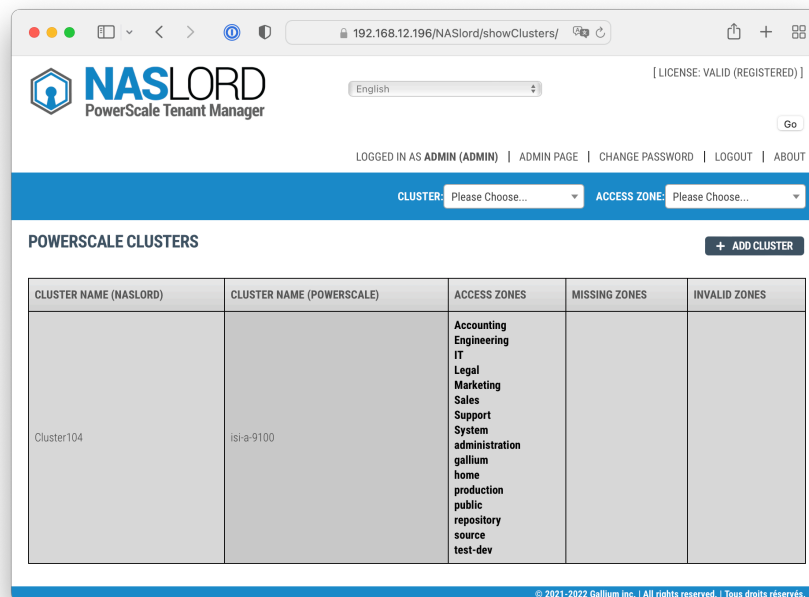


The screenshot shows a web browser window with the URL `192.168.12.196/NASlord/showClusters/`. A modal dialog titled "ADD A NEW CLUSTER" is displayed in the center. The form contains the following fields:

- Cluster Name (NASLord)**: `ClusterT04`
- Cluster Hostname (FQDN or IP)**: `192.168.15.104`
- Cluster API Username**: `root`
- Cluster API Password**: `.....`
- Cluster API TCP Port (Default: 8080)**: `8080`

At the bottom of the modal, there are two buttons: a red "← CANCEL" button and a blue "+ ADD CLUSTER" button.

POWERSCALE TENANT MANAGER



CREATING A TENANT ADMINISTRATOR.

Navigate to "ADMIN PAGE" → "USER MANAGEMENT"

Click on the "+ Add" button next to the "Users" item, under the "Authentication and Authorization" heading on the left side of the screen.

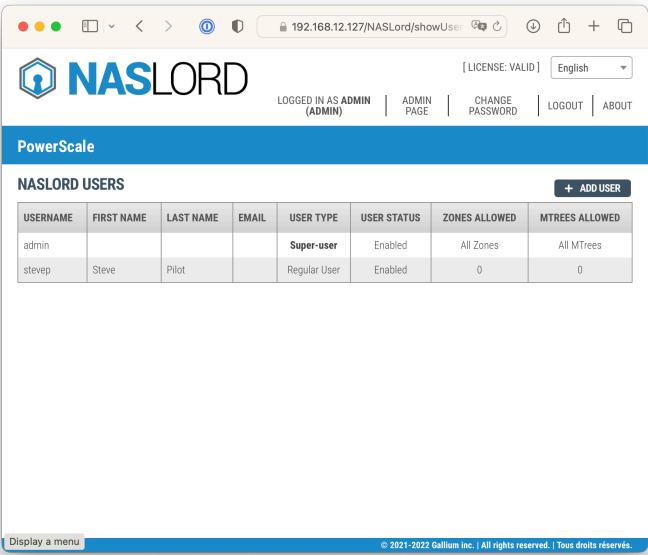
Enter the desired Username and Password. Select the Access Zone this user is allowed to manage.

Click on the "SAVE" button on the bottom right.



