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Deploying Veeam Backup on Oracle Compute Cloud@Customer

Step-by-step, best practices, and recommendations to deploy Veeam Backup on Compute Cloud@Customer

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Purpose statement

This document provides the step-by-step to deploy Veeam Backup Solution on Oracle Compute Cloud@Customer.

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Introduction

As organizations increasingly adopt cloud technologies to enhance their IT infrastructure, the need for robust data protection and disaster recovery solutions becomes paramount. Veeam Backup & Replication has established itself as a leading solution for ensuring data availability, offering comprehensive capabilities for backing up, restoring, and replicating critical data across various environments.

Deploying Veeam Backup on Oracle Compute Cloud@Customer enables organizations to safeguard their data with enterprise-grade backup and recovery features, ensuring business continuity and minimizing downtime.

This solution paper outlines the deployment of the Veeam Backup Solution on Oracle Compute Cloud@Customer and provides a comprehensive guide to deploying Veeam Backup in this unique environment, detailing the architecture, configuration steps, best practices, and considerations to maximize the solution's effectiveness.

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Prerequisites

Before deploying the Veeam Backup Solution on Oracle Compute Cloud@Customer, several key prerequisites must be met to ensure a successful implementation. These prerequisites cover the hardware, software, network, and security requirements necessary to support the deployment.

1. Oracle Compute Cloud@Customer Environment

- **Provisioned Oracle Compute Cloud@Customer Service:** Ensure that Oracle Compute Cloud@Customer is fully provisioned and operational within your on-premises data center.

- **Access to OCI Services:** Verify that you have access to Oracle Cloud Infrastructure (OCI) services as required for integration with Oracle Compute Cloud@Customer.

2. Veeam Backup & Replication Licensing

- **Valid Veeam License:** Ensure that you have a valid license for Veeam Backup & Replication, appropriate for your environment's size and complexity.

- **Version Compatibility:** Verify that the version of Veeam Backup & Replication you plan to deploy is compatible with Oracle Compute Cloud@Customer. Veeam 12.1 or greater is recommended, since this release has been tested, validated and qualified with Oracle Compute Cloud@Customer,

3. Compute and Storage Resources

- **Compute Instances:** Ensure that sufficient compute instances are available in Oracle Compute Cloud@Customer to host Veeam components, including the Veeam Backup Server, Proxy Servers, and Repositories.

- **Storage Resources:** Confirm that adequate storage capacity is available for backup repositories, including considerations for data retention and growth.

4. Network Configuration

- **Network Connectivity:** Ensure proper network connectivity between the Veeam components, Oracle Compute Cloud@Customer instances, and any other relevant systems.

- **Firewall and Security Group Settings:** Configure firewall rules and security groups to allow necessary communication between Veeam components, Oracle Compute Cloud@Customer, and external services as needed.

- **FastConnect:** If backing up data to OCI object storage, ensure a secure connection via Oracle FastConnect is established.

5. Operating System and Software Requirements

- **Supported Operating Systems:** Ensure that the operating systems on the compute instances hosting Veeam components are supported by both Veeam and Oracle Compute Cloud@Customer. For this example, we are working with Windows Server 2022 release on Veeam servers.

6. User Access and Permissions

- **Administrator Access:** Ensure that administrators have the necessary privileges to install and configure Veeam Backup & Replication and manage Oracle Compute Cloud@Customer resources.

7. Backup and Recovery Planning

- **Backup Strategy:** Develop a comprehensive backup strategy that includes retention policies, scheduling, and disaster recovery objectives.

- **Resource Allocation:** Plan resource allocation based on the expected backup workloads and the impact on network bandwidth, storage, and compute resources

By fulfilling these criteria, you will be ready to follow the instructions outlined in this paper guaranteeing a seamless and effective deployment of Veeam Backup and Replication solution on Oracle Compute Cloud@Customer.

Architecture Overview

Deploying Veeam Backup Solution on Oracle Compute Cloud@Customer involves integrating Veeam's powerful data protection capabilities with the flexible and secure infrastructure provided by Oracle Compute Cloud@Customer at your data center. This session outlines the key components of the architecture, ensuring a comprehensive understanding of how the solution operates within your environment.

1. Oracle Compute Cloud@Customer

Oracle Compute Cloud@Customer is the foundational platform utilized to deploy infrastructure as a Services (IaaS), compute, network, and storage within your on-premises data center.

- **Compute Instances:** These are virtual machines hosted on Oracle Compute Cloud@Customer that run your production workload and applications. Veeam components, including the Veeam Backup Server, Proxy Servers, and Backup Repositories can be deployed on Oracle Compute Cloud@Customer compute instances.

- **Storage Services:** Oracle Compute Cloud@Customer provides scalable storage options, such as Block Storage, File Systems, and Object Storage.

  NOTE: At the current release of Oracle Compute Cloud@Customer, only Block Storage or Network File Systems from can be utilized as backup repositories for Veeam Backup software. Object Storage from Oracle Compute Cloud@Customer is not supported as backup repository for Veeam backup.

2. Veeam Backup & Replication Components

Veeam Backup & Replication is the core software responsible for managing backup, recovery, and replication tasks. The following key components are deployed within the Oracle Compute Cloud@Customer environment:

- **Veeam Backup Server:** The central management component that orchestrates backup and recovery tasks, manages job scheduling, and monitors the overall backup environment.

- **Backup Proxies:** These are optional components that handle the heavy lifting of data processing during backup and replication tasks, improving performance by offloading processing from the backup server.

- **Backup Repositories:** The storage locations where backup data is stored. These can be configured on Oracle Compute Cloud@Customer Block Storage or NFS shares, or several options currently supported, certified and integrated with Veeam.

- **Veeam Console:** The user interface through which administrators configure and manage backup jobs, monitor system performance, and perform recovery tasks.

3. Network Infrastructure

The network infrastructure is a critical component of the architecture, enabling communication between Veeam components, Oracle Compute Cloud@Customer resources, and external systems.

- **Internal Network:** Connects Veeam components (Backup Server, Proxies, Repositories) within the Oracle Compute Cloud@Customer environment, ensuring secure and efficient data flow.

- **External Connectivity:** Provides connectivity to external environments, NAS devices, VTL, remote sites, other cloud services, or on-premises infrastructure, via VPN or Oracle FastConnect. This enables the replication of backup data to remote locations for disaster recovery purposes.

4. Storage and Backup Targets

Storage is a central element of the backup architecture, with various options available depending on your needs.

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- **Primary Backup Repositories:** Typically configured using Oracle Block Storage, NFS shares within the Oracle Compute Cloud@Customer environment, external storage systems, such as Oracle ZFS Storage Appliance or VTL appliances supported by Veeam. These repositories store the initial copies of backup data.

- **Secondary Backup Targets:** To enhance redundancy and data protection, secondary targets can be configured using Oracle Object Storage in OCI, external storage systems, such as Oracle ZFS Storage Appliance, or Virtual Tape Libraries (VTL). These secondary copies can be used for long-term retention or offsite disaster recovery.

5. Data Flow and Processes

The Veeam Backup Solution on Oracle Compute Cloud@Customer manages data flow as follows:

1. **Backup Process:** Data from protected workloads (e.g., VMs, databases, files) is read by the Veeam Backup Server and processed by Backup Proxies. The processed data is then written to the configured Backup Repositories.

2. **Replication Process:** Veeam can replicate data from the primary site to a secondary site or cloud target, ensuring that critical data is available for rapid recovery in case of a disaster.

3. **Restore Process:** In the event of data loss or corruption, the Veeam Backup Server orchestrates the recovery of data from the Backup Repositories, restoring it to the original location or an alternate location as needed.

6. Security Considerations

Security is integrated into the architecture to protect both data at rest and in transit:

- **Encryption:** Veeam provides options for encrypting backup data, ensuring that sensitive information is protected, both on-premises and during transit to offsite locations.

- **Access Controls:** Role-based access controls (RBAC) within Veeam and Oracle Compute Cloud@Customer help ensure that only authorized personnel can manage and access backup data.

7. Scalability and Performance

The architecture is designed to scale according to your needs:

- **Horizontal Scaling:** Additional Backup Proxies and Repositories can be added to handle increased workloads or data volumes.

- **Performance Optimization:** Veeam's advanced features, such as parallel processing and built-in WAN acceleration, ensure that backup and recovery tasks are performed efficiently, minimizing impact on production systems. Refer to Veeam WAN Accelerator

Architectural Options for Deploying Veeam Backup and Replication Solution on Oracle Compute Cloud@Customer

This section presents five different architectural approaches for deploying Veeam Backup and Replication solution on Oracle Compute Cloud@Customer. Each architecture is tailored to a specific type of backup repository.

1. Deploying Veeam using Oracle Compute Cloud@Customer local Network File System (NFS shares) as backup repository.

2. Deploying Veeam using Oracle Linux instance on Compute Cloud@Customer with direct attached block storage as backup repository.

3. Deploying Veeam on Oracle Compute Cloud@Customer using Oracle Cloud Infrastructure Object Storage as backup repository.

4. Deploying Veeam on Oracle Compute Cloud@Customer using Oracle ZFS Storage Appliance as external backup repository.

5. Deploying Veeam on Oracle Compute Cloud@Customer using Virtual Tape Library (VTL) as backup repository or long-term archive.

The architecture diagram presented below shows Veeam Backup and Replication solution deployed on Compute Cloud@Customer utilizing different backup repositories, some of them within the Compute Cloud@Customer (Local NFS share or block storage), in OCI (Object Storage), or utilizing the customer infrastructure already available, such as VTL, servers with NFS shares of NFS shares from external NAS appliances, ex: NFS shares from Oracle ZFS Storage Appliance. In addition, Veeam Backup server can be deployed outside of Compute Cloud@Customer. It can be a on-premises virtual or bare metal server or even an instance running on OCI.
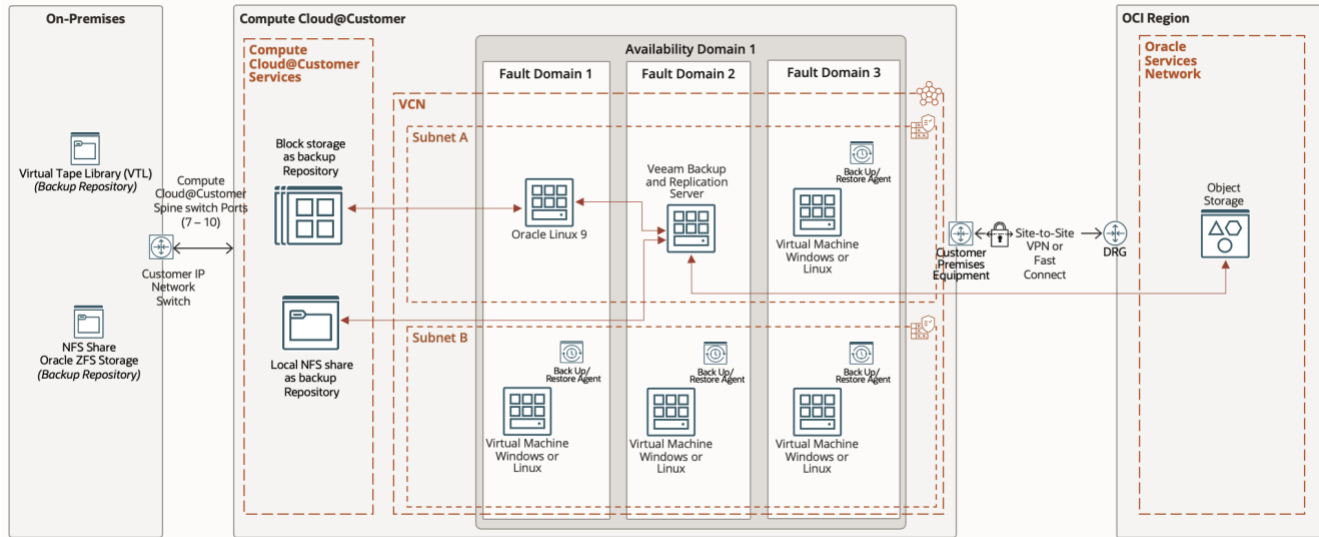
Figure 1. Veeam Backup architecture with Compute Cloud@Customer

Deploying Veeam using Oracle Compute Cloud@Customer local NFS share as backup repository

In this architecture, Veeam Backup & Replication is deployed on Oracle Compute Cloud@Customer utilizing a local NFS (Network File System) share as the backup repository. The NFS share is provisioned within Oracle Compute Cloud@Customer and used to store backups for all compute instances running in the environment.

