Dell EMC ViPR Controller

Version 3.6.2.3

New Features and Changes

302-005-502

REV 02

D&LLEMC

CHAPTER 1

New Feature

Changes introduced with ViPR Controller version 3.6.2

Describes the new features and changes introduced in version 3.6 Service Pack 2 of ViPR Controller.

Ability to select VMFS version during provisioning

When provisioning VMFS datastores, you have the option to specify VMFS5 or VMFS6 format. This option is available in the " Create Volume and Datastore" and the "Create VMware Datastore" catalog service under "Block Services for VMware vCenter".

DiagUtils UI

You can download full diagnostic data for ViPR-C from the System > Logs page. You can choose to download logs, zookeeper data, data from database, properties etc from all or specific nodes. You can also choose to upload the diagnostic data to an FTP server or SFTP server.

Predefined Port Groups For VMAX Provisioning

ViPR Controller 3.6.2.0 does provision block storage from VMAX with user defined port group. You can use this feature by enabling a controller configuration setting **Use Existing Port Group** in **VMAX Masking** tab. By default, it is set to false. When making this controller configuration to True, you can specify pre-defined port group while provisioning volume to host or cluster. The specified port group is used in masking view on the VMAX array.

Change Port Group for Host

You can change the port group for Hosts/Clusters within VMAX Storage System only. A port group change can be done if the new port group has no storage port overlap with the old port group. A new masking view is created with the new port group for the host or cluster, and the old masking view with the existing port group is removed. This service gives you the option to wait or suspend the workflow before removing the old masking view. This ensures that the new masking view takes effect before the old one is removed.

Before you begin

VMAX **Use Existing Port Group** parameter must be enabled to use this feature. New port group must be created before using this service. If you want to change port group for an export where there are pre-existing masking views for a host or cluster in the export group, first ingest any volumes exported to the host, then change port group for the export.

Procedure

1. Select **Catalog** > **View Catalog** > **Block Storage Services** > **Change Port Group for Host**.

2. Select **Project**.

3. Select **Storage Type** as **Exclusive** for exports to a single host or **Shared** for exports to a cluster

4. Select the particular **Host/Cluster**, where the port group update is required.

5. Select **Export Group**, where the port group update is required

6. Select **Virtual Array** containing the Export Group to be changed.

7. Select **Current Port Group**.

8. Select **Change Port Group To**.

9. Check **Pause Order for Validation** checkbox.

   If checked, 1. Masking and zoning operations is performed to change the port group (new paths is added) 2. Host rescan if performed if possible 3. The Order is paused for you to validate that the new ports are connected, masked and zoned to the host. 4. After validation, if you want to proceed, click **Resume** button in the order page to complete the order, and ports is changed (old paths is removed). Otherwise, click **Cancel** button in the order page to rollback the order (old paths is retained).

viprcli volume create

Create a volume with the given parameters.

Syntax

```
        viprcli volume create
        [-h]
        [-hostname|hn <hostname>]
        [-port|po <port_number>]
        [-portui|pu
     <ui_port_number>]
        [-cookiefile|cf
     <cookiefile>]
        -name|n <volumename>
        -size|s <volumesize
     [kKmMgGtT]>
        -project|pr
     <projectname>
        [-tenant|tn
     <tenantname>]
        -vpool|vp <vpoolname>
        -varray|va <varray>
        [-count|cu <count>]
  <consistentgroupname>]
        [-consistencygroup|cg;]
   <portgroup>]
        [-portgroup|port_group_name;]
        [-serialnumber|sn] <serialnumber>
        [-synchronous|sync]
        [-synctimeout|syncto]
```

Description

`viprcli volume create` command creates one or more volumes. This volume can be added to an export group so that users can access it.

Note

An AD user can belong to only one tenant at a time and therefore, avoid using the tenant (tn) parameter when creating a volume under a project, if you are an AD user with an ACL 'All' privilege.