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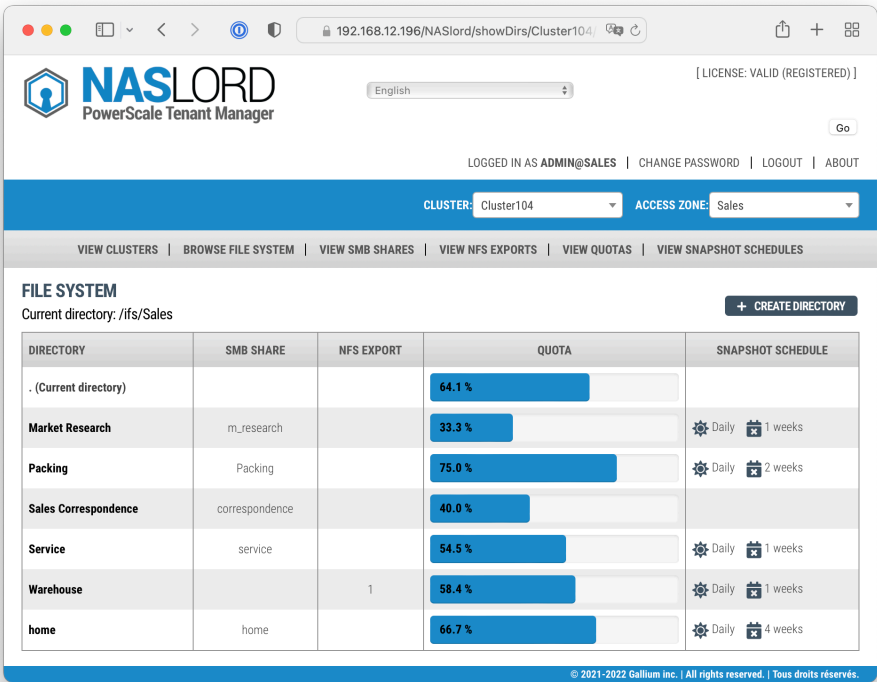
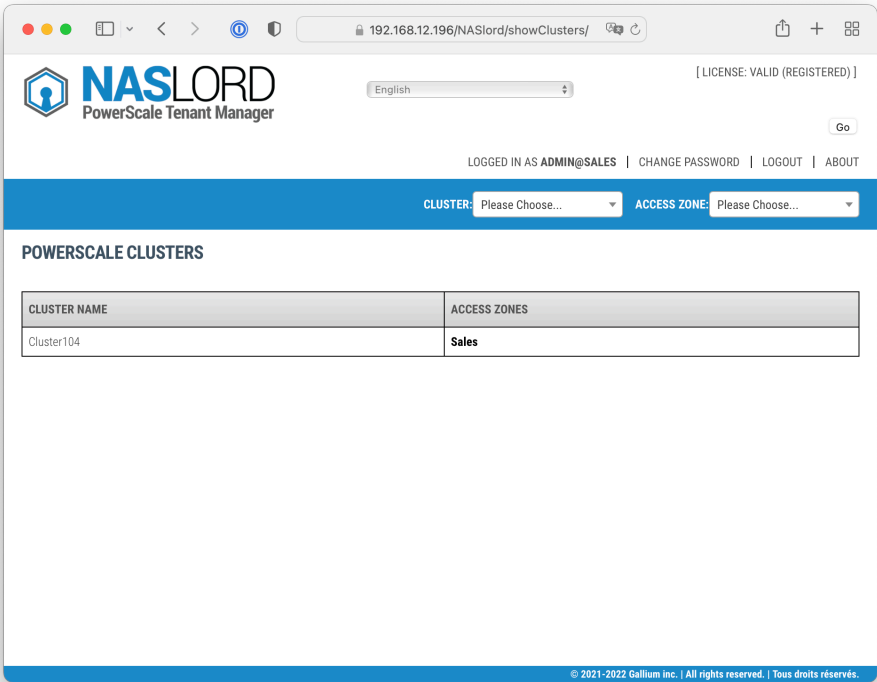
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Note: Super-users do not need to be explicitly granted access to any specific Access Zones, they automatically have access to all Access Zones, across all Clusters configured in NASLORD.

POWERSCALE TENANT MANAGER

Tenant administrator will be restricted to his own access zones.



(OPTIONAL) CREATE A DEDICATED USERS AND ROLE ON YOUR CLUSTERS

Follow these steps if you want to connect to your clusters with credentials other than root.