Key Components

- **Oracle Compute Cloud@Customer:** Hosts the Veeam Backup Server, Proxy Servers, and other necessary components.

- **NFS Share:** Configured on Oracle Compute Cloud@Customer as a backup repository. This NFS share provides a network-accessible storage location for backup data.

- **Veeam Backup Server:** Manages backup operations and stores backup data on the NFS share.

- **Compute Instances:** All compute instances within Oracle Compute Cloud@Customer are protected by Veeam, with their backups stored on the NFS share.

Advantages

- **Ease of Use:** NFS shares are straightforward to set up and manage within Oracle Compute Cloud@Customer.

- **Performance:** Local network storage ensures high-speed access to backup data.

- **Scalability:** The architecture can scale by adding more NFS shares.
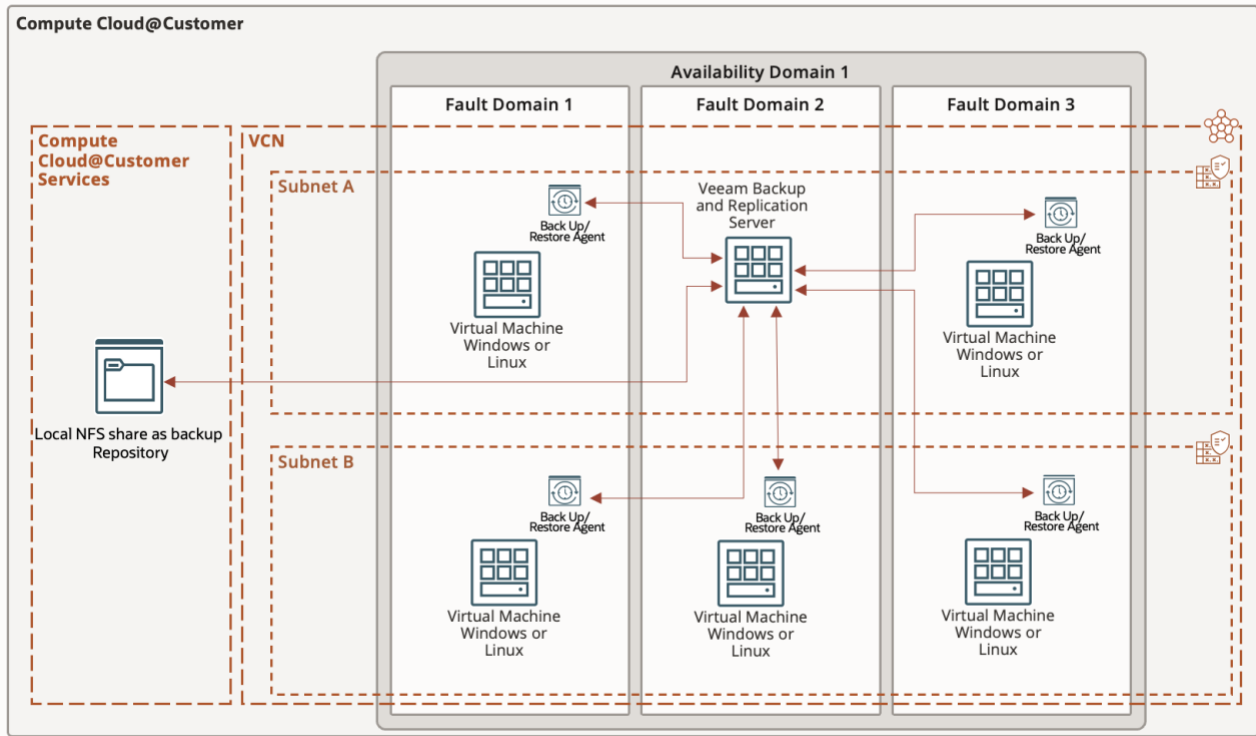
Architecture Diagram

Figure 2. Compute Cloud@Customer NFS Share as backup and repository for Veeam

How to Deploy

1. On Compute Cloud@Customer dashboard, under File Storage, click on File Systems, then create a new Network File System. Enter the name of the new Network File System, then select the compartment you would like to deploy it. Click Create File System.
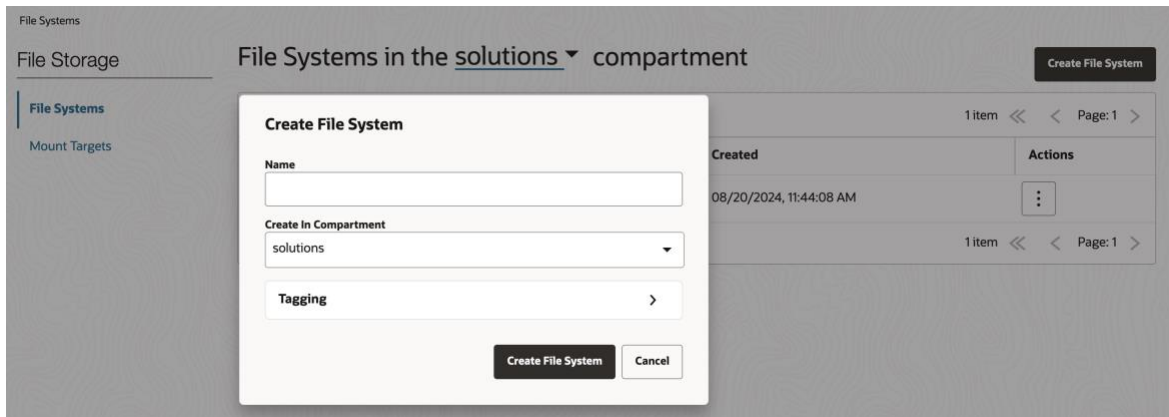

Figure 3. Compute Cloud@Customer Network File System Configuration

2. On the same screen, under File Systems and File Storage, click on Mount Targets to create a new Mount Target to be presented to Veeam Backup server. Enter the name of the new Mount Target, select the compartment, VCN, and Subnet, you would like to deploy the new Mount Target.

Figure 4. Compute Cloud@Customer File Storage

Figure 5. Compute Cloud@Customer Mount Target configuration

3. Once available, click on the new Mount Target, then under Resources, click Create Export to create a new File System Export to be presented to Veeam Backup Server. Select the previous File System and Mount Target Created, then enter the CIDR you want to allow to access this new Network File System. Click Create Export, then the new Network File System will be created.

Figure 6. Compute Cloud@Customer File System Export configuration

4. One available, click on the new Mount Target created and copy the IP address and the full export path. The full Network File System path will be needed by Veeam Backup server for the Network File System configuration as backup repository. The full path will be the following: Mount Target IP address:/export/OCID of the mount target. See figure 7 below.
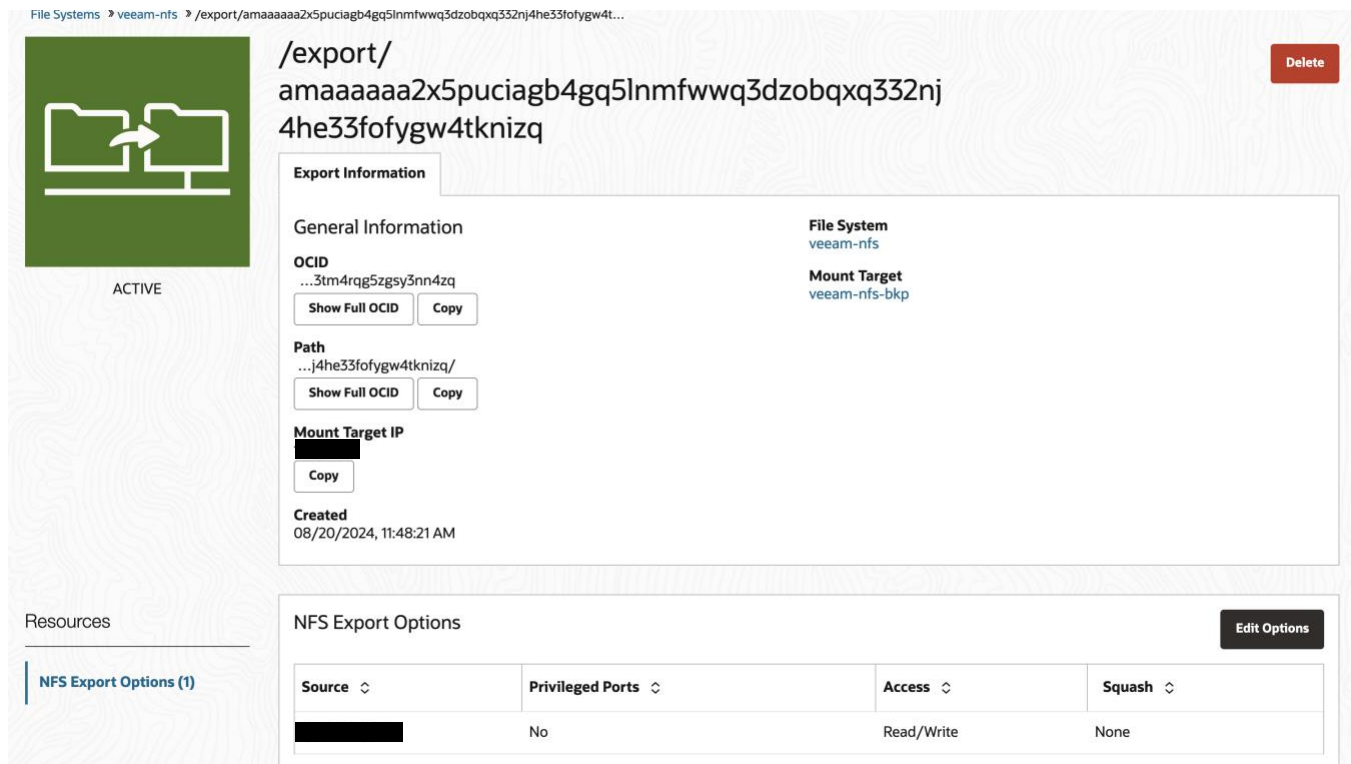
Figure 7. Compute Cloud@Customer File System Full path overview

