

Solution Automation

NetApp Solutions

NetApp May 20, 2022

This PDF was generated from https://docs.netapp.com/us-en/netapp-solutions/automation/automation_introduction.html on May 20, 2022. Always check docs.netapp.com for the latest.

Table of Contents

Solution Automation	1
NetApp Solution Automation	1
Setup the Ansible control node (For CLI based deployments)	1
NetApp Solution Automation	1
Cloud Volumes Automation via Terraform	

Solution Automation

NetApp Solution Automation

Introduction

In providing solutions to meet today's business challenges, NetApp delivers solutions with the following goals:

- Providing validated deployment and configuration steps.
- Providing solutions that are easily consumable,
- Providing solution deployment that has a predictable outcome, is easily repeated, and scalable across a customer's enterprise.

In order to achieve these goals, it is paramount that the deployment and configuration of infrastructure and/or applications delivered through our solutions is simplified through automation. NetApp is committed to simplifying solution consumption through automation.

Utilizing open-source automation tools such as Red Hat Ansible, HashiCorp Terraform, or Microsoft Powershell, NetApp solutions have the ability to automate application deployment, cloud provisioning, configuration management, and many other common IT tasks. NetApp's solutions take advantage of publicly available automation artifacts - as well as providing NetApp authored automation - to simplify the overall deployment of a solution.

Where automation capabilities are available, the solution collateral will guide the user through the process for automating the solution or solution steps via the specific automation tool(s).

Setup the Ansible control node (For CLI based deployments)

NetApp Solution Automation

AWS Authentication Requirements for CVO and Connector Using NetApp Cloud Manager

To configure automated Deployments of CVO and Connectors using Ansible playbooks via AWX/Ansible Tower, the following information is needed:

Acquiring Access/Secret Keys from AWS

- 1. To deploy CVO and Connector in Cloud Manager, we need AWS Access/Secret Key. Acquire the keys in AWS console by launching IAM-→Users-→your username-→security credentials-→Create Access key.
- 2. Copy access keys and keep them secured to use in Connector and CVO deployment.



If you lose your key, you can create another access key and delete the one you lost



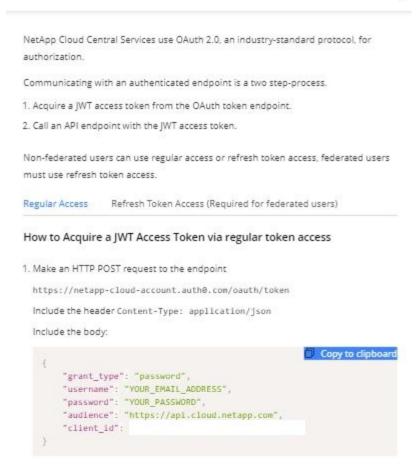
Acquiring Refresh Token from NetApp Cloud Central

- Login into your cloud central account using your account credentials at https://services.cloud.netapp.com/ refresh-token
- 2. Generate a refresh Token and save it for deployments.



Acquiring Client ID

- 1. Access the API page to copy Client ID at https://services.cloud.netapp.com/developer-hub.
- 2. Click on "learn How to Authenticate", in the top right corner.
- 3. From the Authentication window that pops up, copy the Client ID from Regular Access if you require a username/password to login. Federated users with SSO should copy the client ID from the "Refresh Token Tab".



Acquiring Key Pair from AWS

1. In AWS console, search for "Key Pair" and create a key pair with "pem". Remember the name of you key_pair, we will use it to deploy the connector.



Acquiring Account ID

1. In Cloud Manager, click on Account -> Manage Accounts and then copy the account id for use in variables for AWX.



Cloud Volumes Automation via Terraform

This solution documents the automated deployments of Cloud Volumes on AWS (CVO Single Node, CVO HA and FSX ONTAP) and Azure (CVO Single Node, CVO HA and ANF) using Terraform modules. The code can be found at https://github.com/NetApp-Automation/na_cloud_volumes_automation

Pre-requisites

- 1. Terraform >= 0.13
- 2. Cloud Manager Account
- 3. Cloud Provider Account AWS, Azure
- 4. Host machine (any OS supported by Terraform)

Provider documentation

The documentation of Terraform provider for Cloud Manager is available at: https://registry.terraform.io/providers/NetApp/netapp-cloudmanager/latest/docs

Controlling the provider version

Note that you can also control the provider version. This is controlled by a required_providers block in your Terraform configuration.

The syntax is as follows:

```
terraform {
  required_providers {
    netapp-cloudmanager = {
      source = "NetApp/netapp-cloudmanager"
      version = "20.10.0"
    }
  }
}
```

Read more on provider version control.

Running Specific Modules

AWS

Unresolved directive in automation/cloud_volumes_terraform.adoc - include::automation/cloud_volumes_aws.adoc[]

Azure

Unresolved directive in automation/cloud_volumes_terraform.adoc - include::automation/cloud_volumes_azure.adoc[]

GCP

Unresolved directive in automation/cloud_volumes_terraform.adoc - include::automation/cloud_volumes_gcp.adoc[]

Copyright Information

Copyright © 2022 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.