In OneFS CLI, create a new user called "naslord", with password "changeme" (Please use a secure password!)

```
isi auth users create naslord --enabled yes --password changeme
isi auth users modify naslord --password-expires no
```

Grant the user naslord READ/WRITE access to the cluster by creating a role and assigning it to the naslord user

```
isi auth roles create --name NasLordAdmin --description "NasLordAdmin
role READ/WRITE"
isi auth roles modify NasLordAdmin --add-user naslord
isi auth roles modify NasLordAdmin --add-priv ISI_PRIV_LOGIN_PAPI
isi auth roles modify NasLordAdmin --add-priv ISI_PRIV_NFS
isi auth roles modify NasLordAdmin --add-priv ISI_PRIV_QUOTA
isi auth roles modify NasLordAdmin --add-priv ISI_PRIV_SMB
isi auth roles modify NasLordAdmin --add-priv ISI_PRIV_SNAPSHOT
isi auth roles modify NasLordAdmin --add-priv ISI_PRIV_NS_TRAVERSE
isi auth roles modify NasLordAdmin --add-priv ISI_PRIV_NS_IFS_ACCESS
isi auth roles modify NasLordAdmin --add-priv ISI_PRIV_IFS_BACKUP
isi auth roles modify NasLordAdmin --add-priv ISI_PRIV_IFS_RESTORE
isi auth roles modify NasLordAdmin --add-priv-ro ISI_PRIV_AUTH
isi auth roles view NasLordAdmin
```

Alternatively, grant the naslord user READ-ONLY access to your cluster (users will not be able to modify anything)

```
isi auth roles create --name NasLordAdmin --description "NasLordAdmin
role READ-ONLY"
isi auth roles modify NasLordAdmin --add-user naslord
isi auth roles modify NasLordAdmin --add-priv-ro ISI_PRIV_LOGIN_PAPI
isi auth roles modify NasLordAdmin --add-priv-ro ISI_PRIV_NFS
isi auth roles modify NasLordAdmin --add-priv-ro ISI_PRIV_QUOTA
isi auth roles modify NasLordAdmin --add-priv-ro ISI_PRIV_SMB
isi auth roles modify NasLordAdmin --add-priv-ro ISI_PRIV_SNAPSHOT
isi auth roles modify NasLordAdmin --add-priv-ro ISI_PRIV_NS_TRAVERSE
isi auth roles modify NasLordAdmin --add-priv-ro ISI_PRIV_NS_IFS_ACCESS
isi auth roles modify NasLordAdmin --add-priv-ro ISI_PRIV_AUTH
isi auth roles view NasLordAdmin
```

To delete the user and role created for NASLord

```
isi auth roles delete NasLordAdmin --force  
isi auth users delete naslord -force
```


