flashgrid

Oracle RAC on Microsoft Azure

Deployment Process Demonstration

rev. 2021-02-15

Microsoft Azure Certified

About FlashGrid for Oracle RAC on Azure

Ensuring high availability of backend relational databases is a critical part of the cloud strategy - whether it is a lift-and-shift migration or a green-field deployment of mission critical applications. FlashGrid is an engineered cloud system designed for database high availability. FlashGrid is delivered as a fully integrated Infrastructure-as-Code template that can be customized and deployed to Azure account with a few mouse clicks. Key components of FlashGrid for Oracle RAC on Azure include:

- Azure Virtual Machines
- Azure Managed Premium SSD block storage
- FlashGrid Storage Fabric software
- FlashGrid Cloud Area Network software
- Oracle Grid Infrastructure software
- Oracle RAC database engine

By leveraging the proven Oracle RAC database engine FlashGrid enables the following use-cases:

- Lift-and-shift migration of existing Oracle RAC databases to Azure.
- Migration of existing Oracle databases from high-end on-premises servers to Azure without reducing availability SLAs.
- Design of new mission critical applications for the cloud based on the industry proven and widely supported database engine.

About This Demo

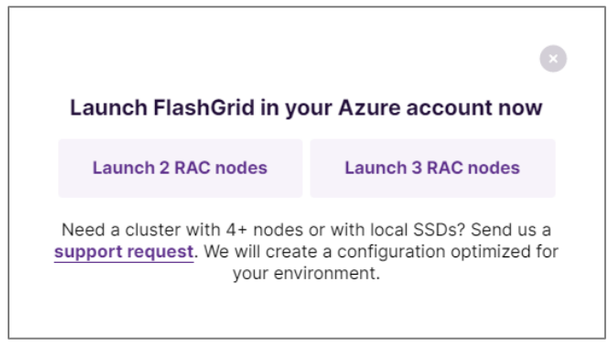
This brief demo the main steps of deploying FlashGrid for Oracle RAC on Azure. The target audience is Azure cloud architects and engineers and database architects and administrators.

More detailed information is available in the following documents:

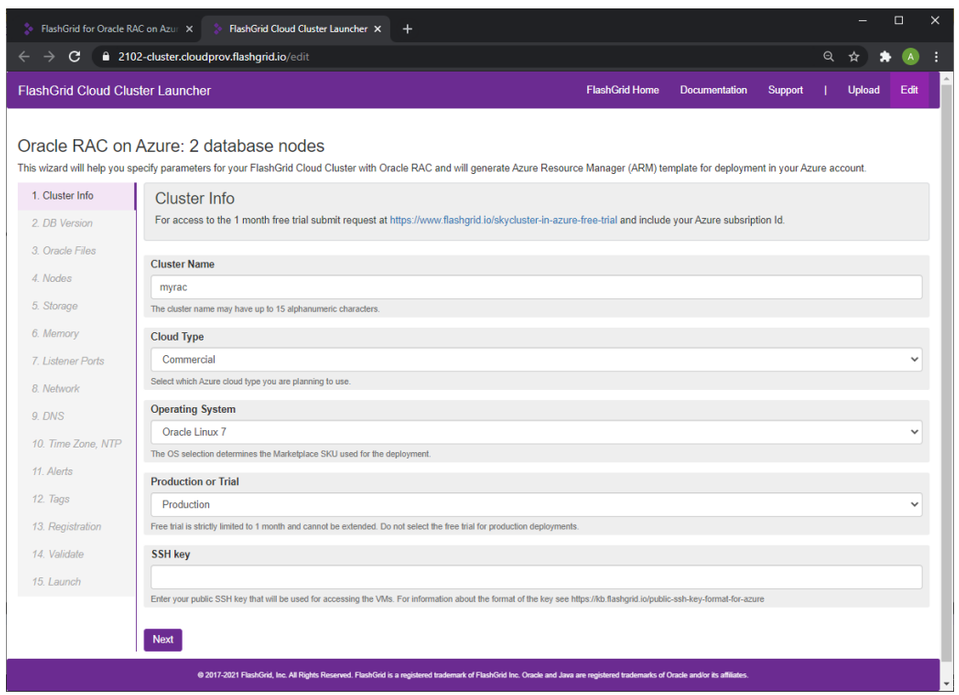
- White paper: *Oracle RAC on Microsoft Azure enabled by FlashGrid engineered cloud system.*
- Deployment Guide

Step 0: Select one of standard configuration templates

Since majority of deployments have 2 or 3 RAC nodes, these two standard configuration are readily available when you click *Launch* at https://www.flashgrid.io/products/flashgrid-for-oracle-rac-on-azure/

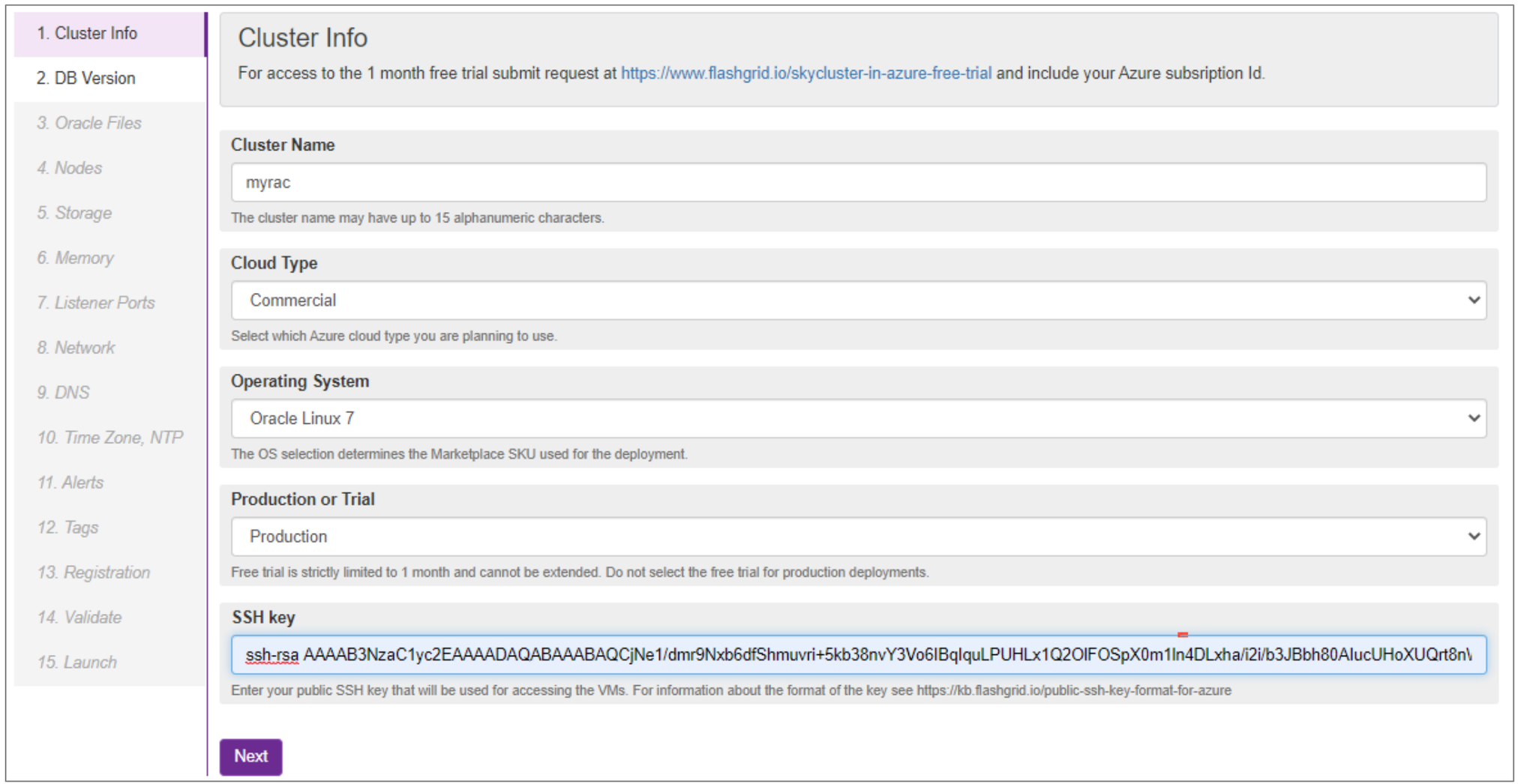


Click on a button that corresponds to either 2, or 3 RAC nodes. It will open FlashGrid Launcher tool. (For configurations other than 2 or 3 RAC nodes contact FlashGrid support.)