Options

name|n

    The name of the volume. This is a mandatory parameter.

size|s

    Size is in bytes. Size can be followed by a size specifier (K or k, M or m, G or g, or T or t). K implies multiples of 1024 bytes, M implies multiples of (1024 * 1024) bytes, and so on. This is a mandatory parameter.

project|pr

    A valid project name. This is a mandatory parameter.

tenant|tn

    A valid tenant name. This is an optional parameter.

vpool|vp

    A valid virtual pool name. This is a mandatory parameter.

varray|va

    A valid virtual array name. This is a mandatory parameter.

count|cu

    Count. This specifies the number of volumes to be created. This is an optional parameter.

consistencygroup|cg

    The name of the consistency group. This is an optional parameter.

portgroup name|port_group name

    The name of the port group. This is an optional parameter.

serial number|sn

    The serial number of the port group's storage system. This is an optional parameter.

synchronous|sync

    Perform the file system creation synchronously. If this argument is not specified, the file system creation will be performed asynchronously. This is an optional parameter.

synctimeout|syncto

    Sync timeout in seconds. This is an optional parameter.

Common Arguments

    This operation also takes the Common Parameters.

Example 1

Example 1 (continued)

```
viprcli volume create -n VNX_VOL-1 -s 1K
-project TEST_PROJECT11 -vp TEST_BLOCK_GOLD_VNX -va hopkinton
-protocol FC -sync

viprcli volume list -pr TEST_PROJECT11

Name                     Capacity        Protocols
B_VOL                    1024            FC
B_VOL-2-1                1024            FC
B_VOL-2-2                1024            FC
C_VOL                    10485           FC
TEST_VNX_FC_VOLUME1      1073741824      FC
VNX_VOL1                 1024            FC
```

Example 2

```
viprcli volume create -n VNX_VOL-1 -s 1K
-project TEST_PROJECT11 -vp TEST_BLOCK_GOLD_VNX -va hopkinton
-protocol FC  -count 2

viprcli volume list -pr TEST_PROJECT11 -l

Name     Capacity  Maxsnapshots  MultivolumeConsistency
Protocols
B_VOL    1024      2             false                    FC
B_VOL2   1024      2             false                    FC
B_VOL    1024      2             false                    FC
C_VOL    1048576   2             false                    FC
VNX_VOL1 1024      2             false                    FC
```

Example 3

- Create volume with SRDF pool

```
viprcli volume create -n mysrdfvol -s 4G -va myvarray -pr sanity -
vp srdfpool1 –sync

viprcli volume list -l -pr sanity

NAME
                        PROVISIONED_CAPACITY_GB  PROTOCOLS
THINLY_PROVISIONED    TAGS
mysrdfvol

4.00
  FC        False
mysrdfvol-target-myvarray
4.00
  FC        False
```

Example 4

- Volume create with optional parameter portgroup

```
volume create -n New_HR_vol -pr HR -va v197test -vpool 197 -s 1g -
sn 197 -portgroup PG_HR
```

viprcli exportgroup add_vol

Add a volume or a snapshot to the export group.

Syntax

```
viprcli exportgroup add_vol
[-h]
[-hostname|hn          <hostname>]
[-port|po <port_number>]
[-portui|pu        <ui_port_number>]
[-cookiefile|cf         <cookie_file>]
[-name|n <exportgroupname>]
[-volume|v <volumename>         [<Volume> ...]
[-project|pr     <projectname>]
[-tenant|tn <tenantname>]
[-snapshot|sh <snapshot for     volume> [<Snapshotname for
volume> ...]]
[-blockmirror|bmr <Block Mirror for         volume>[<Block Mirror
for volume> ...]]
[-consistencygroup|cg     <consistencygroup>]
[-varray|va <varray>]
[-maxpaths|mxp        <max_paths>]
[-minpaths|mnp        <min_paths>]
[-pathsperinitiator|ppi         <paths_per_initiaton>;
[-portgroup|port_group_name  <portgroupname>]
[-serialnumber|sn]
[-synchronous|sync]
[-synctimeout|syncto]
```

Description

`viprcli exportgroup add_vol` command adds a volume or a snapshot to the export group. You can add a snapshot of a volume or a snapshot from a consistency group to an export group even when the parent volume is not part of that export group. A volume and its snapshots are treated as separate and independent objects for export purposes. An export group can also export snapshots to the host initiators. This command is silent on success.

