About the S3 configuration process

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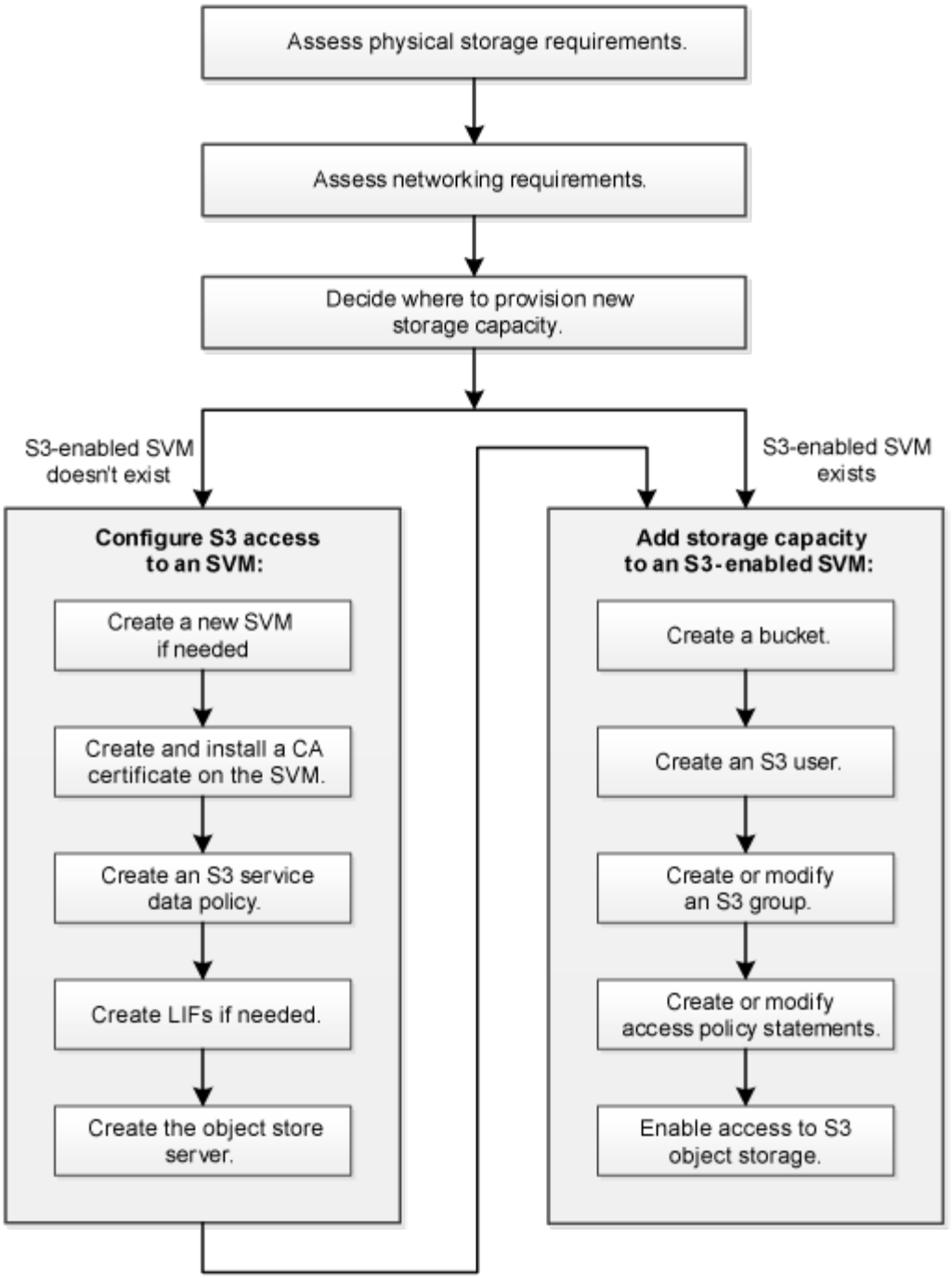
About the S3 configuration process

S3 configuration workflow

Configuring S3 involves assessing physical storage and networking requirements, and then choosing a workflow that is specific to your goal—configuring S3 access to a new or existing SVM, or adding a bucket and users to an existing SVM that is already fully configured for S3 access.

When you configure S3 access to a new or existing storage VM using System Manager, you are prompted to enter certificate and networking information, and the S3 object storage server is created in a single operation.



Assess physical storage requirements

Before provisioning S3 storage for clients, you must ensure that there is sufficient space in existing aggregates for the new object store. If there is not, you can add disks to existing aggregates or create new aggregates of the desired type and location.

About this task

When you create an S3 bucket in an S3-enabled SVM, a FlexGroup volume is automatically created to support the bucket. You can let ONTAP select the underlying aggregates and FlexGroup components automatically (the default) or you can select the underlying aggregates and FlexGroup components yourself.