Step 1: Enter basic information about the cluster

At this step you need to enter information such as Azure Cloud type, operating system, and the SSH key that you will use for accessing the VMs.

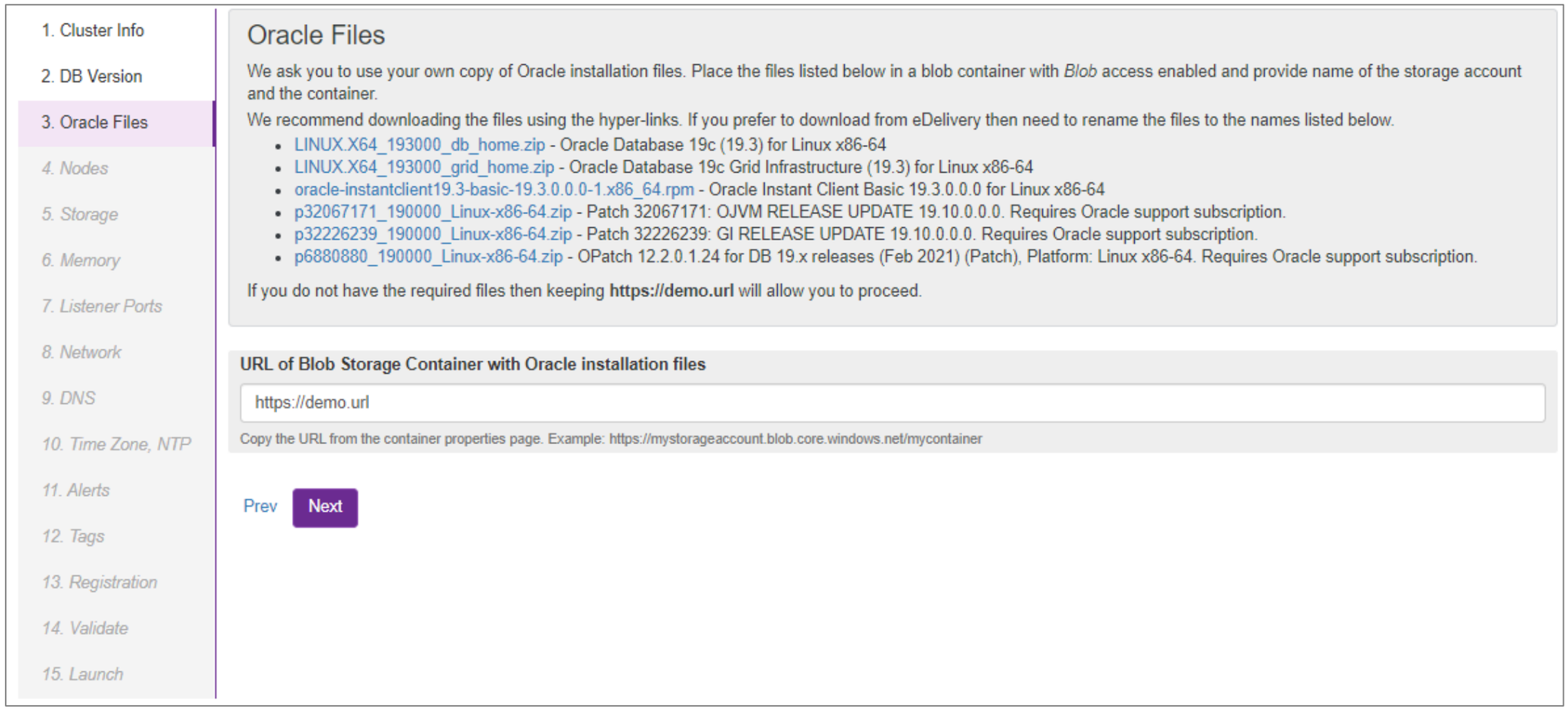


Step 2: Select database version

Select which version of the database you are planning to use, along with Patch Set Update / Release Update version for it.

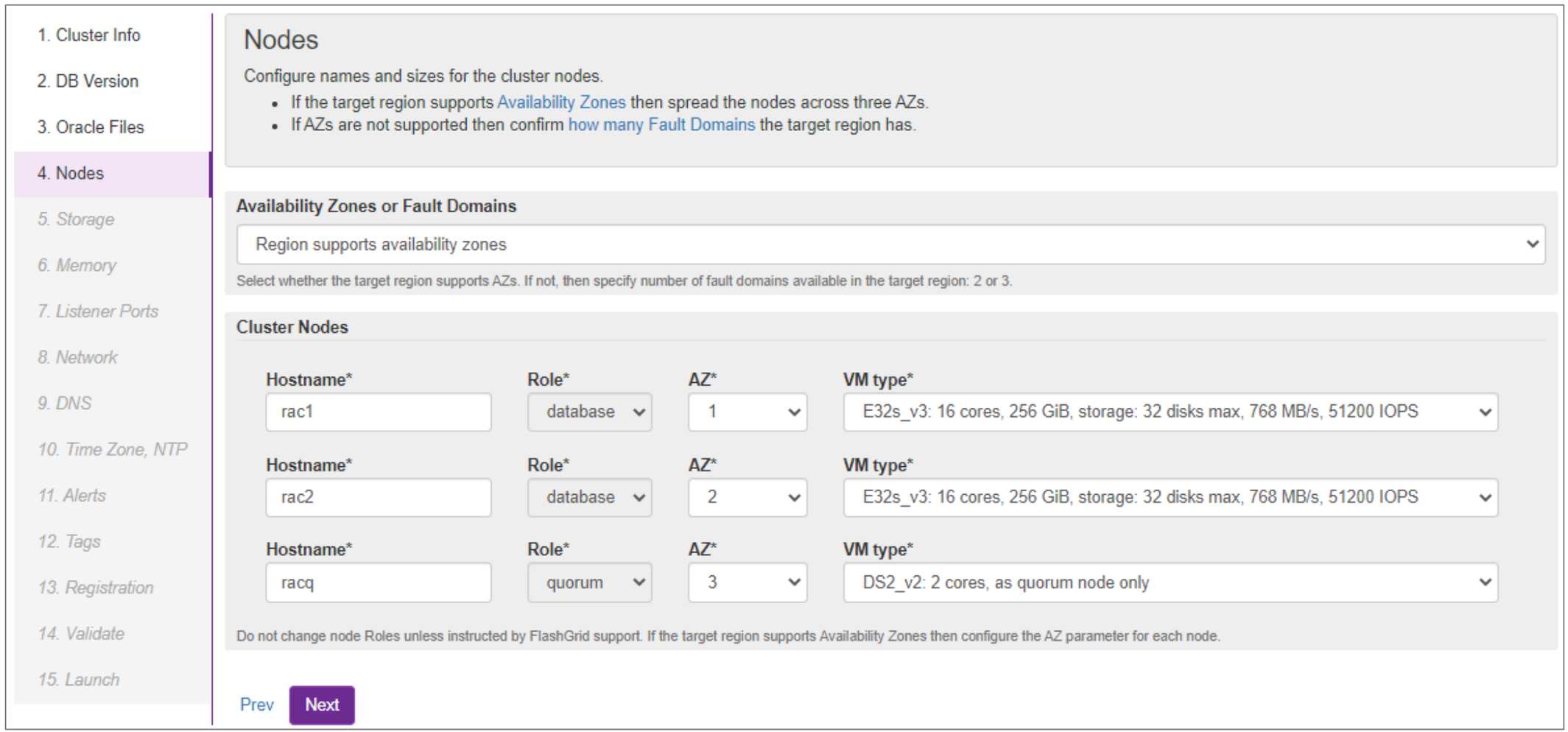
Step 3: Provide location of Oracle installation files

You need to upload the listed Oracle installation files to a Blob Storage Container and provide URL of the container. Cluster initialization script will download and install the files.