Options

name|n

The name of a valid export group. This is a mandatory parameter.

volume|v

A list of volume and Host LUN ID (HLU) pairs in the format:
`<volume_name>:<HLU>`
. For example, volk:-1. The syntax for specifying multiple volumes is, <volumename_1>:<HLU1> <volumename_2>:<HLU2>, and so on. The volume names must be valid volumes within ViPR Controller.

Note

If you set HLU equal to -1, then the array will assign the HLU number.

This is a mandatory parameter.

project|pr

The name of a ViPR Controller project. This is a mandatory parameter.

tenant|tn

The name of a tenant. If a tenant name is not specified, the default parent tenant is taken. This is an optional parameter.

snapshot|sh

The name of a snapshot associated with the volume specified in the volume argument. Include the LUN ID, for example, `<snapshot_name>:<lun_id>`. This is an optional parameter.

blockmirror|bmr

List of block mirrors (continuous copies). Include the LUN ID, for example, `<block_mirror_name>:<lun_id>`. This is an optional parameter.

consistencygroup|cg

Name of the consistency group. This is an optional parameter, but must be specified if the snapshot is from a consistency group.

varray|va

The virtual array name. This is an optional parameter.

maxpaths|mxp

The maximum number of paths that can be used between a host and a storage volume. This value will override the value set in the virtual pool. This is an optional parameter.

minpaths|mnp

The minimum number of paths that can be used between a host and a storage volume. This value will override the value set in the virtual pool. This is an optional parameter.

pathsperinitiator|ppi

The number of paths per initiator. This value will override the value set in the virtual pool. This is an optional parameter.

synchronous|sync

Perform the operation in synchronous or asynchronous mode. This is an optional parameter.

portgroupname|port group name

Name of the Port group. This is an optional parameter.

serial number|sn

Serial number of the port groups's storage system. This is an optional parameter.

synctimeout|syncto

Sync timeout in seconds. This is an optional parameter.

Common Arguments

This operation also takes the arguments listed in the Common Parameters.

Example 5

```
# viprcli exportgroup add_vol -n Example_ExpGroup_1G_7822726523
        -v Example_ExpGroup_1G_7822726523 -pr Marketing
```

In this example, a single volume and LUN ID pair is specified as one of the parameters.

```
viprcli exportgroup add_vol -name 192.168.0.0 -pr myproj -volume
volk:-1 -sync

Exportgroup : 192.168.0.0
Volume name : volk
HLU : -1
```

In this example ViPR Controller will use the maximum path, minimum path, and paths per initiator set here to override the maximum path, minimum path, and paths per initiator set in the virtual pool when exporting the volume to a host.

```
viprcli exportgroup add_vol -n host3_eg -volume testvolume-1 -pr
project1 -mxp 1 -mnp 1 -ppi 1
```

In this example ViPR Controller will use the maximum path, minimum path, and paths per initiator set here to override the maximum path, minimum path, and paths per initiator set in the virtual pool when exporting a snapshot to the same host.

```
viprcli exportgroup add_vol -n host3_eg -volume testvolume-1 -pr
project1 -mxp 1 -mnp 1 -ppi 1
```

In this example ViPR Controller will use the port group number with a serial number.

```
viprcli exportgroup add_vol -n hostone.lss.emc.com -pr HR -vol
DemoVolApril20 -varray Hn1 -sn 351 -pgname PG-351-distributed
```

Upgrade Virtual Hardware

To upgrade the virtual hardware using vSphere client:

Procedure

1. Power on the vApp.

2. Install or upgrade VMware Tools. VMware Tools must be upgraded before the virtual machine hardware version is updated.