5. On Veeam Backup server, right-click on Backup and Repository, select Add Backup Repository, select NAS then NFS options. Enter the name of your new NFS Share backup repository. Click next.
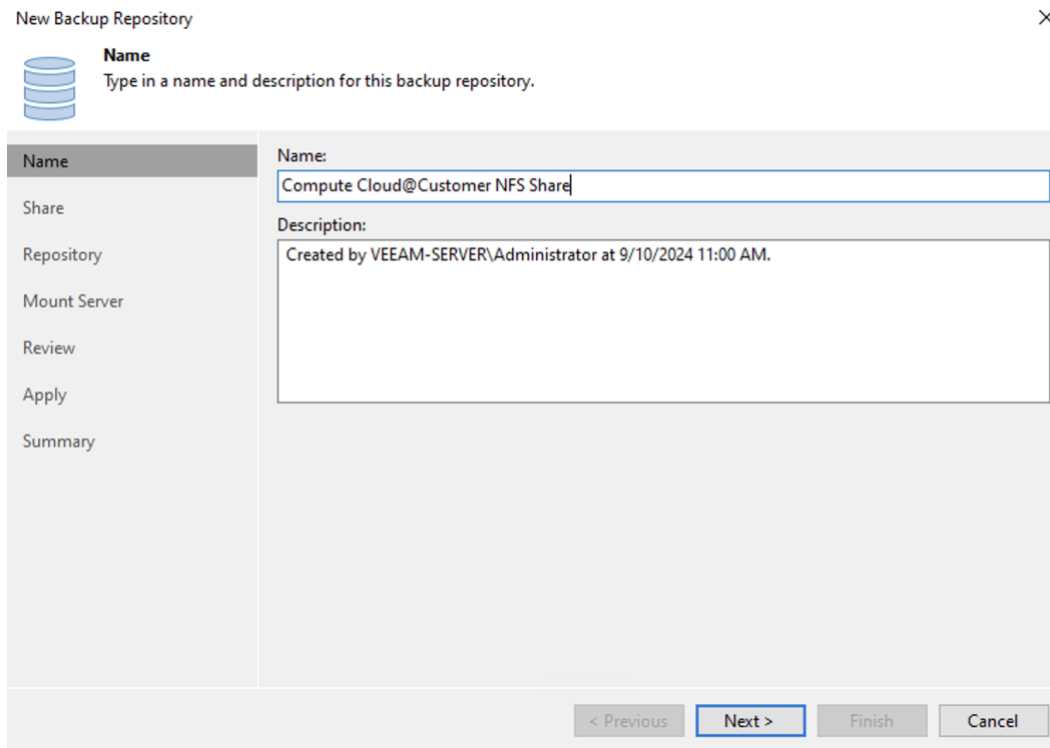
Figure 8. Veeam Backup server NFS share configuration as backup repository

6. Enter the full path of the Network File Systems previously configured. Ex:
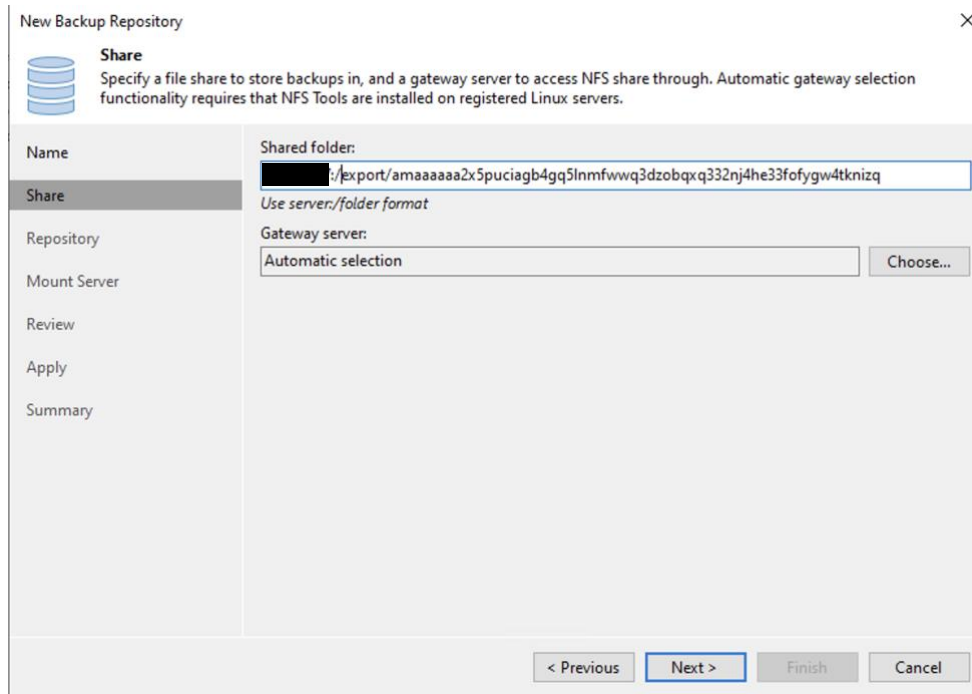
Figure 9. Veeam Backup server NFS path configuration for backup repository

7. On the next screen, click Populate to review the capacity and free space available on the NFS share. Adjust load control to best fit your environment and performance requirements. Follow Veeam's recommendation and best practices. Click next.
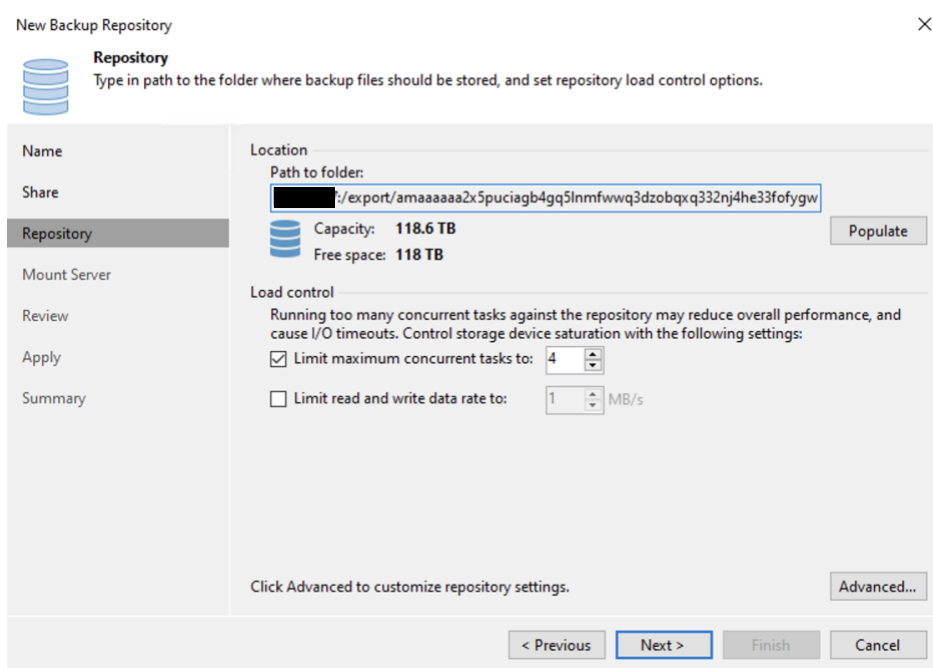
Figure 10. Veeam Backup server NFS path configuration – Storage capacity overview, load control and advanced settings

8. Select the mount server and enable vPower NFS service on the mount server. Click next, then apply.
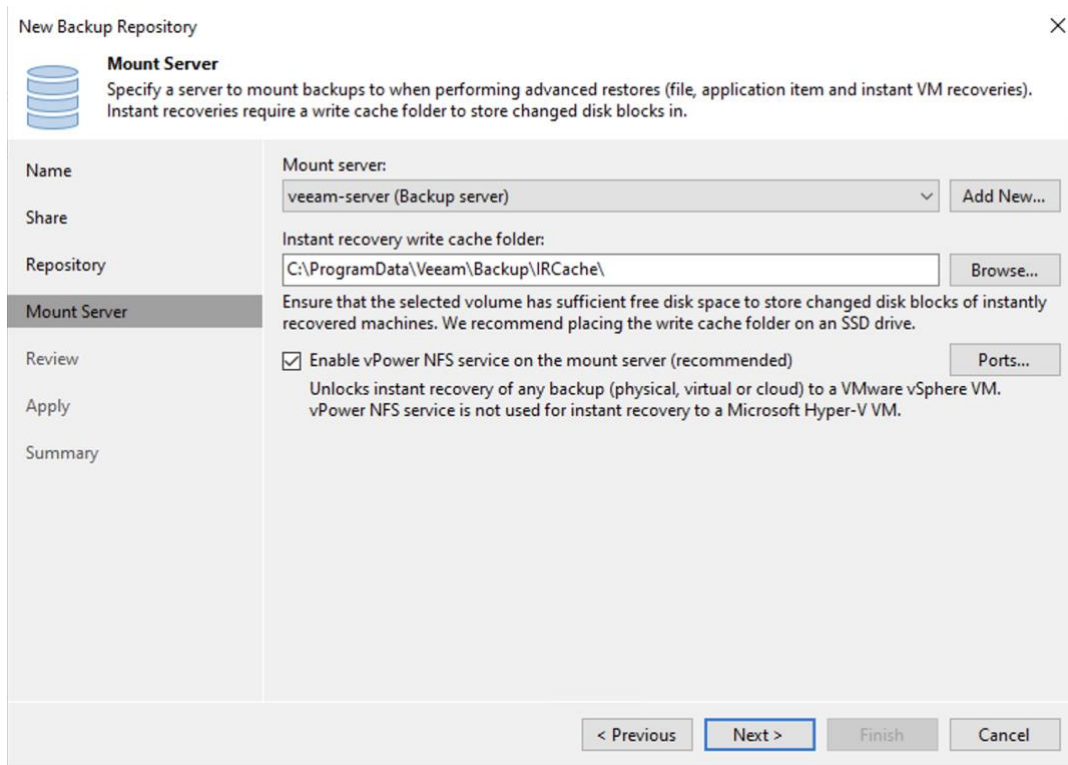
Figure 11. Veeam Backup server NFS path configuration – Mount Server

9. The new Veeam repository using Compute Cloud@Customer Network File System will be available and ready to be utilized as backup repository. Click next for the summary and to complete the configuration.
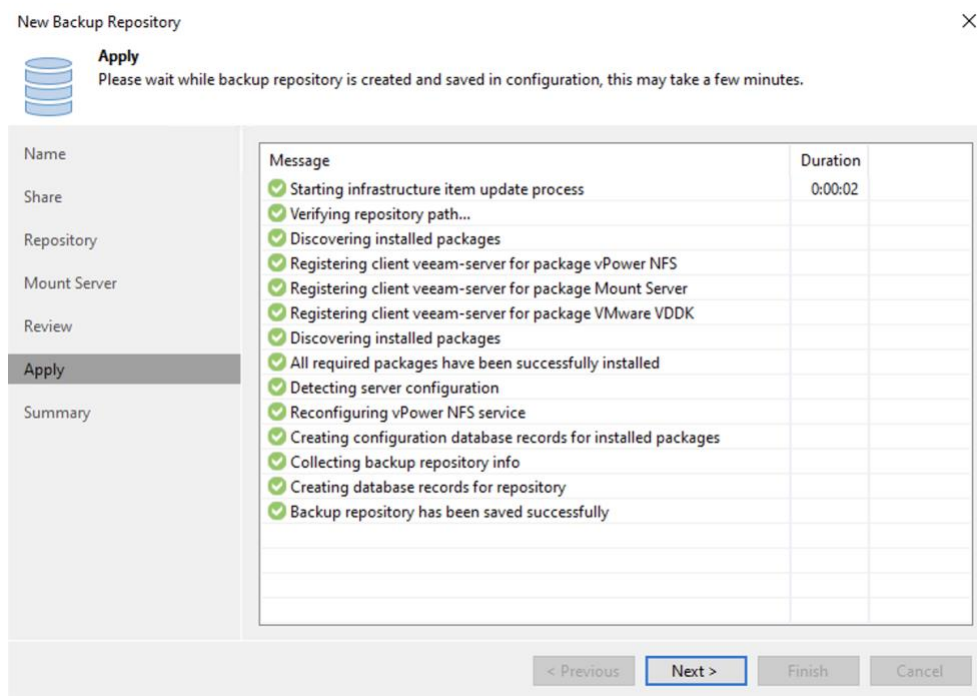

Figure 12. Veeam Backup server NFS configuration as backup repository – Configuration successful

Deploying Veeam using Oracle Linux instance on Compute Cloud@Customer with Direct Attached Block Storage as backup repository

In this architecture, Veeam Backup & Replication is deployed on Oracle Compute Cloud@Customer utilizing Oracle Linux as the operating system for the local backup repository. This setup allows organizations to leverage the robustness of Oracle Linux to manage and store backups locally within the Compute Cloud@Customer environment.