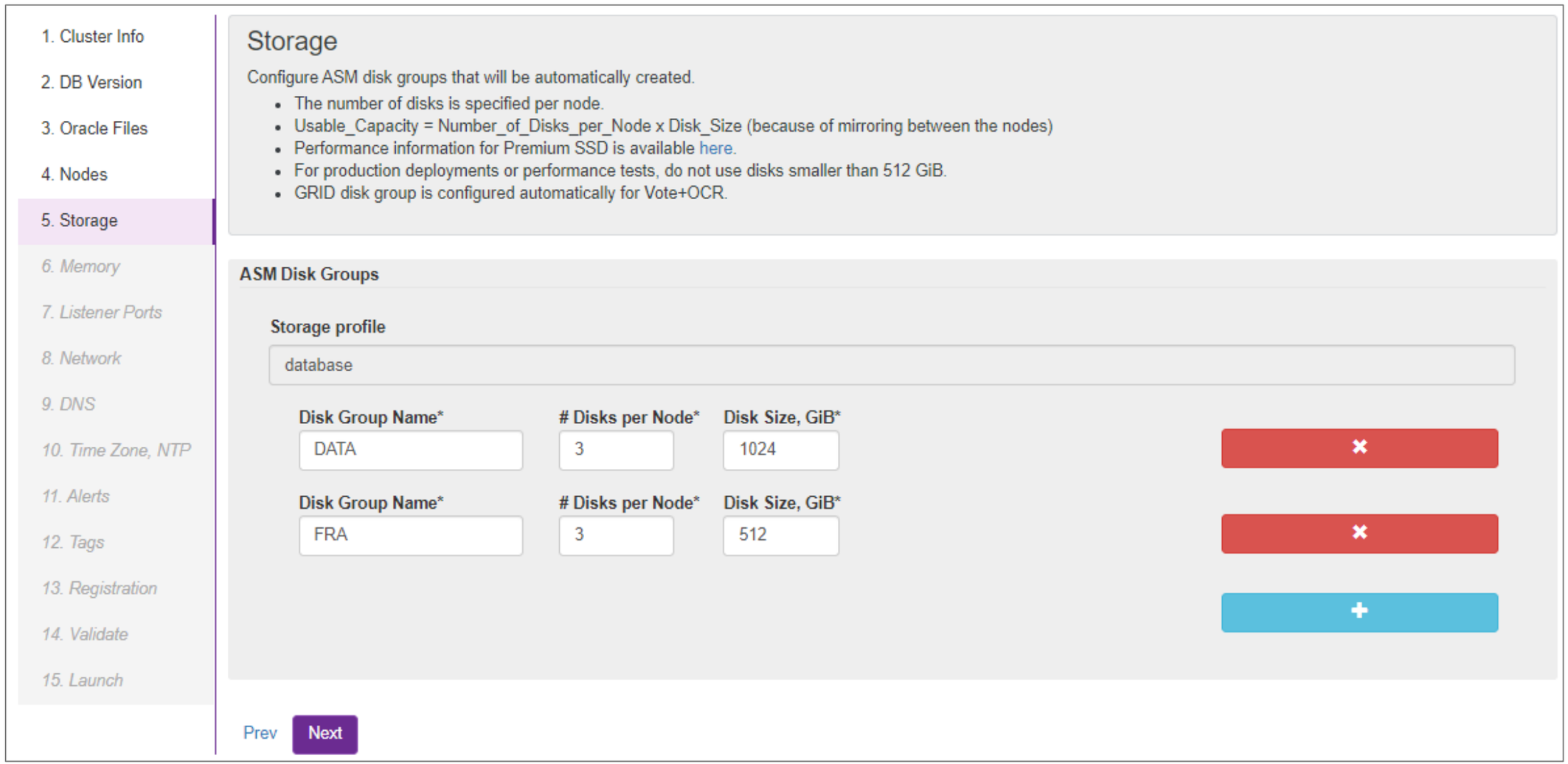
Step 4: Configure cluster nodes

Provide hostnames, Availability Zone placement (for regions where AZs are supported), and sizes of the cluster nodes.



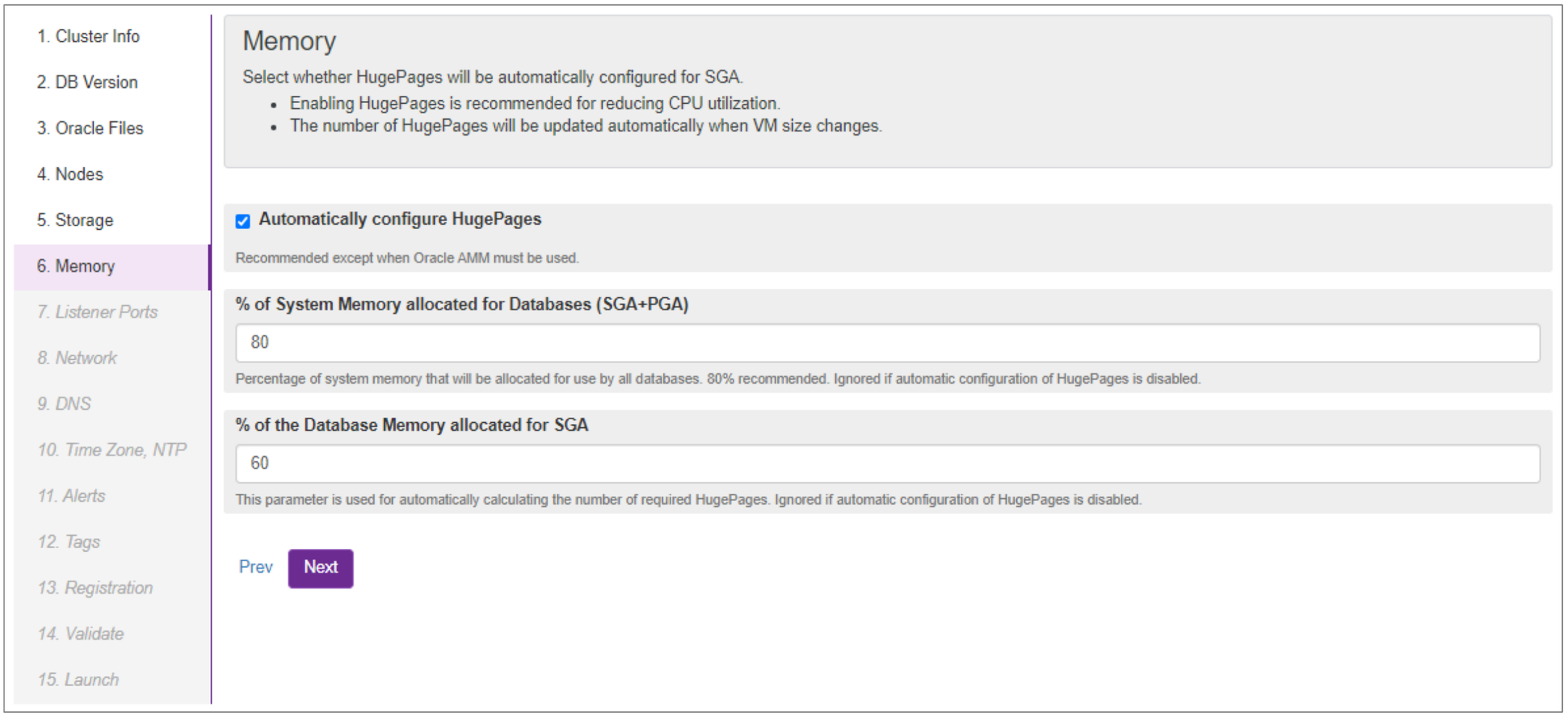
Step 5: Configure storage

Specify ASM disk groups that will be created. The corresponding disks will be automatically attached to the nodes.