If you decide to specify the aggregates and FlexGroup components — for example, if you have specific performance requirements for the underlying disks — you should make sure that your aggregate configuration conforms to best practice guidelines for provisioning a FlexGroup volume. Learn more:

- FlexGroup volumes management
- NetApp Technical Report 4571-a: NetApp ONTAP FlexGroup Volume Top Best Practices

If you are serving buckets from Cloud Volumes ONTAP, it is strongly recommended that you manually select the underlying aggregates to ensure that they are using one node only. Using aggregates from both nodes can impact performance, because the nodes will be in geographically separated availability zones and hence susceptible to latency issues. Learn about creating buckets for Cloud Volumes ONTAP.

You can use the ONTAP S3 server to create a local FabricPool capacity tier; that is, in the same cluster as the performance tier. This can be useful, for example, if you have SSD disks attached to one HA pair and you want to tier *cold* data to HDD disks in another HA pair. In this use case, the S3 server and the bucket containing the local capacity tier should therefore be in a different HA pair than the performance tier. Local tiering is not supported on one-node and two-node clusters.

Steps

1. Display available space in existing aggregates:

   ```
   storage aggregate show
   ```

   If there is an aggregate with sufficient space or requisite node location, record its name for your S3 configuration.

   ```
   cluster-1::> storage aggregate show
   Aggregate     Size Available Used% State   #Vols  Nodes  RAID Status
   --------- -------- --------- ----- ------- ------ ------ -----------
   aggr_0     239.0GB   11.13GB   95% online       1 node1  raid_dp,
                                                            normal
   aggr_1     239.0GB   11.13GB   95% online       1 node1  raid_dp,
                                                            normal
   aggr_2     239.0GB   11.13GB   95% online       1 node2  raid_dp,
                                                            normal
   aggr_3     239.0GB   11.13GB   95% online       1 node2  raid_dp,
                                                            normal
   aggr_4     239.0GB   238.9GB   95% online       5 node3  raid_dp,
                                                            normal
   aggr_5     239.0GB   239.0GB   95% online       4 node4  raid_dp,
                                                            normal
   6 entries were displayed.
   ```

2. If there are no aggregates with sufficient space or requisite node location, add disks to an existing aggregate by using the `storage aggregate add-disks` command, or create a new aggregate by using the `storage aggregate create` command.

Assess networking requirements

Before providing S3 storage to clients, you must verify that networking is correctly configured to meet the S3 provisioning requirements.

What you'll need

The following cluster networking objects must be configured:

- Physical and logical ports
- Broadcast domains
- Subnets (if required)
- IPspaces (as required, in addition to the default IPspace)
- Failover groups (as required, in addition to the default failover group for each broadcast domain)
- External firewalls

About this task

For remote FabricPool capacity (cloud) tiers and remote S3 clients, you must use a data SVM and configure data LIFs. For FabricPool cloud tiers, you must also configure intercluster LIFs; cluster peering is not required.

For local FabricPool capacity tiers, you must use the system SVM (called "Cluster"), but you have two options for LIF configuration:

- You can use the cluster LIFs.

  In this option, no further LIF configuration is required, but there will be an increase in traffic on the cluster LIFs. Also, the local tier will not be accessible to other clusters.

- You can use data and intercluster LIFs.

  This option requires additional configuration, including enabling the LIFs for the S3 protocol, but the local tier will also be accessible as a remote FabricPool cloud tier to other clusters.

Steps

1. Display the available physical and virtual ports:

   `network port show`

   - When possible, you should use the port with the highest speed for the data network.
   - All components in the data network must have the same MTU setting for best performance.

2. If you are planning to use a subnet name to allocate the IP address and network mask value for a LIF, verify that the subnet exists and has sufficient addresses available:

   `network subnet show`

   Subnets contain a pool of IP addresses that belong to the same layer 3 subnet. Subnets are created by using the `network subnet create` command.

3. Display available IPspaces:

   `network ipspace show`

You can use the default IPspace or a custom IPspace.

4. If you want to use IPv6 addresses, verify that IPv6 is enabled on the cluster:

   `network options ipv6 show`

   If required, you can enable IPv6 by using the `network options ipv6 modify` command.

Decide where to provision new S3 storage capacity

Before you create a new S3 bucket, you must decide whether to place it in a new or existing SVM. This decision determines your workflow.

Choices

- If you want to provision a bucket in a new SVM or an SVM that is not enabled for S3, complete the steps in the following topics.

  Create an SVM for S3

  Create a bucket for S3

  Although S3 can coexist in an SVM with NFS and SMB, you might choose to create a new SVM if one of the following is true:

  - You are enabling S3 on a cluster for the first time.
  - You have existing SVMs in a cluster in which you do not want to enable S3 support.
  - You have one or more S3-enabled-SVMs in a cluster, and you want another S3 server with different performance characteristics. After enabling S3 on the SVM, proceed to provision a bucket.

- If you want to provision the initial bucket or an additional bucket on an existing S3-enabled SVM, complete the steps in the following topic.

  Create a bucket for S3

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