This architecture provides quick access to backup data and ensures that backups are stored within the same infrastructure as the production workloads, enhancing data security and compliance.

Key Components

- **Oracle Compute Cloud@Customer:**
  - The core platform that provides cloud infrastructure services within the customer's data center, ensuring data residency and compliance with regulatory requirements.

- **Oracle Linux:**
  - The operating system running on the compute instances within Oracle Compute Cloud@Customer. Oracle Linux is used as backup repository where Veeam stores backup data.

- **Veeam Backup & Replication:**
  - The backup solution installed on Oracle Compute Cloud@Customer. Veeam Backup Server, Proxy Servers, and Backup Repositories are deployed on Oracle Linux instances within the cloud environment.

- **Local Backup Repository:**
  - Configured on Oracle Linux, this repository stores all backup data locally within the Oracle Compute Cloud@Customer environment. The repository utilizes local block storage volumes attached to the Oracle Linux instance.

- **Compute Instances:**
  - The virtual machines or workloads running on Oracle Compute Cloud@Customer that need to be protected. These instances are backed up by Veeam and stored in the local repository.

Advantages

- **High Performance:**
  - Using a local repository within the same Oracle Compute Cloud@Customer environment ensures high-speed access to backup data, reducing backup and restore times.

- **Data Security and Compliance:**
  - Storing backups locally within the Oracle Compute Cloud@Customer infrastructure ensures that data remains within the customer's control, meeting strict regulatory and compliance requirements.

- **Cost Efficiency:**
  - Leveraging Oracle Linux as the repository operating system allows for flexible and cost-effective storage management, utilizing local block storage.

- **Scalability:**
  - The architecture is scalable, allowing additional Oracle Linux instances and local block storage to be added as backup data grows. This ensures that the solution can accommodate increasing backup demands without significant changes to the infrastructure.
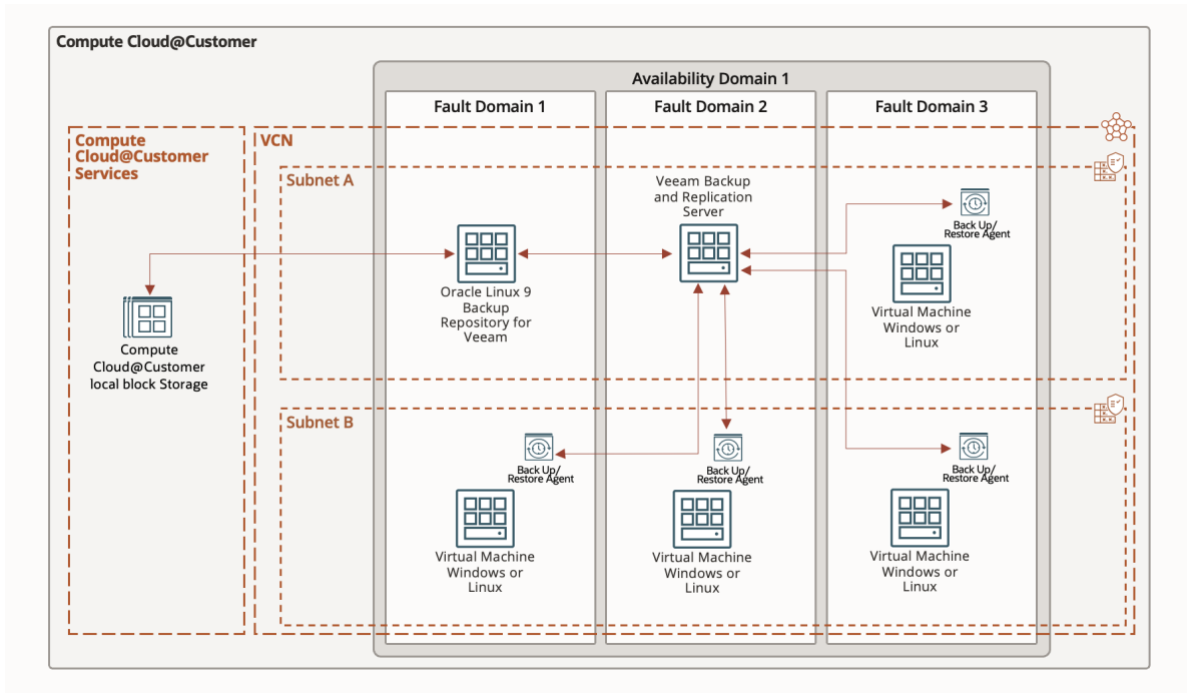
Architecture Diagram

Figure 13. Compute Cloud@Customer with Oracle Linux Directed Attached Block Storage as backup and repository for Veeam

How to Deploy

10. On Compute Cloud@Customer, deploy a new Oracle Linux 9 to be utilized by Veeam Backup and replication as backup repository.

11. On Oracle Compute Cloud@Customer, create new block volumes then attach to the new Oracle Linux 9 instance.
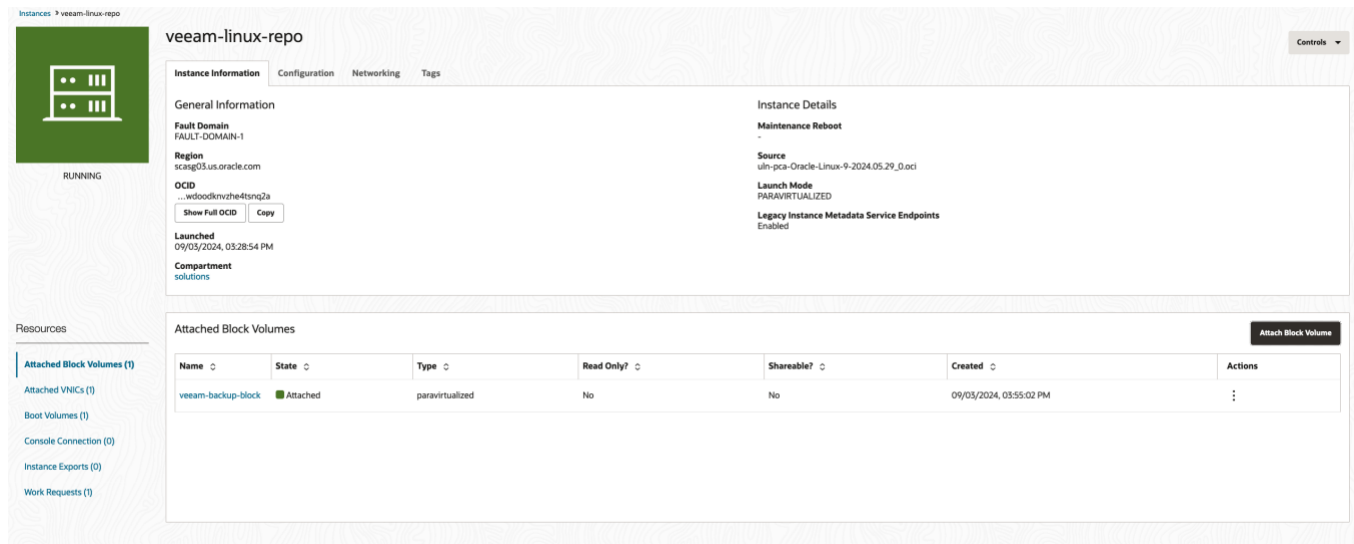

Figure 24. Oracle Linux instance on Compute Cloud@Customer for Veeam Backup repository

12. On the Oracle Linux instance, create a new partition and format using XFS Linux file system. The example below shows how to create a small 300GB Linux partition and format using XFS Linux file system.

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```
[root@veeam-linux-repo ~]# fdisk /dev/sdb
Command (m for help): n
Partition type
    p    primary (0 primary, 0 extended, 4 free)
    e    extended (container for logical partitions)
Select (default p): p
Partition number (1-4, default 1): 1
First sector (2560-629145599, default 2560):
Last sector, +/-sectors or +/-size{K,M,G,T,P} (2560-629145599, default 629145599):
Created a new partition 1 of type 'Linux' and of size 300 GiB.
Command (m for help): p
Disk /dev/sdb: 300 GiB, 322122547200 bytes, 629145600 sectors
Disk model: ZFS Storage 7390
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 8192 bytes / 1310720 bytes
Disklabel type: dos
Disk identifier: 0x9c410e3d


Device     Boot Start       End   Sectors  Size Id Type
/dev/sdb1        2560 629145599 629143040  300G 83 Linux