Step 6: Specify memory allocation

If needed, customize database memory allocation percentages. These percentages area used for automatic configuration of HugePages when database node boots up based on the total memory.

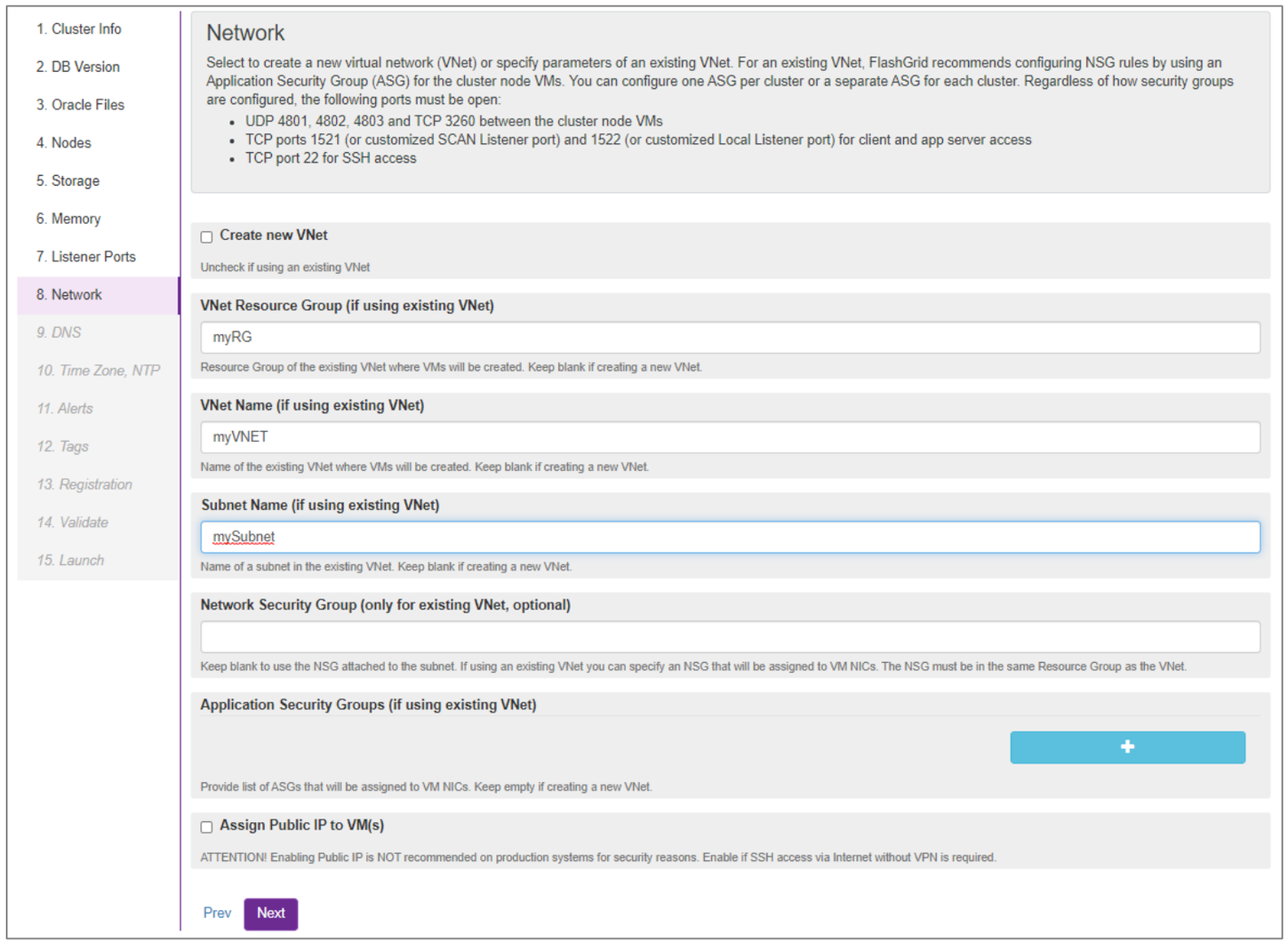


Step 7: Specify listener ports

If needed, customize SCAN and Local listener port numbers.

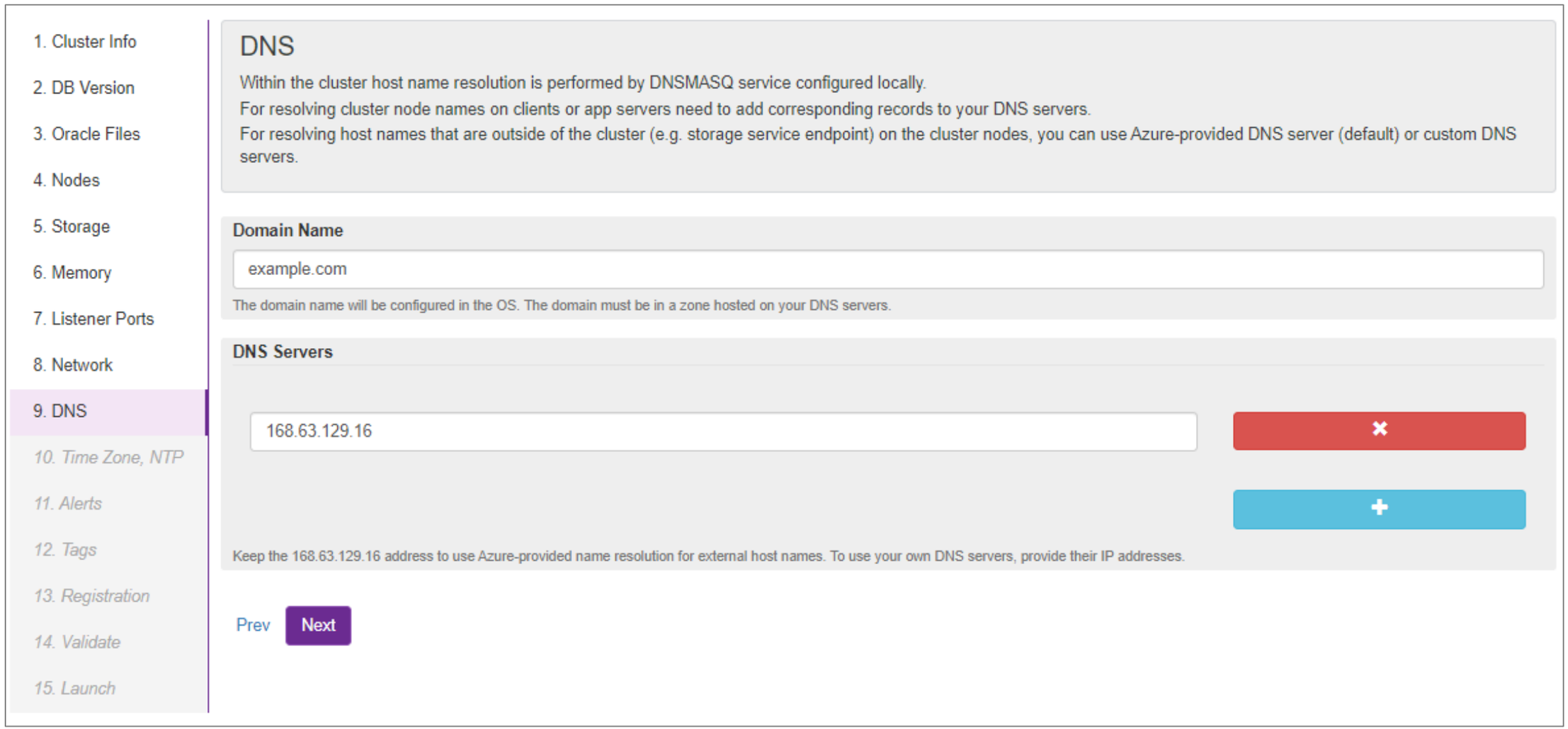
Step 8: Provide information about target VNet

In most cases the cluster must be deployed in an existing VNet. Provide information about the VNet and other network resources. Alternatively, you can choose to create a new VNet.