RETENTION LOCK MANAGER

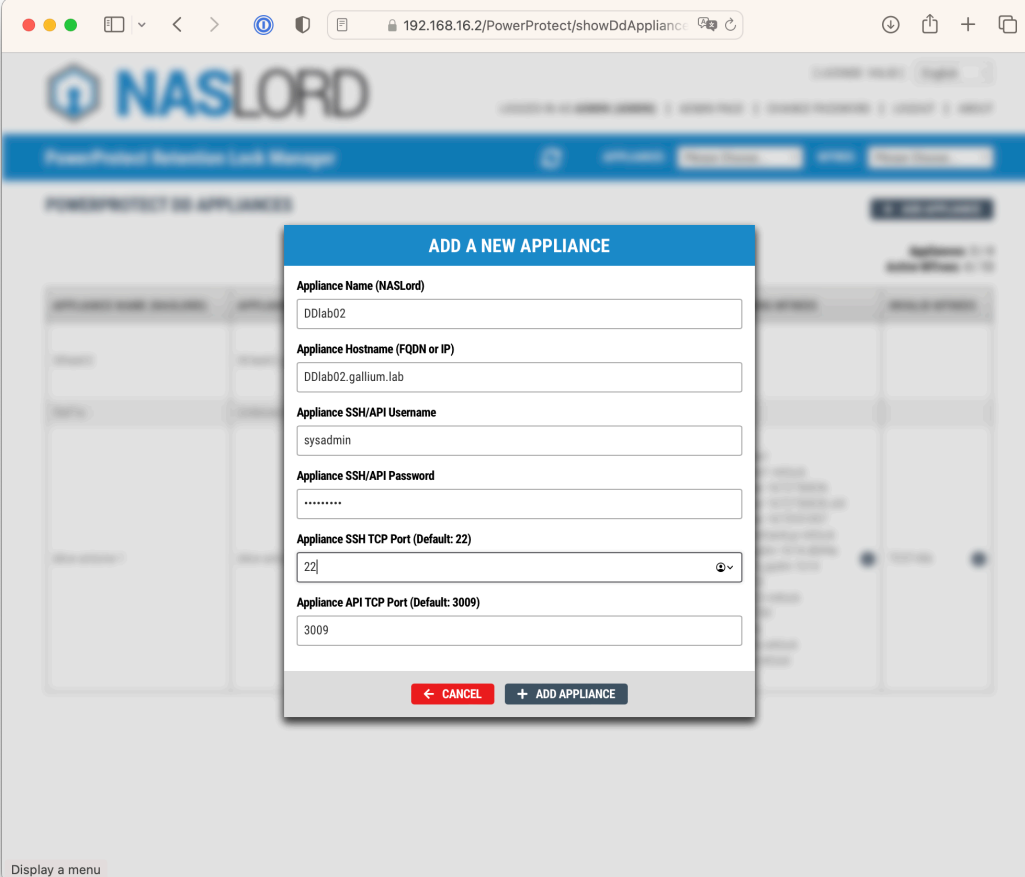


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Navigate to the **POWERPROTECT DD APPLIANCES** page and use the "ADD APPLIANCE" button located on the top right.

Note: When adding a new appliance to **NASLORD**, all MTrees are automatically discovered and added to the **NASLORD** configuration. Users do not automatically get access to any MTrees; access must be granted explicitly. See section below on how to create a dedicated user on PowerProtect DD if you don't want to use the sysadmin account.



The screenshot shows a web browser window with the URL `192.168.16.2/PowerProtect/showDdAppliance`. The page title is "NASLORD" and the subtitle is "PowerProtect Retention Lock Manager". A modal form titled "ADD A NEW APPLIANCE" is displayed in the center. The form contains the following fields:

- Appliance Name (NASLord): `DDlab02`
- Appliance Hostname (FQDN or IP): `DDlab02.gallium.lab`
- Appliance SSH/API Username: `sysadmin`
- Appliance SSH/API Password: `*****`
- Appliance SSH TCP Port (Default: 22): `22`
- Appliance API TCP Port (Default: 3009): `3009`

At the bottom of the modal, there are two buttons: "CANCEL" and "ADD APPLIANCE".

CREATING A TENANT ADMINISTRATOR.

Navigate to the "ADMIN PAGE" → "USER MANAGEMENT"

Click on the "+ Add" button next to the "Users" item, under the "Authentication and Authorization" heading on the left side of the screen.

Enter the desired Username and Password. Select the MTrees this user is allowed to manage. Click on the "SAVE" button on the bottom right.

ADD A NEW USER

Username (*)
backupAdmin

First Name
Steve

Last Name
Job

Email
steve@gallium.lab

Password (*)

Your password must contain at least 8 characters.
Your password can't be entirely numeric.
Your password can't be a commonly used password.
Your password can't be too similar to your other personal information.

☒ Enabled
☐ Super-user

Please select the Access Zones this user is allowed to manage (multiple allowed).
[Empty selection box]

Please select the MTrees this user is allowed to manage (multiple allowed).
DDlab02/backup01

Note: Super-users do not need to be explicitly granted access to any specific Access Zones or MTrees, they automatically have access to all active Access Zones and MTrees, across all Clusters and Appliances configured in NASLORD.

Note: Super-users do not need to be explicitly granted access to any specific MTrees, they automatically have access to all Access Zones, across all Clusters configured in NASLORD.