Command (m for help): w
```

13. On the Oracle Linux instance, mount the new XFS Linux file system and add it to the fstab of the instance.

14. On Veeam Backup and Replication management interface, add the new Oracle Linux instance as the backup repository. Right-click on Backup Repositories, select Add backup repository, then click Direct attached storage.
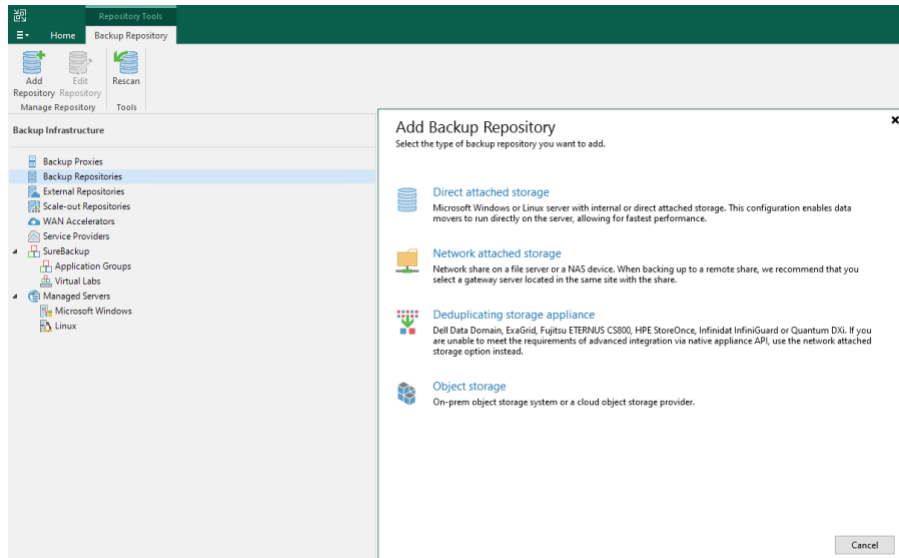

Figure 15. Oracle Linux instance on Compute Cloud@Customer for Veeam Backup repository

15. Select Linux.

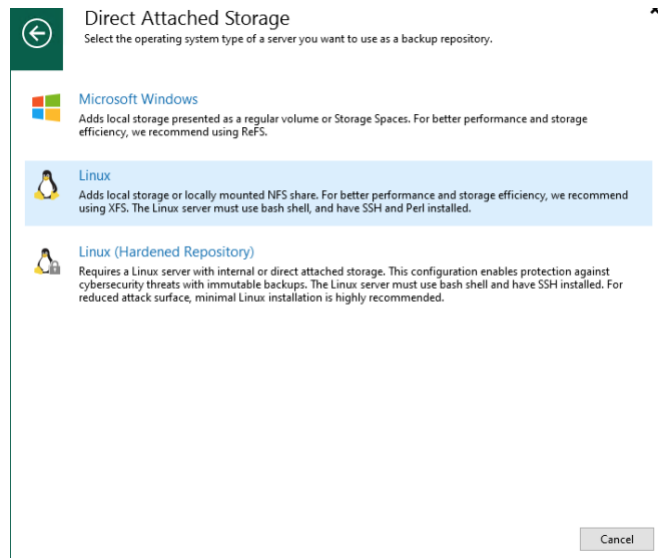**NOTE**: Linux (Hardened Repository) can also be utilized.

Figure 36. Oracle Linux instance on Compute Cloud@Customer for Veeam Backup repository

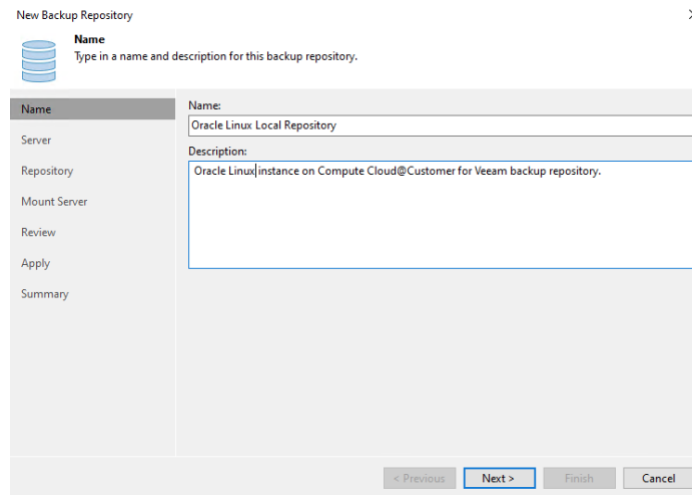16. Enter the name and description for the new Oracle Linux backup repository

Figure 17. Oracle Linux instance on Compute Cloud@Customer for Veeam Backup repository

17. Enter the DNS name or IP address of your Oracle Linux instance, credentials for the SSH connection, then click apply.
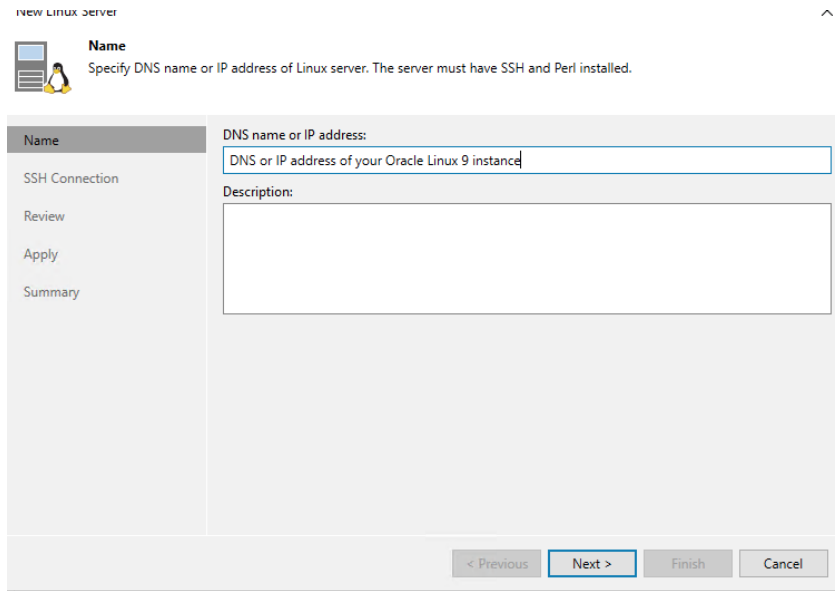
Figure 48. Oracle Linux instance on Compute Cloud@Customer for Veeam Backup repository

18. On the next screen, click Populate to list all available block storage attached to the Oracle Linux instance. Select the block storage to be utilized by Veeam as the backup repository. Click next.

NOTE: On this example, we are working with the 300GB block storage previously configured.
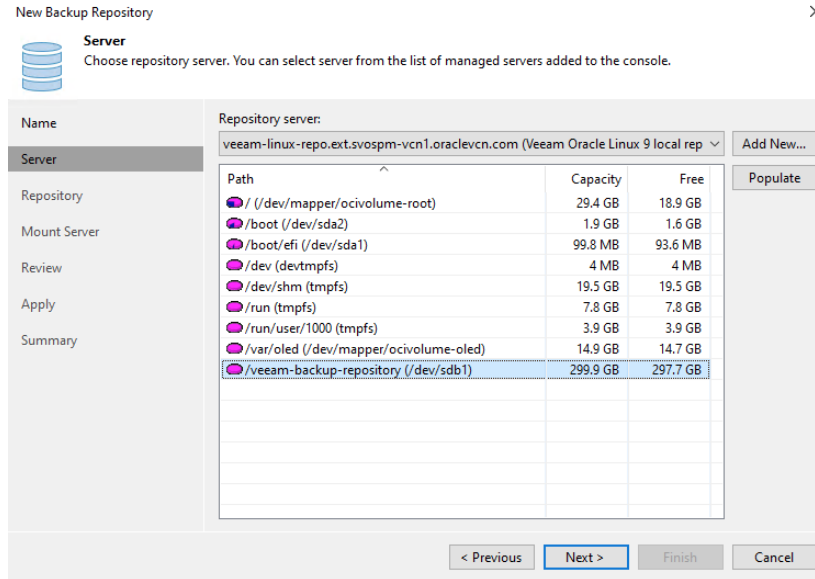
Figure 59. Oracle Linux instance on Compute Cloud@Customer for Veeam Backup repository

19. On the next screen, click Populate to review the capacity and free space for the block storage. Also, enable fast cloning as listed on the screenshot below. Adjust load control to best fit your environment and performance requirements. Follow Veeam's recommendation and best practices for Load Control, alignment of backup file data, and per machine backup files under advanced settings. Click next.
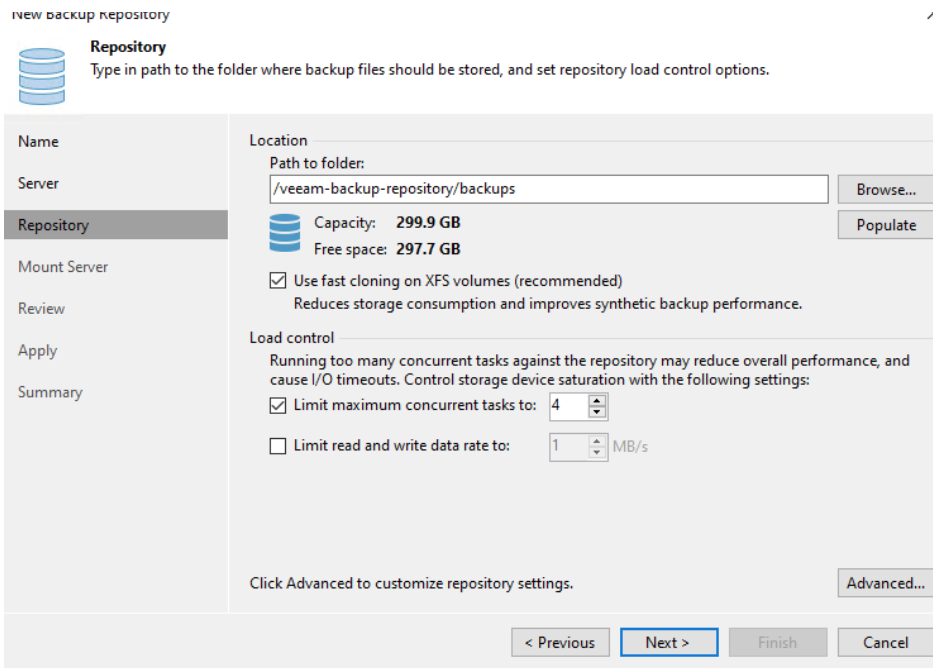
Figure 20. Oracle Linux instance on Compute Cloud@Customer for Veeam Backup repository

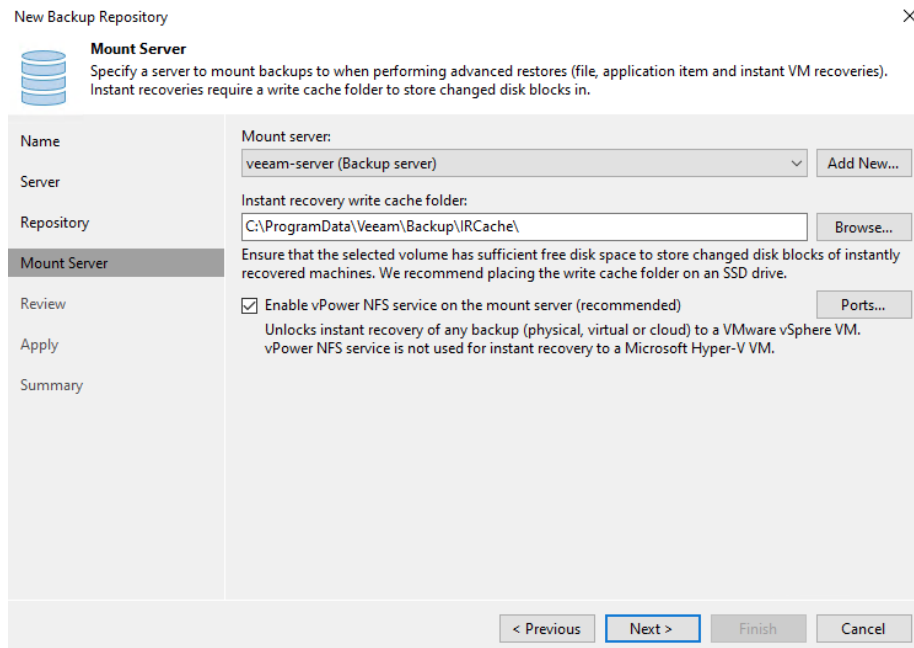20. Select the mount server and enable vPower NFS service on the mount server. Click next, then apply.

Figure 26. Oracle Linux instance on Compute Cloud@Customer for Veeam Backup repository

21. The new Veeam repository using an Oracle Linux instance on Compute Cloud@Customer will be available and ready to be utilized as backup repository. Click next for the summary and to complete the configuration.
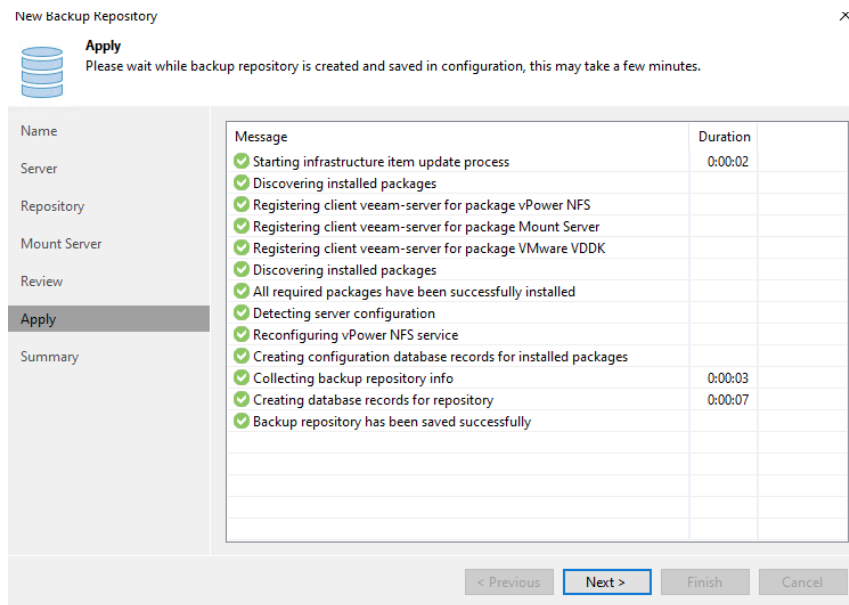
Figure 22. Oracle Linux instance on Compute Cloud@Customer for Veeam Backup repository

Deploying Veeam on Oracle Compute Cloud@Customer Using Oracle Cloud Infrastructure Object Storage as backup repository

This architecture leverages Oracle Object Storage as the backup repository for Veeam Backup & Replication software deployed on Oracle Compute Cloud@Customer. Oracle Object Storage provides a scalable, durable, and cost-effective solution for storing large volumes of backup data.

NOTE: Veeam Backup & Replication supports S3-compatible Object Storage as a capacity tier when you create scale-out repositories. OCI Object Storage is certified as Veeam Ready.

Key Components

- **Oracle Compute Cloud@Customer:** Hosts the Veeam Backup Server, Proxy Servers, and other Veeam components.

- **OCI Object Storage:** Used as the primary or secondary backup repository (depending on your RTO/RPO requirements). It offers high availability and durability for storing backup data.

- **Veeam Backup Server:** Manages backup jobs and stores backup data directly to Oracle Object Storage.