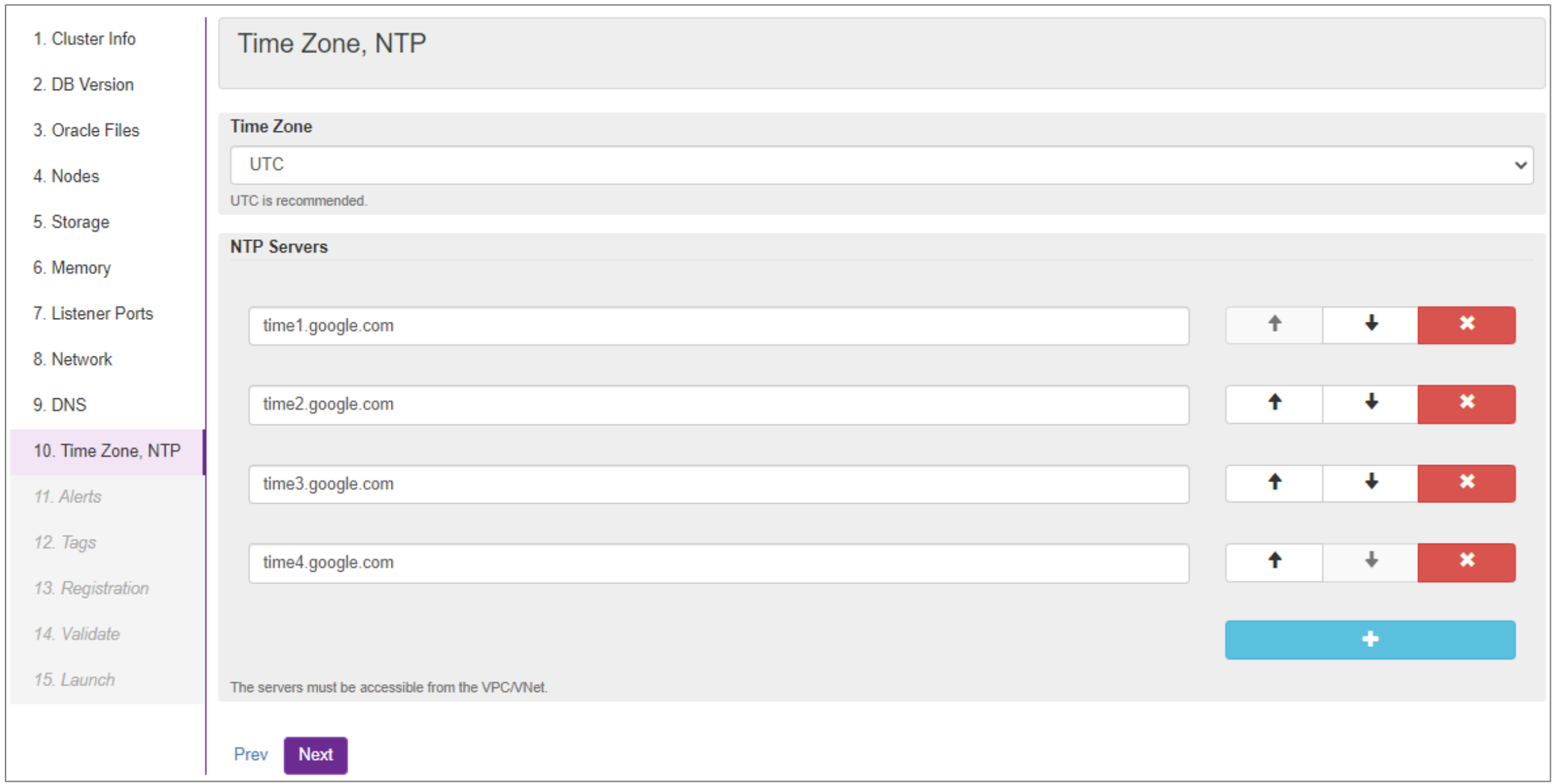
Step 9: Configure DNS

Specify domain name that will be assigned to cluster nodes. You can also replace the default Azure DNS server with your own list of DNS servers.



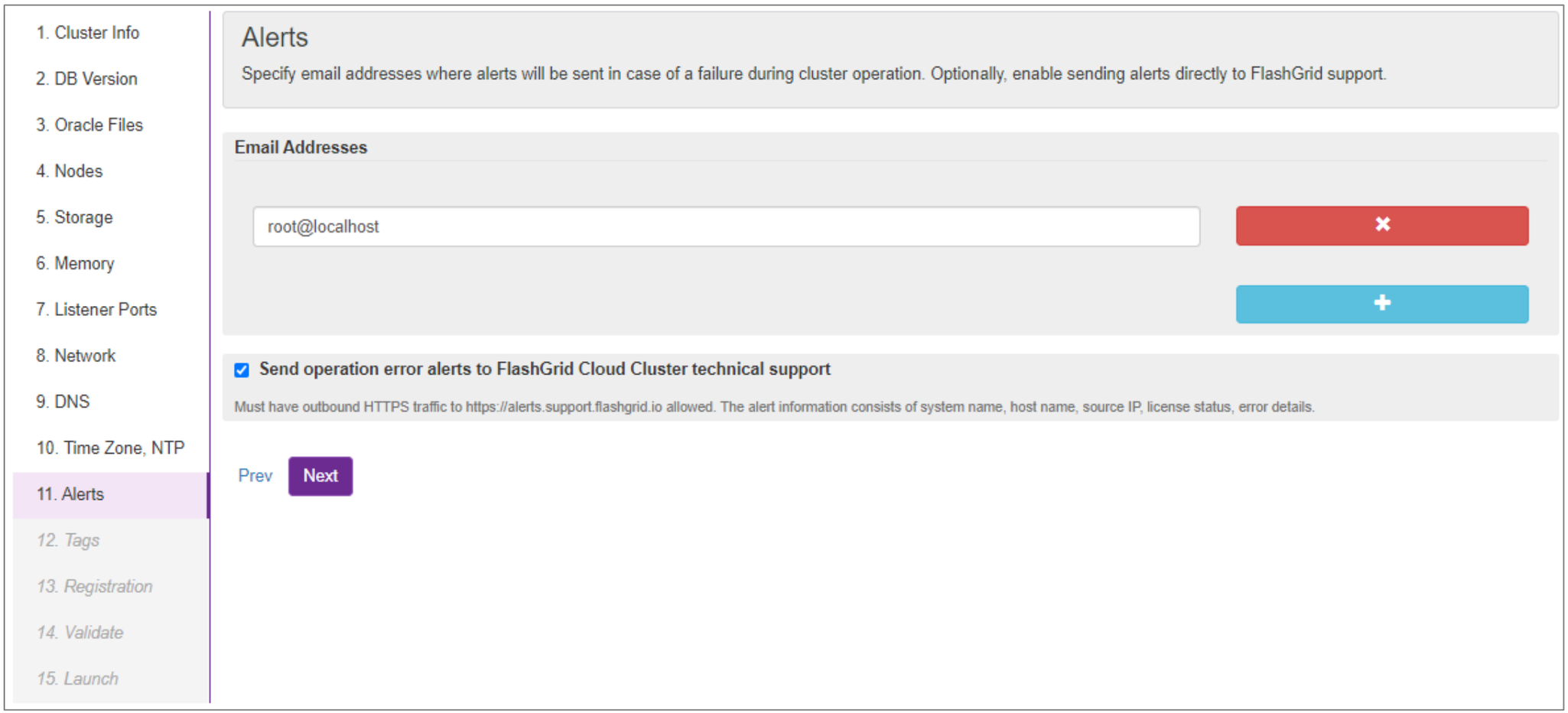
Step 10: Select time zone and time servers

You can provide your own list of time servers or keep the default list of Google time servers.