3. Power off the vApp.

4. Navigate to the **Virtual Machines** tab for the vApp. Select all the virtual machines for this vApp .

5. Right click and select **Upgrade Virtual Hardware** and click **Yes**.

Note

For more information for upgrading the virtual machine hardware version, refer https://kb.vmware.com/s/article/1010675

Block storage provisioning support

The ViPR Controller Service Catalog provides access to a set of predefined services, which includes high-level operations that carry out common provisioning activities, such as creating a block storage volume and exporting it to a host or cluster, and "building block" services that perform more granular operations, such as creating a ViPR Controller volume or exporting storage to a host.

General block storage provisioning services
ViPR Controller services are organized in categories. There is a general Block Storage Services category that is used to create block storage volumes and export them to any type of host.

The **Service Catalog** > **Block Storage Services** pages display only unmounted volumes. You cannot select a mounted block volume from these pages and delete it. Instead, use the Block Services for Linux, Block Services for HP-UX, Block Services for VMware vCenter, and so forth, to first unmount the volume. Then you can safely unexport or delete the volume.

Note

The API and CLI commands will not enable you to unexport a mounted volume.

To access these services, go to **Service Catalog** > **View Catalog** > **Block Storage Services**.

Table 1 General block storage provisioning services

Service name	Description
Create Block Volume for a Host	Creates one or more volumes of a specified size on a selected virtual array and virtual pool, and then exports these volume(s) to a host or cluster.
	Note Port group can be selected while creating a block volume for a host. VMAX port group configuration must be enabled to use this feature.
Expand Block Volume	Increases the amount of provisioned storage to the host or cluster. For details refer to Expand Block Volume additional details.

Table 1 General block storage provisioning services (continued)

Service name	Description
Create Block Volume	Creates one or more volumes of a specified size on a selected virtual array and virtual pool. The Create block volume service can also be used to add a volume to a consistency group. When snapshots are enabled on a consistency group, you can only add a volume to the consistency group with the following storage system types: • VMAX • VNX for block (when array consistency is disabled) • XtremIO • VPLEX with VMAX, VNX, or XtremIO backing volumes
Export Volume to Host	Creates the exports from the volume to the host or cluster. **Note** On an XtremIO array, an Initiator can be part of only one Initiator Group (IG). In that case, when ViPR Controller tries to export a Volume to a Host (Host-A), if the Host's initiators (Host-A) are already registered on the array and that initiator group contains other host's initiators, it has to reuse the existing initiator group. As a result, the Volume is exposed to other host's initiators as well.
Unexport Volume	Removes a volume from an export. This volume is still available using another export.
Unexport Multiple Volumes	Removes multiple volumes from all of their exports. The volumes will no longer be accessbile from any exports.
Remove Block Volumes	Removes unexported block volumes or consistency groups. Deletes only volumes that have nothing attached.
Unexport Remove Block Volumes	Removes block volumes or consistency groups and associated exports.
Remove Volume by Host	Removes an unmounted block volume assigned to a host from all of its exports and deletes the volume. The deleted volume is not available from any host.

Note

Expand Volume, Unmount Volume, and Delete Volume catalog services for Windows, and Linux hosts have prechecks that validate that the volume being expanded, unmounted, or deleted matches the volume selected in ViPR-C. Expand volume catalog service fails the expand operation if the user-requested expand size is less than the current volume size.

Block provisioning services for hosts and VMware vCenter

To access these services, go to **Service Catalog** > **View Catalog** > **Block Services for HP-UX**.

Table 2 Block services for HP-UX

Service name	Description
Create and Mount Block Volume	Creates, mounts, and formats a block volume on an HP-UX host. **Note** To select Port group from **Advanced** tab while creating and mounting block volume for a HP-UX host or cluster, ensure to enable **Use Existing Port Group** in VMAX port group configuration.
Unmount Volume on HP-UX	Unmounts a block volume from an HP-UX host, leaving the storage intact.
Unmount and Delete Volume	Unmounts and deletes a block volume from an HP-UX host.
Mount Existing Volume on HP-UX	Mounts and formats a previously created block volume on an HP-UX host.
Expand Volume on HP-UX	Expands an HP-UX host by expanding a mounted volume.