- **Compute Instances:** All compute instances running on Oracle Compute Cloud@Customer are backed up to Oracle Object Storage.

Advantages

- **Cost-Effectiveness:** Oracle Object Storage offers a cost-efficient solution for long-term backup storage, particularly for large data volumes.

- **Durability and Availability:** Object Storage ensures high levels of data durability and availability, critical for disaster recovery.
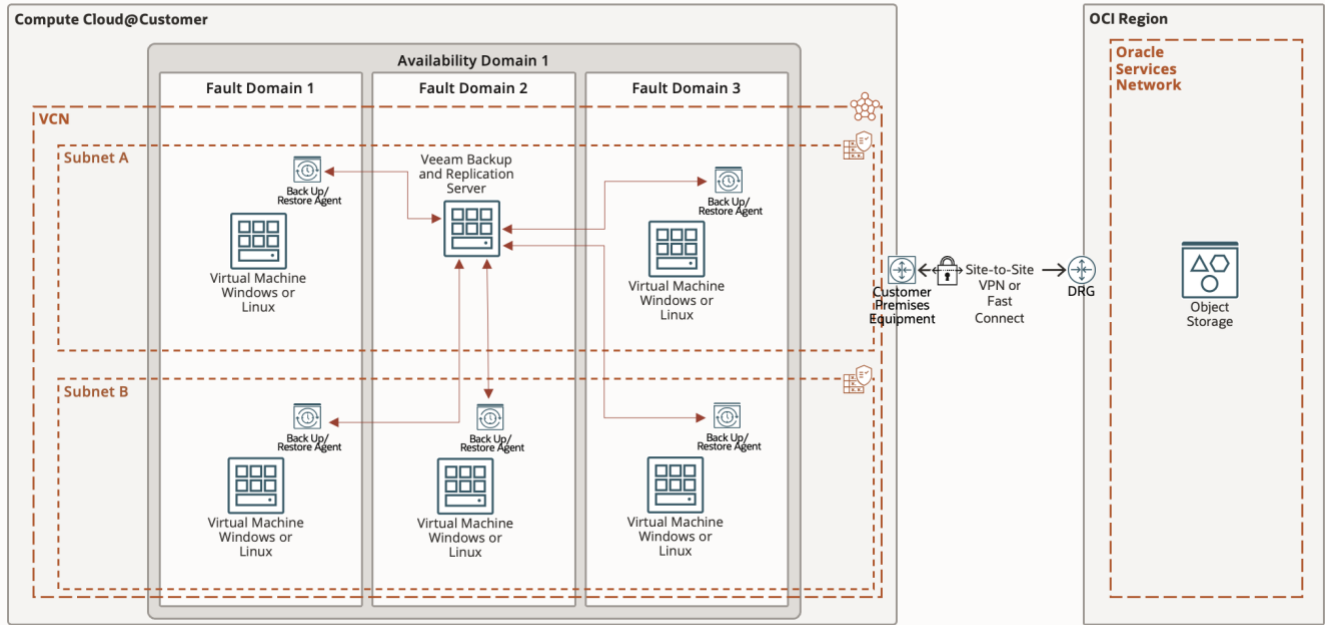
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Architecture Diagram

Figure 23. Veeam on Oracle Compute Cloud@Customer Using Oracle Cloud Infrastructure Object Storage as Backup Repository

How to Deploy

1. **Configure Secret Key:** To add OCI Object Storage as S3-compatible storage for Veeam, you must provide an access key and a secret key. To generate these credentials, follow steps listed below:

2. In the Identity section of the Console, create a user:

   a. Open the navigation menu. Under Governance and Administration, go to Identity and click **Users**. A list of the users in your tenancy is displayed.

   b. Click **Create User**.

   c. Enter the following:

      i. **Name**: A unique name or email address for the user.

      ii. **Description**: This value could be the user's full name, a nickname, or other descriptive information. You can change this value later.

      iii. **Email**: Enter an email address for the user.

      iv. **Tags**: Optionally, you can apply tags. If you have permissions to create a resource, you also have permissions to apply free-form tags to that resource.

   d. Click **Create**.

3. Create a group for Object Storage access and add the user to it.

4. Create a policy to manage buckets and objects in the compartment.

5. To generate the access key and secret key, select the user and click **Customer Secret Keys** on the left side of the page.

6. Click **Generate Secret Key**.

7. Enter a name for the key and then click **Generate Secret Key**. The generated secret key is displayed.

   NOTE: The secret key is displayed only once. You must copy the key and save it in a secure place. After you close the dialog box, the key name is listed along with its associated access key.

8. Copy the access key. You use the access key and secret key when adding Object Storage in Veeam.

9. In the Veeam Backup & Replication Console, select **Backup Infrastructure**, then **Backup Repositories**, and then click **Add Repository**.

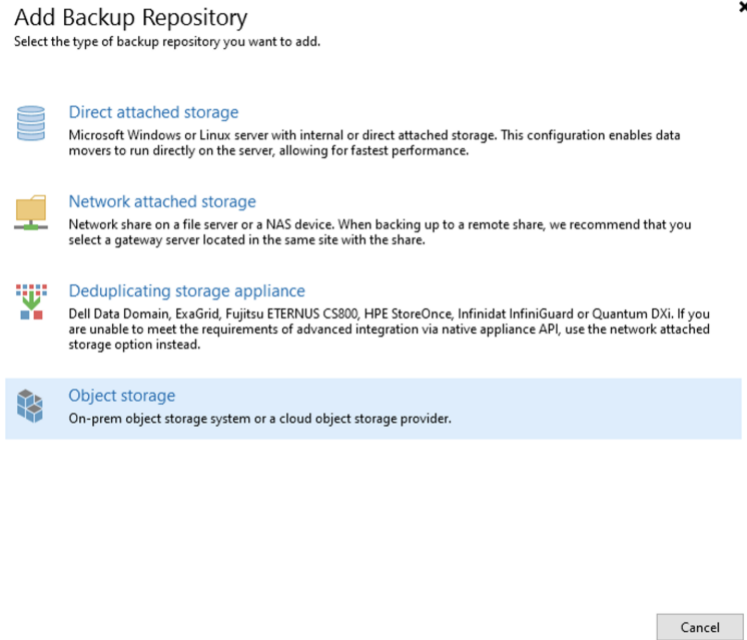10. In the Add Backup Repository wizard, select **Object storage**.

Figure 24. Configuring OCI Object Storage as backup repository for Veeam Backup

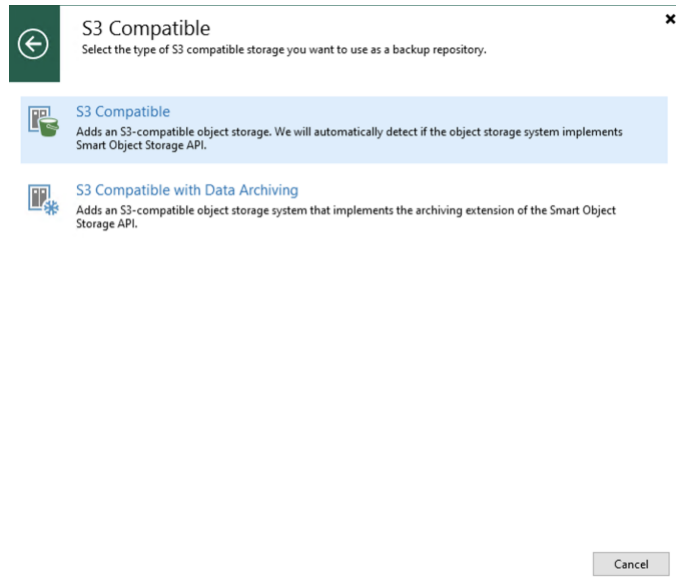11. Select **S3 Compatible**.

Figure 25. Configuring OCI Object Storage as backup repository for Veeam Backup - S3 compatible option

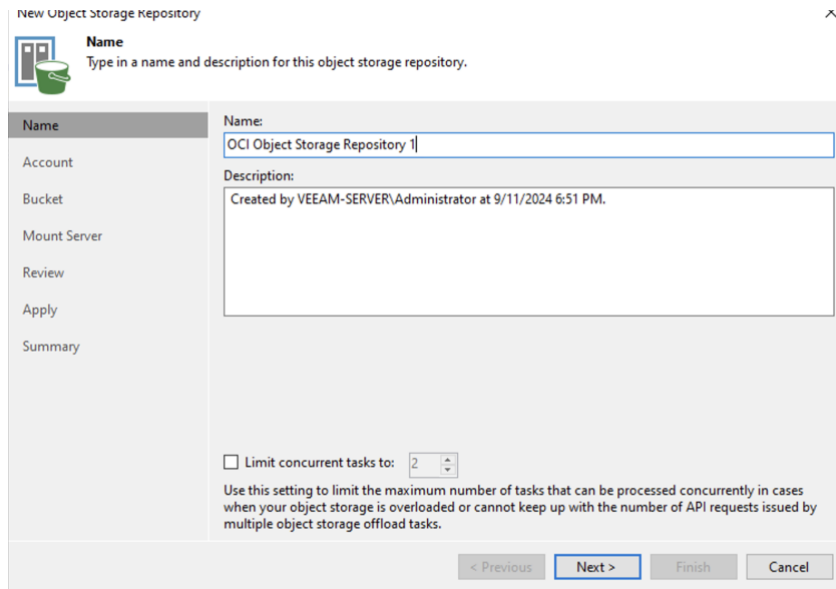12. Provide the required details in the wizard. Enter the name of your new Object Storage.

Figure 26. Configuring OCI Object Storage as backup repository for Veeam Backup – Object Storage name

13. On the Account page specifically, enter the **Service point** (or endpoint) and **Region**; of your Object Storage bucket. for example:

Service https://xyzxwz.compat.objectstorage.us-phoenix-1.oraclecloud.com

14. On the Account page, click **Add** next to **Credentials**, and add the credentials that were created in the previous section (access key and secret key).
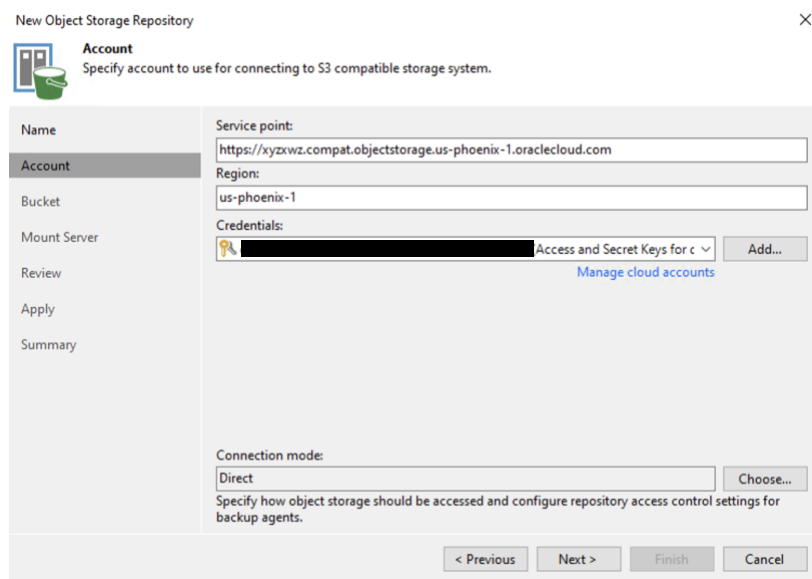

Figure 27. Configuring OCI Object Storage as backup repository for Veeam Backup – Service point

15. Select the bucket (if any) within your Object Storage you would like to setup as backup repository, then finish the wizard to add Object Storage as a backup repository.

