



Setup

NetApp Solutions

NetApp
April 22, 2021

Table of Contents

- Setup Overview 1
- Iguazio Installation 1
- Configuring Kubernetes Cluster 1
- Define Persistent Volume Claim 3

Setup Overview

Iguazio Installation

Iguazio can be installed on-premises or on a cloud provider. Provisioning can be done as a service and managed by Iguazio or by the customer. In both cases, Iguazio provides a deployment application (Provazio) to deploy and manage clusters.

For on-premises installation, please refer to [NVA-1121](#) for compute, network, and storage setup. On-premises deployment of Iguazio is provided by Iguazio without additional cost to the customer. See [this page](#) for DNS and SMTP server configurations. The Provazio installation page is shown as follows.

The screenshot shows a web interface for a 'New System (dev)' installation. At the top, there is a dark blue header with a close button (X) and the title 'New System (dev)'. Below the header is a progress bar with four steps: 'Installation Scenario' (selected), 'General', 'Clusters', and 'Cloud'. The main content area lists five installation scenarios, each with a radio button and a description:

- Bare metal / virtual machines
Installs the system on bare-metal or virtual-machine instances, pre-provisioned with prerequ...
- AWS
Creates applicable compute/networking resources in AWS and installs the system on the in...
- Azure
Creates applicable compute/networking resources in Azure and installs the system on the i...
- AWS (pre-provisioned)
Installs the system on Amazon Web Services instances, manually provisioned beforehand
- Azure (pre-provisioned)
Installs the system on Microsoft Azure instances, manually provisioned beforehand

At the bottom, there is a checkbox for 'Advanced' with the label 'Show advanced options in the next steps'. Below the list are two buttons: 'BACK' and 'NEXT'.

[Next: Configuring Kubernetes Cluster](#)

Configuring Kubernetes Cluster

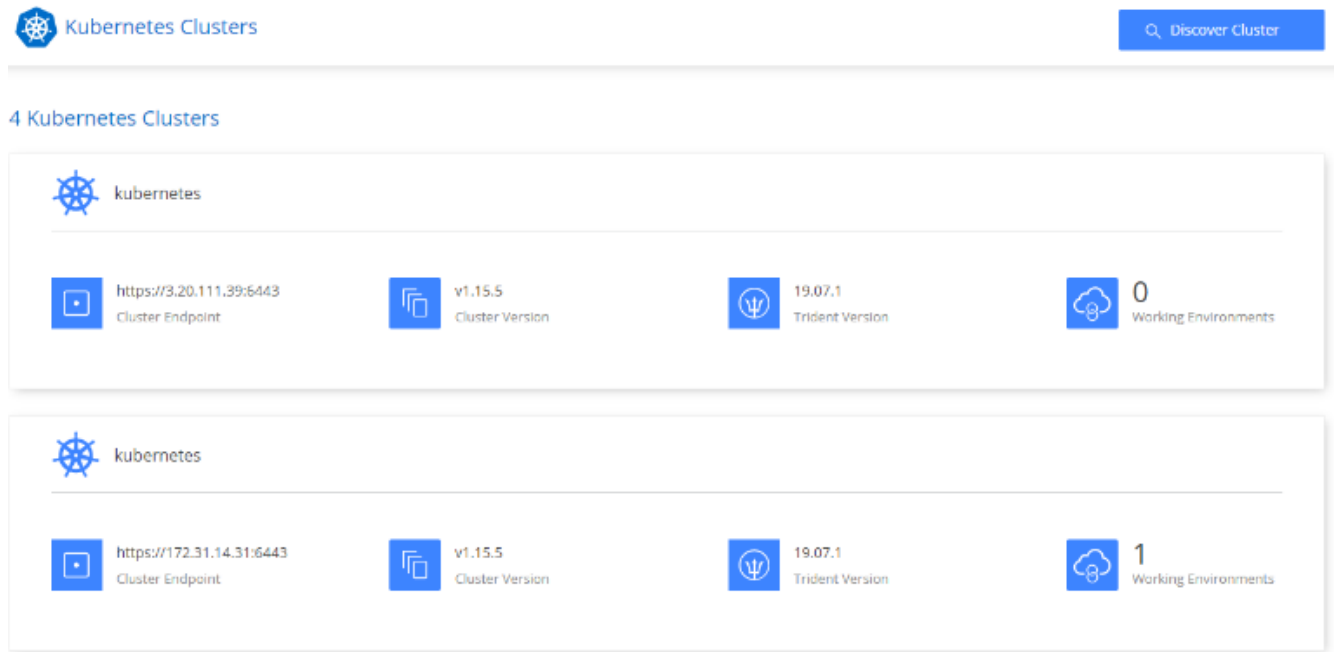
This section is divided into two parts for cloud and on-premises deployment respectively.