To access these services, go to **Service Catalog** > **View Catalog** > **Block Services for Linux**.

Table 3 Block services for Linux

Service name	Description
Create and Mount Block Volume	Creates, mounts, and formats a block volume on a Linux host. **Note** To select Port group from **Advanced** tab while creating and mounting block volume for a Linux host or cluster, ensure to enable **Use Existing Port Group** in VMAX port group configuration.
Unmount and Delete Volume	Unmounts and deletes block volume from a Linux host.
Mount Existing Volume on Linux	Mounts and formats a previously created block volume on a Linux host.
Unmount Volume on Linux	Unmounts a block volume from a Linux host, leaving the storage intact.
Expand Linux Mount	Expands a Linux host by expanding a mounted volume.

To access these services, go to **Service Catalog** > **View Catalog** > **Block Services for Windows**.

Table 4 Block services for Windows

Service name	Description
Create and Mount Volume	Creates, mounts, and formats a block volume on a Windows host. **Note** To select Port group from **Advanced** tab while creating and mounting block volume for a Windows host or cluster, ensure to enable **Use Existing Port Group** in VMAX port group configuration.
Unmount and Delete Volume	Unmounts and deletes block volume from a Windows host.
Mount Volume on Windows	Mounts and formats a previously created and exported block volume on a Windows host.
Unmount Volume on Windows	Unmounts a block volume from a Windows host, leaving the storage intact.
Expand Volume on Windows	Expands a block volume mounted on a Windows host.

To access these services, go to **Catalog** > **View Catalog** > **Block Services for VMware vCenter**.

Table 5 Block provisioning services for VMware vCenter

Service name	Description
Create Volume for VMware	Creates one or more volumes of a specified size for a selected virtual array and virtual pool and exports these volumes to an ESX/ESXi host or cluster. **Note** To select Port group from **Advanced** tab while creating volume for a VMWare host or cluster, ensure to enable **Use Existing Port Group** in VMAX port group configuration.
Create Volume and Datastore	Creates one or more volumes of a specified size for a selected virtual array and virtual pool, creates a VMware datastore on each new volume, and then assigns them to an ESX/ESXi host or cluster. **Note** To select Port group from **Advanced** tab while creating volume and datastore for a VMWare host or cluster, ensure to enable **Use Existing Port Group** in VMAX port group configuration.
Remove Volume for VMware	Removes a volume from VMware.
Create VMware Datastore	Creates a VMWare datastore from an existing volume.

Table 5 Block provisioning services for VMware vCenter (continued)

Service name	Description
Delete VMware Datastore	Removes a VMware datastore leaving the storage intact.
Export Volume for VMware	Exports a volume to a vCenter host or cluster, and then rescans the HBAs on the vCenter host or cluster. **Note** To select Port group from **Advanced** tab while exporting volume for a VMWare host or cluster, ensure to enable **Use Existing Port Group** in VMAX port group configuration.
Unexport Volume for VMware	Unexports a volume from a vCenter host or cluster, and then rescans the HBAs on the vCenter host or cluster.
Extend Datastore with New Volume	Creates a new volume to increase the amount of storage allocated to the datastore.
Extend Datastore with Existing Volume	Uses an existing volume to increase the amount of storage allocated to the datastore.
Expand Volume and Datastore	Expands the size of a VMware datastore and its underlying volume.
Create Block Snapshot	Creates a snapshot of a volume on an ESX/ESXi host or cluster.

Block storage services for hosts and vCenters unsupported for OpenStack Third-party storage systems

The OpenStack Cinder API does not provide the storage volume worldwide name (WWN) that is required to perform some of the operations for Block Storage services for hosts and vCenters. Due to this issue, you cannot use the following services for third-party block storage systems:

- **Block Services for HP-UX** > **Create and Mount Block Volume**

- **Block Services for HP-UX** > **Mount Existing Volume on HP-UX**

- **Block Services for Linux** > **Create and Mount Volume**

- **Block Services for Linux** > **Mount Volume on Linux**

- **Block Services for Windows** > **Create and Mount Volume**

- **Block Services for Windows** > **Mount Volume on Windows**

- **Block Services for VMware vCenter** > **Create Volume and VMware Datastore**

- **Block Services for VMware vCenter** > **Create VMware Datastore**

VPLEX data migration

Move a volume from one virtual pool to another to perform a VPLEX data migration. Use this service to change volumes from VPLEX local to VPLEX distributed. You may

also use this service to change the virtual pool for VPLEX source, target, or journal volumes that are protected by RecoverPoint.