Deploying Veeam on Oracle Compute Cloud@Customer Using Oracle ZFS Storage Appliance as external backup repository

This architecture outlines the deployment of Veeam Backup & Replication on Oracle Compute Cloud@Customer, utilizing Oracle ZFS Storage Appliance as the external backup repository. Oracle ZFS Storage Appliance offers a highly scalable, high-performance storage solution, ideal for use as a repository in enterprise backup environments. By deploying Veeam with Oracle ZFS Storage Appliance, organizations can benefit from reliable data protection, efficient backup operations, and rapid data recovery.

Key Components

- **Oracle Compute Cloud@Customer:**
    - Provides cloud infrastructure services directly within the customer's data center. This platform hosts the Veeam Backup & Replication components, ensuring data control and compliance.

- **Veeam Backup & Replication:**
    - The core data protection solution, which orchestrates the backup, recovery, and replication processes. Veeam is deployed on Oracle Compute Cloud@Customer and manages backups for the compute instances within the environment.

- **Oracle ZFS Storage Appliance:**
    - An enterprise-grade, external storage system used as the backup repository. The Oracle ZFS Storage Appliance provides high throughput, low latency, and advanced data services such as compression and replication, making it an optimal choice for storing backup data.

- **Compute Instances:**
    - Instances and workloads running on Oracle Compute Cloud@Customer that are protected by Veeam Backup & Replication. The backups of these instances are stored on the Oracle ZFS Storage Appliance.

Advantages

- **High Performance and Scalability:**
    - Oracle ZFS Storage Appliance delivers high I/O performance, supporting rapid backup and restore operations. Its scalability ensures that it can handle increasing data volumes as the environment grows.

- **Advanced Data Management:**
    - Features like deduplication, compression, and snapshots reduce storage consumption and improve the efficiency of backup operations. These capabilities are natively supported by the ZFS architecture.

- **Enterprise-Grade Reliability:**
    - Oracle ZFS Storage Appliance is designed for mission-critical environments, offering robust data protection, high availability, and advanced redundancy features to safeguard backup data.
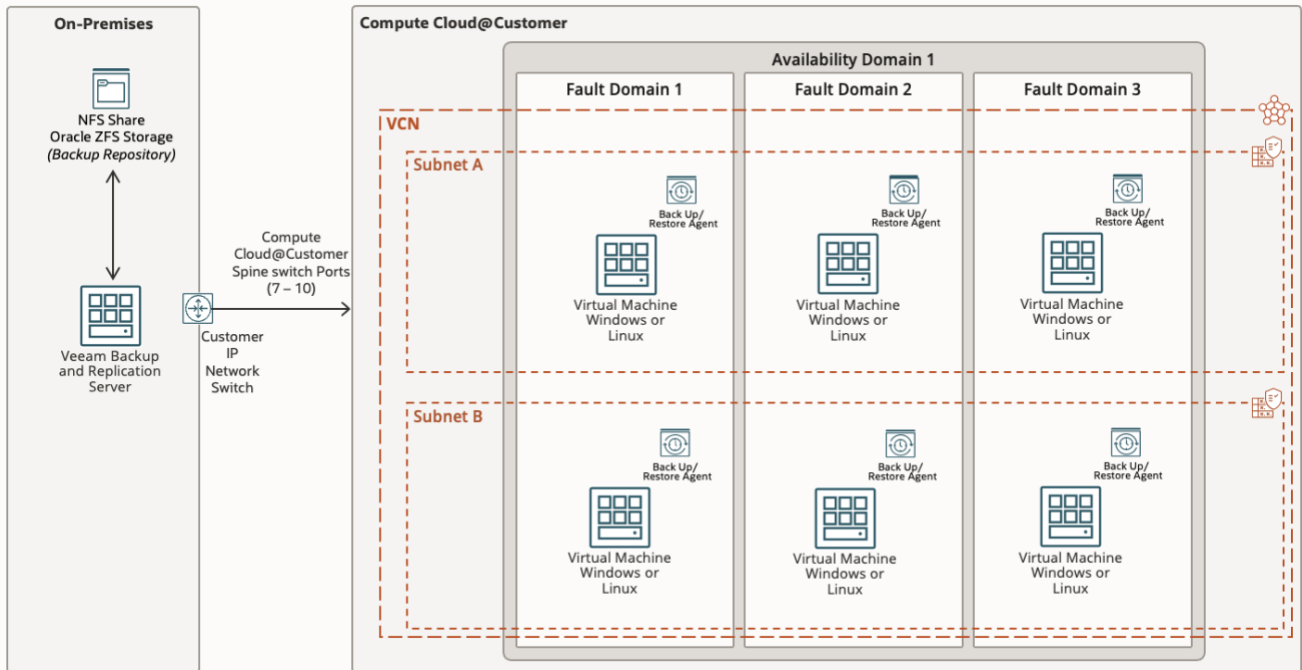
Architecture Diagram

Figure 28. Veeam on Oracle Compute Cloud@Customer Using Oracle ZFS Storage Appliance as external Backup Repository.

How to Deploy

1. Configure a new NFSv4.x on Oracle ZFS Storage appliance

2. On Veeam Backup server console, right-click on Backup and Repositories, add backup repository. Select Network attached storage, then NFS Share.
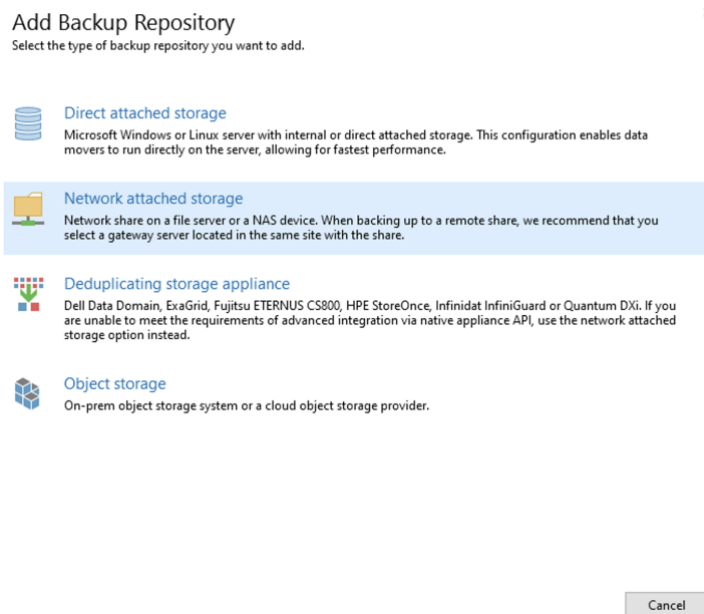

Figure 29. Veeam on Oracle Compute Cloud@Customer Using Oracle ZFS Storage Appliance NFS shares as external Backup Repository.

3. Provide the required details in the wizard. Enter the name of your new NFS backup repository.
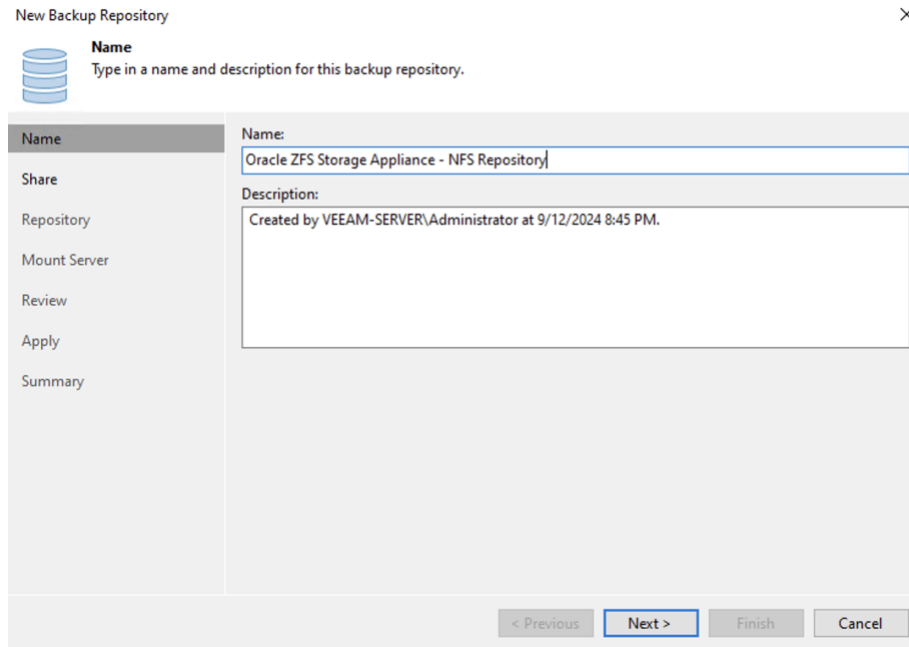
Figure 30. Configuring NFS from Oracle ZFS Storage Appliance as backup repository for Veeam Backup

4. On the Account page specifically, enter the **Shared folder point** of your NFS share and click next. for example:

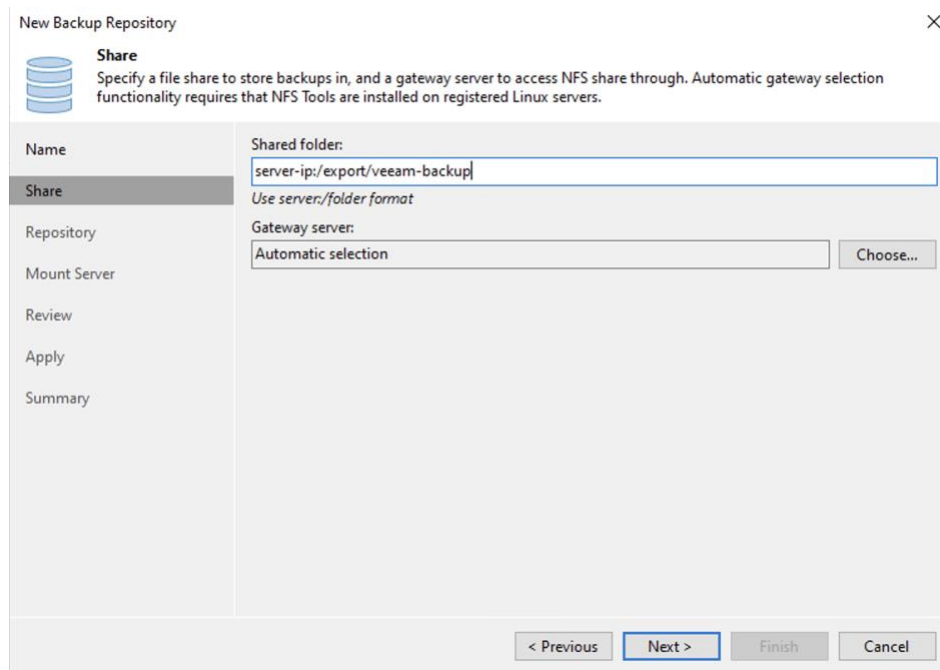**server-ip or dns name:/export/veeam-backup**

Figure 31. Configuring shared folder from Oracle ZFS Storage Appliance as backup repository for Veeam Backup