Cloud Deployment Kubernetes Configuration

Through NetApp Cloud Manager, you can define the connection to the Iguazio Kubernetes cluster. Trident requires access to multiple resources in the cluster to make the volume available.

1. To enable access, obtain the Kubernetes config file from one of the Iguazio nodes. The file is located under `/home/Iguazio/.kube/config`. Download this file to your desktop.

2. Go to Discover Cluster to configure.



3. Upload the Kubernetes config file. See the following image.

[Error: Missing Graphic Image]

4. Deploy Trident and associate a volume with the cluster. See the following image on defining and assigning a Persistent Volume to the Iguazio cluster. This process creates a Persistent Volume (PV) in Iguazio's Kubernetes cluster. Before you can use it, you must define a Persistent Volume Claim (PVC).

Persistent Volumes for Kubernetes

Connected with Kubernetes Cluster

Cloud Volumes ONTAP is connected to 1 Kubernetes cluster. [View Cluster](#) ⓘ

You can connect another Kubernetes cluster to this Cloud Volumes ONTAP system. If the Kubernetes cluster is in a different network than Cloud Volumes ONTAP, specify a custom export policy to provide access to clients.

Kubernetes Cluster

Select Kubernetes Cluster

kubernetes

Custom Export Policy *(Optional)* ⓘ

Custom Export Policy

172.31.0.0/16

Set as default storage class

NFS iSCSI

Connect

Cancel

On-Premises Deployment Kubernetes Configuration

For on-premises installation of NetApp Trident, see [TR-4798](#) for details. After configuring your Kubernetes cluster and installing NetApp Trident, you can connect Trident to the Iguazio cluster to enable NetApp data management capabilities, such as taking Snapshot copies of your data and model.

[Next: Define Persistent Volume Claim](#)

Define Persistent Volume Claim

1. Save the following YAML to a file to create a PVC of type Basic.

```
kind: PersistentVolumeClaim
apiVersion: v1
metadata:
  name: basic
spec:
  accessModes:
    - ReadWriteOnce
  resources:
    requests:
      storage: 100Gi
  storageClassName: netapp-file
```

2. Apply the YAML file to your Iguazio Kubernetes cluster.

```
Kubectl -n default-tenant apply -f <your yaml file>
```

Attach NetApp Volume to the Jupyter Notebook

Iguazio offers several managed services to provide data scientists with a full end-to-end stack for development and deployment of AI/ML applications. You can read more about these components at the [Iguazio Overview of Application Services and Tools](#).

One of the managed services is Jupyter Notebook. Each developer gets its own deployment of a notebook container with the resources they need for development. To give them access to the NetApp Cloud Volume, you can assign the volume to their container and resource allocation, running user, and environment variable settings for Persistent Volume Claims is presented in the following image.

For an on-premises configuration, you can refer to [TR-4798](#) on the Trident setup to enable NetApp ONTAP data management capabilities, such as taking Snapshot copies of your data or model for versioning control. Add the following line in your Trident back- end config file to make Snapshot directories visible:

```
{
  ...
  "defaults": {
    "snapshotDir": "true"
  }
}
```

You must create a Trident back- end config file in JSON format, and then run the following [Trident command](#) to reference it:

```
tridentctl create backend -f <backend-file>
```

Enabled

Inactivity window: 5m, 10m, 1h, 2h, 4h

Resources

For more information about the resource parameters, see [Kubernetes documentation](#).

The memory and CPU configurations are applied to each replica.

Memory: Request [] GB, Limit [] GB

CPU: Request [Example: 1500] millicpu, Limit [Example: 1500] millicpu

Running User *

admin [Username]

Flavor: Full stack without GPU

Spark: spark [Create new...]

Environment Variables

+ Create a new environment variable

Persistent Volume Claims (PVCs)

Name	Mount Path
basic	/netapp

+ Add PVC

Next: [Deploying the Application](#)

Copyright Information

Copyright © 2021 NetApp, Inc. All rights reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means-graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system-without prior written permission of the copyright owner.

Software derived from copyrighted NetApp material is subject to the following license and disclaimer:

THIS SOFTWARE IS PROVIDED BY NETAPP "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL NETAPP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

NetApp reserves the right to change any products described herein at any time, and without notice. NetApp assumes no responsibility or liability arising from the use of products described herein, except as expressly agreed to in writing by NetApp. The use or purchase of this product does not convey a license under any patent rights, trademark rights, or any other intellectual property rights of NetApp.

The product described in this manual may be protected by one or more U.S. patents, foreign patents, or pending applications.

RESTRICTED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.277-7103 (October 1988) and FAR 52-227-19 (June 1987).

Trademark Information

NETAPP, the NETAPP logo, and the marks listed at <http://www.netapp.com/TM> are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.