POWERPROTECT DD CLI CONFIGURATIONS

CREATE SOME USERS

User "naslord" will be used by the NasLord Vm to create the "fastcopy" to the retention locked mtrees

```
user add naslord role backup-operator min-days-between-change 0  
max-days-between-change 99999
```

User "veeambackup" will be used by Veeam to execute regular backup/restore operations

```
user add veeambackup role none min-days-between-change 0 max-  
days-between-change 99999
```

User "veeamrecover" will be used by Veeam to recover backups from retention locked mtrees in case of disaster

```
user add veeamrecover role none min-days-between-change 0 max-  
days-between-change 99999
```

CREATE STORAGE-UNIT FOR REGULAR BACKUPS

```
mtree create /data/col1/backup01
```

```
ddboost storage-unit modify backup01 user veeambackup
```

CREATE STORAGE-UNIT FOR RECOVERIES IN CASE OF DISASTER

```
mtree create /data/col1/backup01-recover
```

```
ddboost storage-unit modify backup01-recover user veeamrecover
```

CREATE MTREE FOR RETENTION LOCK

```
mtree create /data/col1/backup01-retlock
```

```
mtree retention-lock enable mode governance mtree  
/data/col1/backup01-retlock
```

```
mtree retention-lock set min-retention-period 720min mtree  
/data/col1/backup01-retlock
```

```
mtree retention-lock set max-retention-period 2days mtree  
/data/col1/backup01-retlock
```

RETENTION LOCK MANAGER

```
mtree retention-lock set automatic-retention-period 720min mtree  
/data/col1/backup01-retlock
```

```
mtree retention-lock set automatic-lock-delay 5min mtree  
/data/col1/backup01-retlock
```

CREATE NFS EXPORT (SPECIFY NASLORD-VM IP)

```
nfs export create backup01 path /data/col1/backup01 clients  
192.168.12.0 options  
"ro,no_root_squash,no_all_squash,secure,sec=sys"
```

```
nfs export create backup01-retlock path /data/col1/backup01-  
retlock clients 192.168.12.0 options  
"rw,no_root_squash,no_all_squash,secure,sec=sys"
```



(OPTIONAL) STEPS TO RECONFIGURE THE VIRTUAL MACHINE

- In vCenter
- Click on the **NASLORD** virtual machine
- Shutdown the VM (shutdown guest OS)
- Select "Configure" tab
- Under "Settings", click on "vApp Options"
- Scroll down to the Properties section

To reset the admin password

- Select guestinfo.reset_admin_pass
- Click on "EDIT"
- Select the "Type" tab
- Put a check mark in "User configurable"
- Click on "SAVE"
- Click on "SET VALUE"
- Type "yes" and click "OK"
- Power on the VM

At this point the vm will boot, the admin password will be reset to default value "changeme" and the Vm will shut down by itself. You will need to set the value of "guestinfo.reset_admin_pass" to "no" before powering back on.

To reset to factory settings

- Select guestinfo.reset_to_factory
- Click on "EDIT"
- Select the "Type" tab
- Put a check mark in "User configurable"
- Click on "SAVE"
- Click on "SET VALUE"
- Type "yes" and click "OK"
- Power on the VM

At this point the vm will boot, it will reset the database to factory defaults. The Vm will then shut down by itself. You will need to set "guestinfo.reset_to_factory" to "no" before powering back on.

To reconfigure network settings

- Click on "SET VALUE" on the following properties:
 - guestinfo.hostname (Enter FQDN for this vm)
 - guestinfo.dns (Enter DNS ip addresses using space separated values)
 - guestinfo.ipaddress (Enter IPV4 address)
 - guestinfo.netmask (Enter netmask bits Ex: **24** for 255.255.255.0)
 - guestinfo.domain (Enter DNS domain name)



- guestinfo.gateway (Enter default gateway)
- Or leave all blank to use DHCP instead.*
- Power on the VM



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5. TERMINATION. This Agreement terminates on the date of the first occurrence of either of the following events: (1) The expiration of one (1) month from written notice of termination from Customer to Gallium Inc.; or (2) One party materially breaches any terms of this Agreement or any terms of any other agreement between Customer and Gallium Inc., that are either uncorrectable or that the breaching party fails to correct within one (1) month after written notification by the other party.

6. GOVERNING LAW. The agreement shall be governed by the laws of Quebec, Canada. Any action or proceeding brought by either party against the other arising out of or related to this agreement shall be brought only in a state or federal court of competent jurisdiction located in Montreal, Quebec, Canada. The parties hereby consent to the personal jurisdiction of such courts.

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HOW TO CONTACT GALLIUM

To inquire about **NASLORD** or to obtain a quote for a licensed version, please contact us directly:



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Canada H3B 4W8

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