5. On the next screen, click Populate to review the capacity and free space for the NFS share. Adjust load control to best fit your environment and performance requirements. Follow Veeam's recommendation and best practices for Load Control, alignment of backup file data, and per machine backup files under advanced settings. Click next.
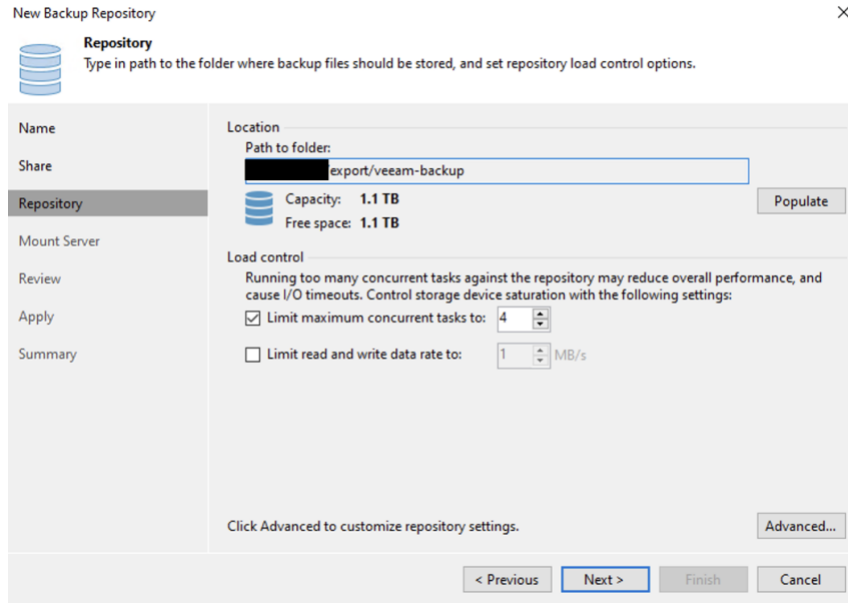
Figure 32. NFS share from Oracle ZFS Storage Appliance capacity overview

1. Select the mount server and enable vPower NFS service on the mount server. Click next, then apply.
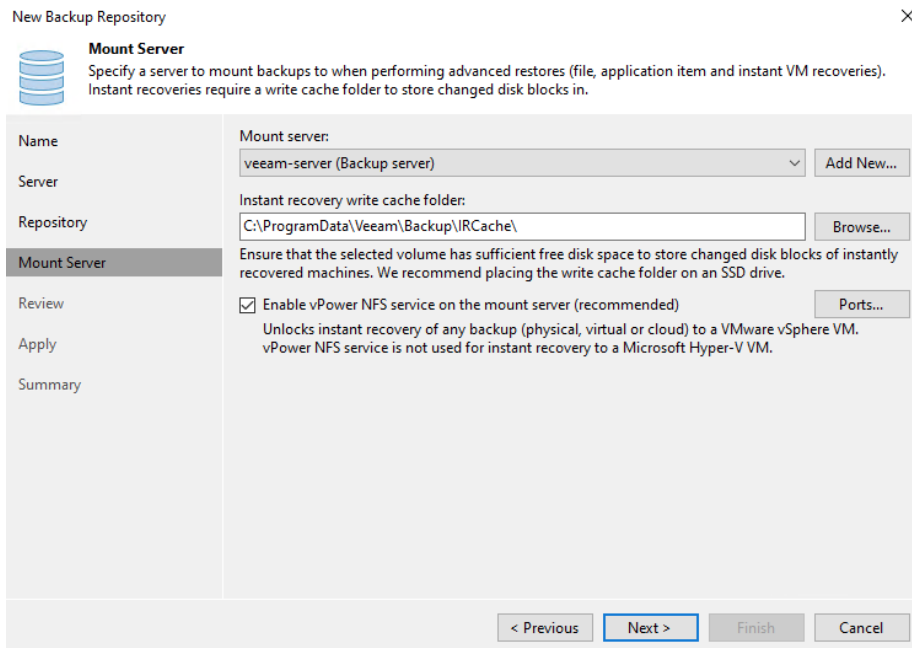

Figure 33. NFS share mount server overview for Veeam Backup repository

2. The new Veeam repository using an NFS share from Oracle ZFS Storage Appliance will be available and ready to be utilized as backup repository. Click next for the summary and to complete the configuration.

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Deploying Veeam on Oracle Compute Cloud@Customer Using Virtual Tape Library (VTL) as backup repository

Setting up a Virtual Tape Library (VTL) in Veeam Backup & Replication allows you to simulate a tape storage environment using disk-based storage, providing the benefits of tape archiving and retention policies without using physical tape infrastructure. VTLs are commonly used for long-term data retention and offsite storage, often integrated with cloud providers or external storage appliances.

Architecture Diagram
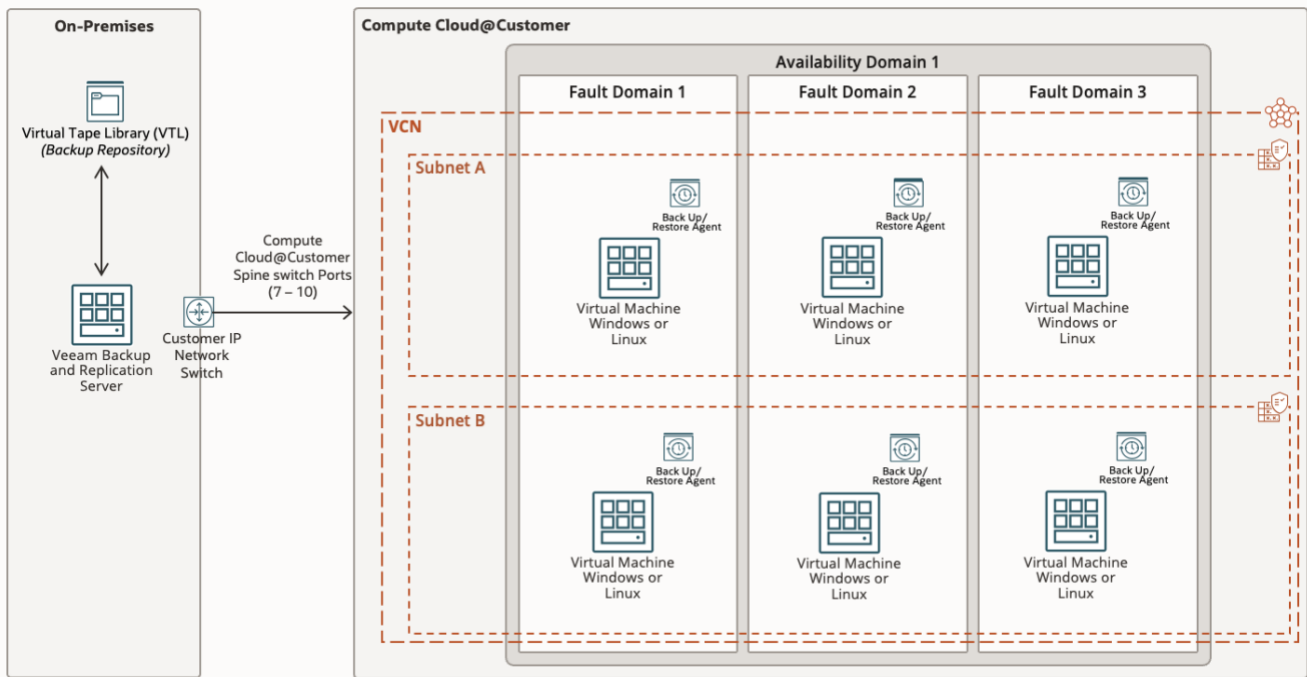
Figure 34. Veeam on Oracle Compute Cloud@Customer using external Virtual Tape Library (VTL) as Backup Repository.

How to Deploy VTL on Veeam Backup & Replication

1. Set Up VTL in Your Storage Environment. Veeam Backup & Replication does not natively create a VTL; you need to set up the VTL either via software or a hardware appliance. Here are a few methods:

    o Use a Physical Storage Appliance with VTL Support: Configure the VTL on your appliance by creating virtual tape drives, virtual tapes, and virtual tape slots using the appliance's management interface.

    o Software-Based VTL Solutions: Install and configure 3rd party Virtual Tape Library software on a dedicated server to emulate a VTL. After configuring the software, create the virtual tape drives, tapes, and slots.

2. Add the VTL to Your Veeam Backup & Replication Environment. Once you have a VTL set up (either through a physical server or a third-party software solution), you need to add it to Veeam.

3. Open Veeam Backup & Replication: Launch the Veeam console on your Veeam Backup Server.

4. Add the VTL as a Tape Infrastructure: In the Veeam console, go to the Tape Infrastructure section. Right-click on Tape Servers and select Add Tape Server.
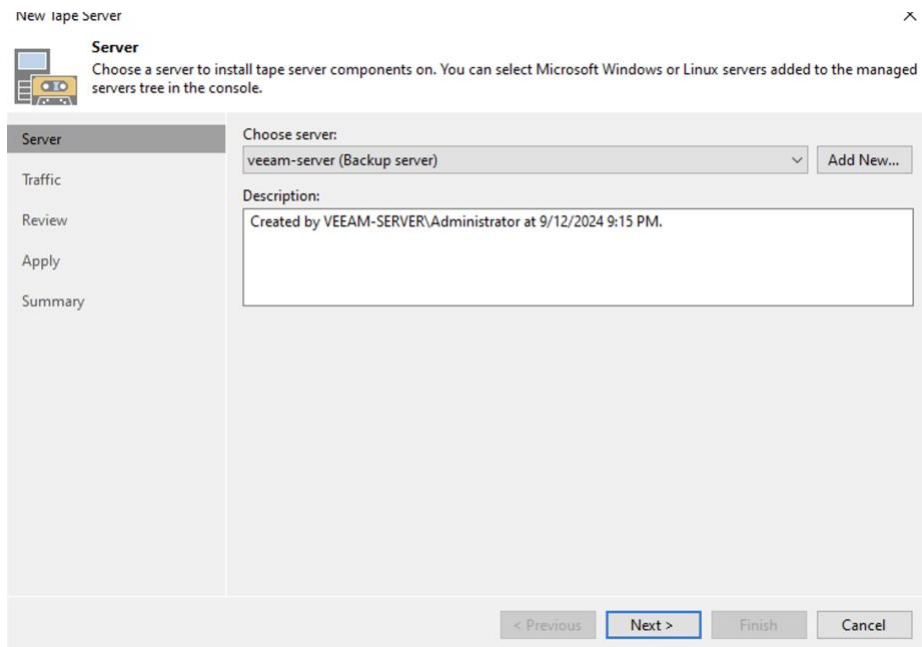
Figure 35. Veeam on Oracle Compute Cloud@Customer using external Virtual Tape Library (VTL) as Backup Repository.

5. **Select the Tape Server:** Select the server where the VTL is installed or connected. This can be a physical server or a third-party software solution.

6. **Detect the VTL Devices:** Veeam will automatically detect any VTL devices (virtual tape drives, media changers, etc.) connected to the server. Ensure that the VTL is properly detected with all the virtual tape drives and media.

7. **Configure Media Pools:** Go to the Tape Infrastructure section. Create Media Pools by defining how tapes are grouped, retention policies, and when virtual tapes are recycled or retired. For example, you can set pools for monthly, weekly, or daily backups, then assign virtual tapes to media pools according to your backup and retention strategy. The VTL infrastructure will be available on Veeam, you need to configure backup jobs to use the virtual tape library.

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