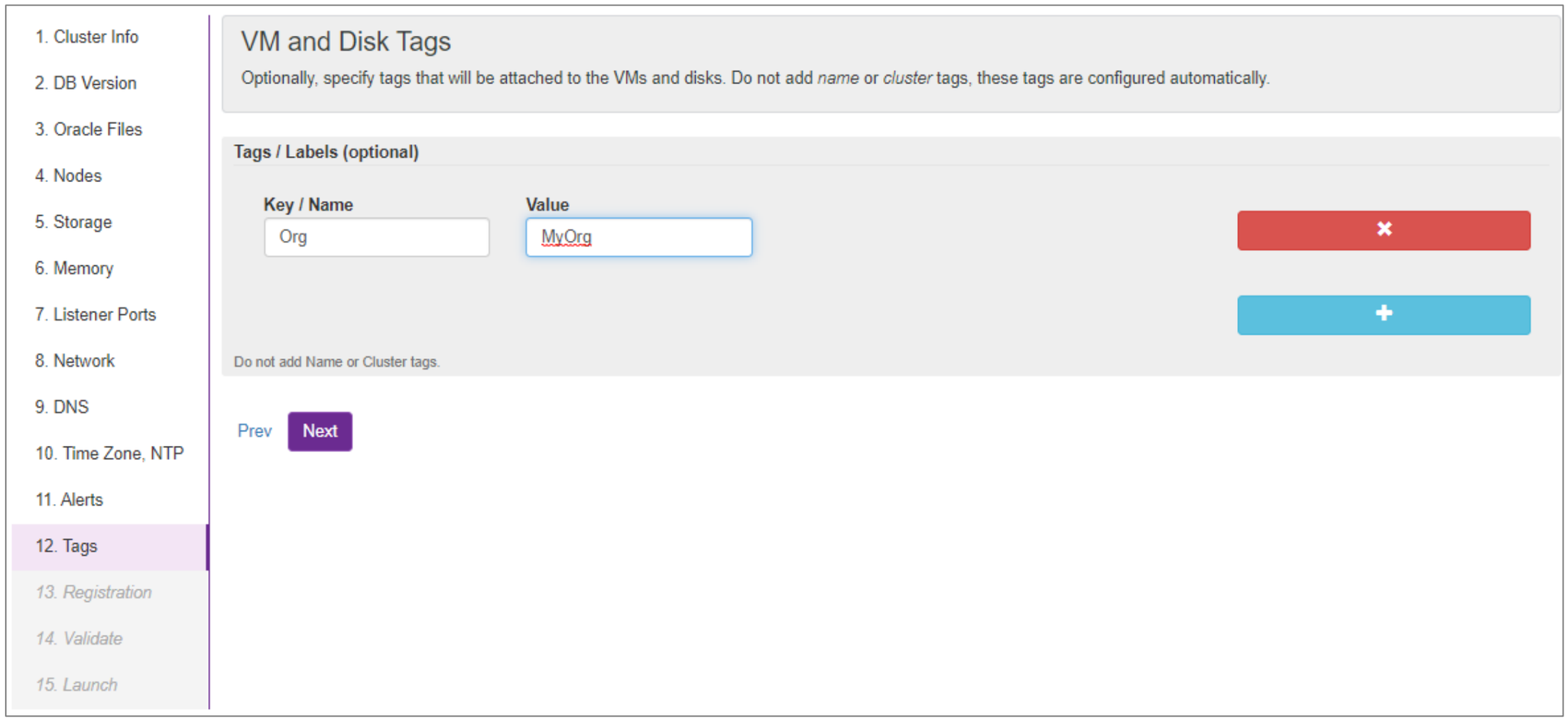
Step 11: Configure email alerts

Specify list of emails where alerts will be sent for errors that may happen during operation of the cluster.

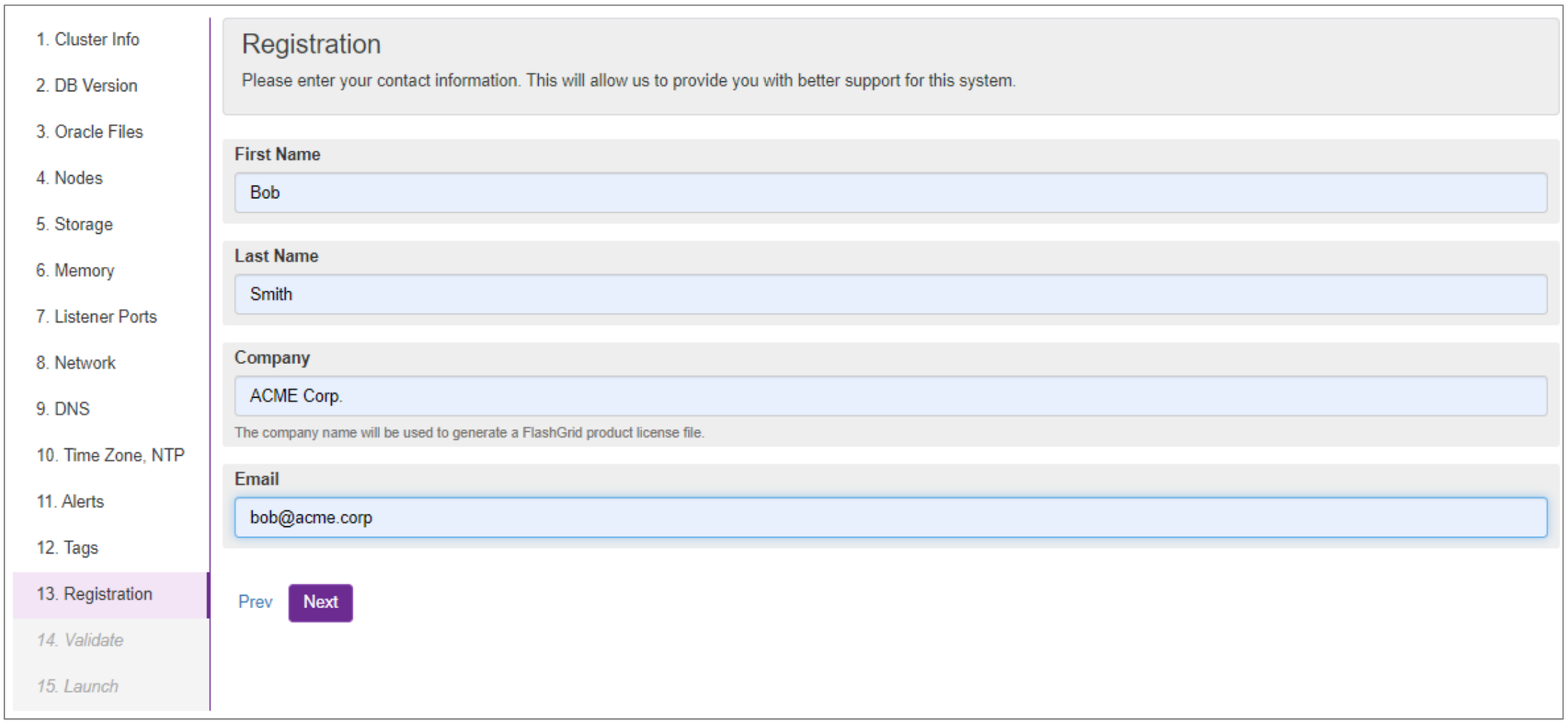


Step 12: Specify tags

Optionally, specify the list of tags that will be assigned to VMs and disks.