Before you begin

If a VPLEX Migration order has both RecoverPoint Source and Targets and there is an error which rolls back the RecoverPoint Source migrations but the RecoverPoint Target migrations succeed, and then order can be placed again without any consequences, as the second order only migrates the previously failed RecoverPoint Source volumes.

Procedure

1. Brwoe to **Service Catalog** > **Migration Services** > **VPLEX Data Migration**

2. Select the **Project** in which the volume is located.

3. Select the **Virtual Pool** containing the volume being moved.

4. To perform by moving the volume to another virtual pool, select the **Operation**. If you want to move multiple volumes, use Mobility group migration.

Option	Description
VPLEX Data Migration	By changing the volume on the backend storage system, you can perform functions such as: change the backend volume from thin to thick, change the storage system. You can configure the speed of the data migration using **Physical Assets** > **Controller Config** > VPLEX and then adding a configuration for Data Migration Speed. See Setting the type of transfer speed for VPLEX data migration. You can also use the REST API and the CLI to retrieve a list of data migrations, show the details of a data migration, pause, resume, and cancel a migration. For more details about using the ViPR Controller REST API, see the ViPR Controller REST API Reference, available as a zip file from the ViPR Controller Product Documentation Index and the ViPR Controller CLI Reference Guide which can be found on the ViPR Controller Product Documentation Index. RecoverPoint protected VPLEX volumes or MetroPoint (VPLEX Metro only) volumes are eligible for VPLEX Data Migration too. For these volumes, the original virtual pool is compared to the target virtual pool and migrations are based on changes in • Source virtual pool • Source journal virtual pool • Target virtual pools • Target journal virtual pools If there are changes in the new virtual pool when compared to other virtual pools, Targets, and Journals can be implicitly migrated. (The other virtual pools must be eligible for migration.) The same rules apply to all virtual pools when determining whether a migration is triggered. RecoverPoint protected VPLEX volumes or MetroPoint (VPLEX Metro only) volumes that are in consistency groups with array consistency enabled OR are in Applications grouped for migration. RecoverPoint or MetroPoint (VPLEX Metro only)

Option	Description
	Target volumes that are in Applications will be grouped together for migration.
Change from VPLEX Local to VPLEX Distributed	The volume is moved from a local to distributed VPLEX .

5. Select the **Target Virtual Pool**.

6. Select the **Volume**.

7. Check the **Suspend** box if you want to suspend migration before committing and deleting the original source, target, or journal volumes. It enables you to manually verify data integrity.

8. Set the **Display Journal** field to `Yes` if you want to migrate only RecoverPoint - protected journal volumes.

9. You can schedule the time for perform the migration by selecting **Enable Schedule** and entering the start date and time.

   Note

   This option is not available for "Create Block Snapshot" and other operations and it requires correct privileges, for using the **Enable Schedule** option.

10. To run the service, select **Order**.

NFS export rules and permissions

File systems, file system subdirectories, and file system snapshots can be exported as NFS exports and access to an exported file system depends on the security type and the permissions assigned.

The security types that are supported and the rules that can be created on each supported array are detailed.

Isilon

Supports sys, krb5, krb5p, krb5i security types, but enables only one rule to be set. If you have set a rule for sys, for example, you cannot set a further rule for another security type.

VNX

Supports sys, krb5, krb5p, krb5i security types and enables one rule per security type.

NetApp

Supports sys, krb5, krb5p, krb5i security types and enables one rule per security type.

VNXe

Supports sys security type, with one rule.

Data Domain

Supports sys and krb5 security type, with one rule per security type.