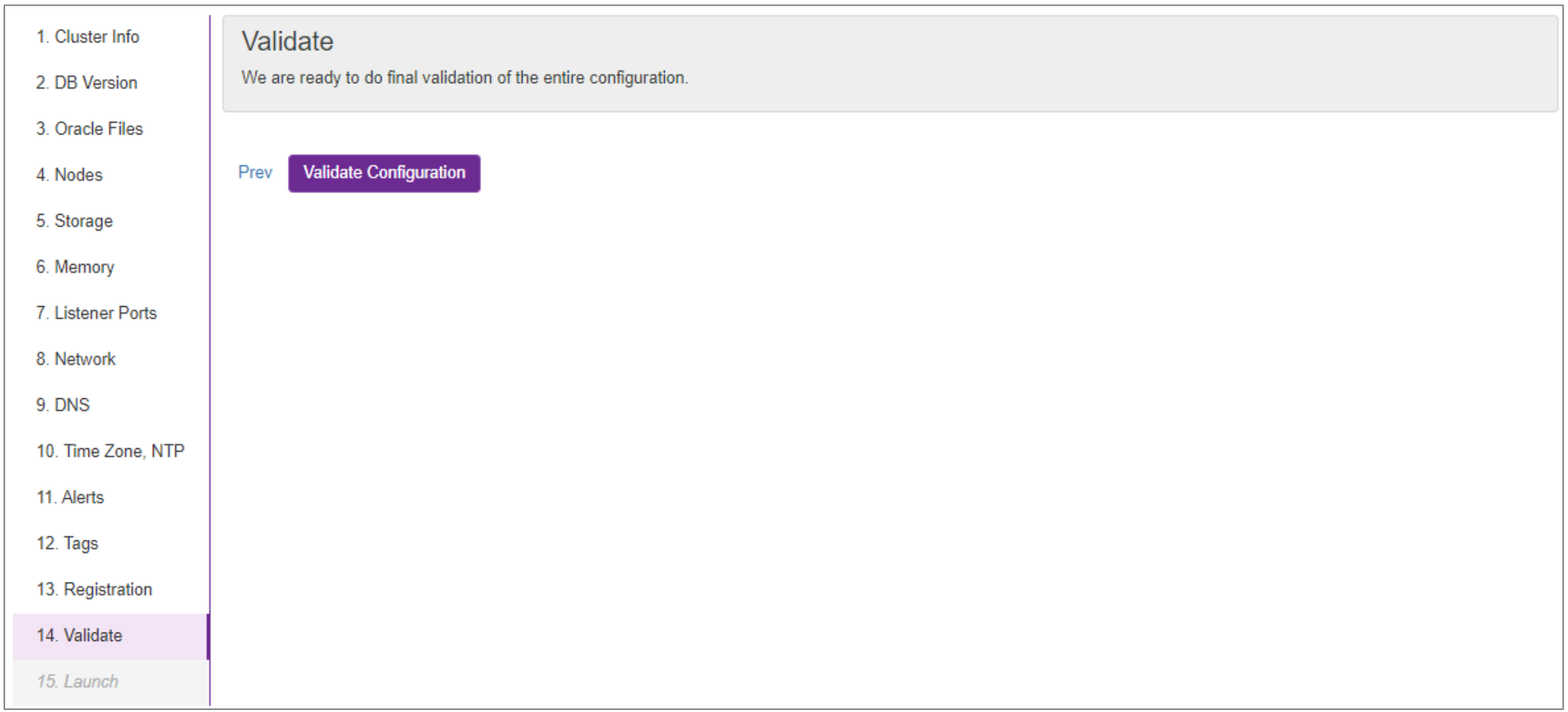


Step 13: Provide registration information



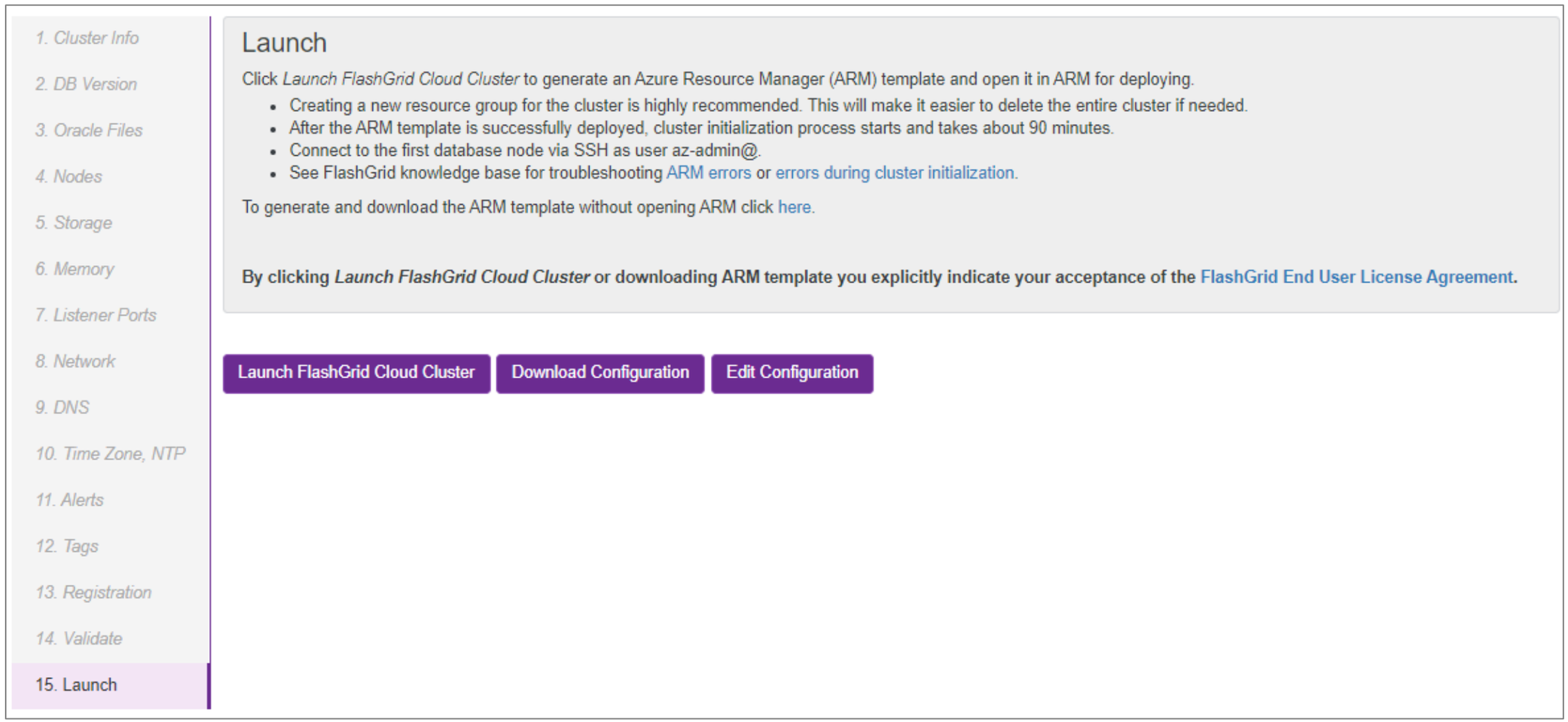
Step 14: Validate configuration

Click *Validate* to confirm that the provided configuration is consistent.



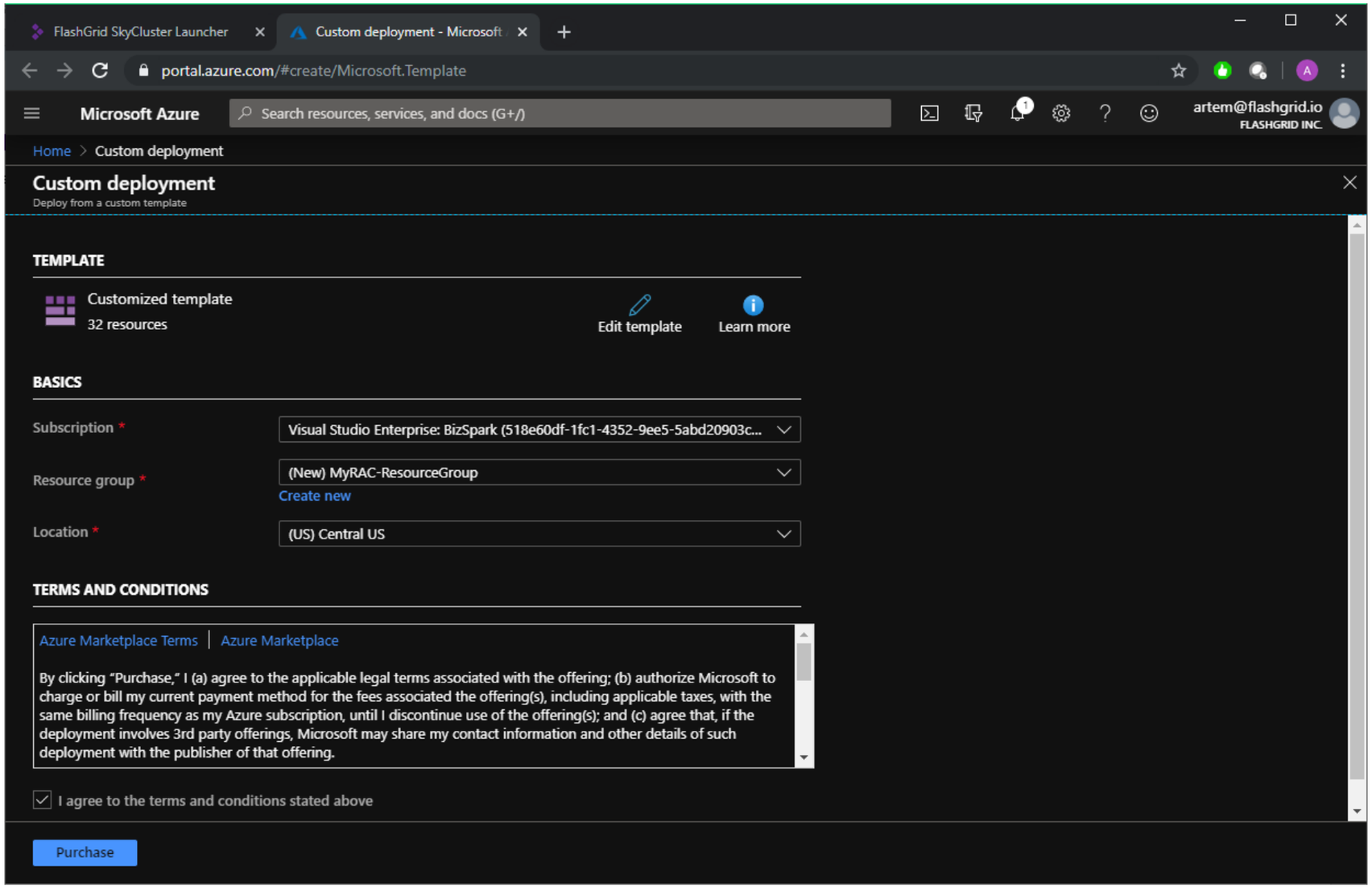
Step 15: Generate Azure Resource Manager (ARM) template

When you click *Launch FlashGrid Cloud Cluster*, ARM template will be generated and Azure Portal will open.



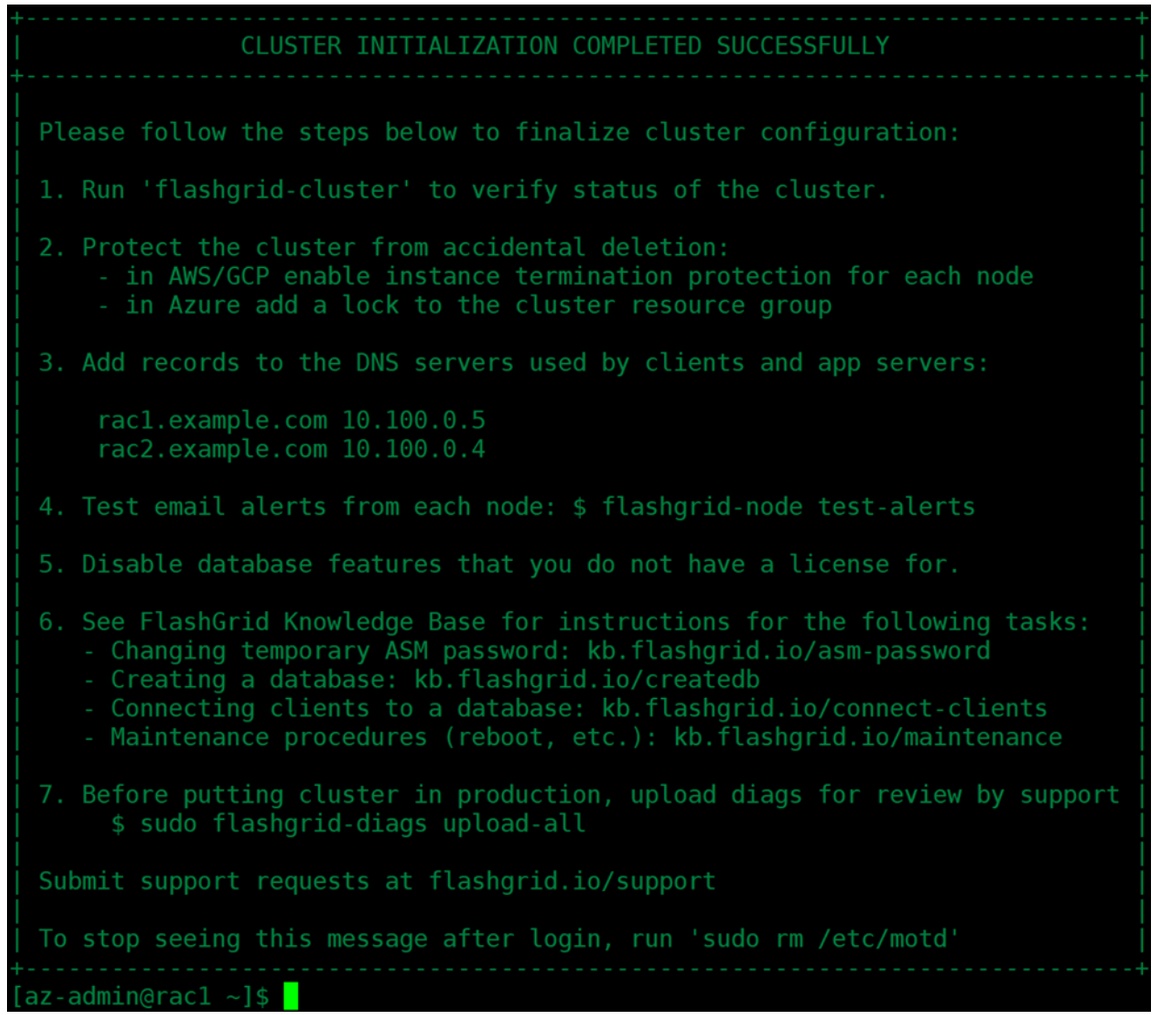
Step 16: Deploy the ARM template

On Azure Portal select target subscription, create new resource group for the cluster, select the target region, and click Purchase.



Step 17: SSH in to the first node

After the deployment of the ARM template is complete, use SSH to connect to the first node of the cluster as user *az-admin*. If the cluster init already finished (takes 60-90 minutes) then you will see the following message.



Step 18: Check status of the cluster

```
# sudo flashgrid-cluster
```

```
[az-admin@rac1 ~]$ sudo flashgrid-cluster
FlashGrid 19.6.13.59452 #9534f704070a91bd32b23bdad1e38df20109dfd6
License: via Marketplace Subscription
Support plan: 24x7
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
FlashGrid running: OK
Clocks check: OK
Configuration check: OK
Network check: OK

Querying nodes: rac1, rac2, racq ...

Cluster Name: myrac
Cluster status: Good
-------------------------------------------------------------
Node  Status  ASM_Node  Storage_Node  Quorum_Node  Failgroup
-------------------------------------------------------------
rac1  Good    Yes       Yes           No           RAC1
rac2  Good    Yes       Yes           No           RAC2
racq  Good    No        No            Yes          RACQ
-------------------------------------------------------------
-----------------------------------------------------------------------------------------------------------
GroupName  Status  Mounted   Type    TotalMiB  FreeMiB  OfflineDisks  LostDisks  Resync  ReadLocal  Vote
-----------------------------------------------------------------------------------------------------------
DATA       Good    AllNodes  NORMAL  3145728   3145336  0             0          No      Enabled    None
FRA        Good    AllNodes  NORMAL  3145728   3145336  0             0          No      Enabled    None
GRID       Good    AllNodes  NORMAL  10240     9456     0             0          No      Enabled    3/3
-----------------------------------------------------------------------------------------------------------
```

The cluster is ready. You can now create your database using DBCA.

Additional Information

For more information see https://www.flashgrid.io/products/flashgrid-for-oracle-rac-on-azure/ or email info@flashgrid.io