You can set these permissions on an export:

Table 6 Permissions to set on an export

Array	File System Export	Snapshot Export
Isilon	rw, ro, root	Not supported
VNX	rw, ro, root	ro
NetApp 7-mode	rw, ro, root	ro
NetApp Cluster-mode	rw, ro, root	Not supported
VNXe	rw, root (See Note)	ro
Data Domain	rw, ro, root	Not supported

Note

For VNXe, a file system or subdirectory export must have root permission to mount it on a host and write data to it. If an export has readwrite permissions, you can mount it but cannot write data to it.

Note

To enable the unrestricted export of an Isilon NFS file system to all hosts/networks in a customer environment follow the steps:

- Create an export rule while creating or altering an existing NFS file system.

- Populate the endpoint field with the value 00.00.00.00 or 0 since, ViPR does not enable creation of an export rule with a blank value in the endpoint field.

- Do not type 0.0.0.0 as value in the endpoint field as it is rejected as invalid.

vNAS Discovery and project assignment

You can group file systems to different projects by associating a vNAS (virtual NAS) to one or more projects. Users of the projects can then use the vNAS for storage provisioning. This enables environments without multi-tenancy enabled at the organization level to group file systems to different projects.

EMC Isilon access zones
ViPR Controller can discover access zones and ingest them as a vNAS, and ingest their smart connect zones as storage ports. You can assign these vNAS to a single project, or to multiple projects. Users of that project can then provision file systems using these assigned vNAS.

Prior to running discover on Isilon storage, verify the following:

- Authentication providers are configured.
- Valid smart connect zones are associated with access zones.

VNX for File virtual data movers
A virtual data mover is an EMC VNX feature that groups CIFS and/or NFS servers into virtual containers. Each virtual container stores the necessary data to support one or more CIFS and/or NFS servers and their file systems. Each virtual data mover only has access to the file systems mounted to it, which provides logical isolation between

multiple virtual data movers. A virtual data has a root file system that stores the CIFS or NFS identity information, such as local groups, shares, security credentials and audit logs.

ViPR Controller discovers the virtual data movers and ingests them as vNAS server objects. You can assign these vNAS servers to a project. Users of that project can then provision file systems using these assigned vNAS servers.

Configuration requirements to discover, and provision vNAS servers
You can assign these vNAS servers to a single project, or to multiple projects. Users of that project can then provision file systems using these assigned vNAS servers.

Before associating a vNAS server to a project, verify the following:

- The vNAS server and project are in the same domain.

- The vNAS server is not tagged or associated with another project.

- The vNAS server does not have file systems that belong to a different project.

- The **Enable Associate of Virtual NAS to Multiple Projects** option must be enabled to allow users to share a vNAS across multiple projects. In the ViPR Controller UI, this feature is enabled in the **Physical** > **Controller Config** > **NAS** tab.

If a vNAS server is in an invalid state, such as the unloaded state, or was deleted from its storage system, ViPR Controller is unable to detect this until the next array discovery. ViPR Controller still selects these vNAS servers for provisioning, resulting in an error. You can run a provisioning operation again after the vNAS server have been rediscovered.

Steps to assign a vNAS server to one or more projects
Steps to configure ViPR Controller to share a vNAS with multiple projects are:

1. Discover the storage system.

2. Set the Controller Configuration to allow a vNAS to be shared with multiple projects.

3. Map a vNAS to multiple projects.

Note

While adding a project to multiple vNas servers and creating one files system you cannot see it created in all the vNas servers, since it creates it on the first server the project that it is associated. To over come this follow the given steps:

- Create a vArray per vNAS server to allow vNAS/domain selection to be done by choosing a vArray.

1. In ViPR-C, create a new vArray and a network that only contains the IP for vNAS1

2. Ensure that vNAS1 is associated with a project.

3. Repeat steps 1-2 for vNAS2 ensuring vNAS2 is associated with the same Project.

Alternatively, if projects are not used for business unit separation, adhere to a policy of associating only one vNAS to one Project in ViPR Controller.

New Feature