Configure NDMP at the SVM level or the node level

ONTAP 9

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If the backup application supports Cluster Aware Backup (CAB), you can configure NDMP as SVM-scoped at the cluster (admin SVM) level, which enables you to back up all volumes hosted across different nodes of the cluster. Otherwise, you can configure node-scoped NDMP, which enables you to back up all the volumes hosted on that node.

Configure SVM-scoped NDMP

Configure SVM-scoped NDMP overview

If the DMA supports the Cluster Aware Backup (CAB) extension, you can back up all the volumes hosted across different nodes in a cluster by enabling SVM-scoped NDMP, configuring a backup user account, and configuring LIFs for data and control connection.

What you'll need

The CAB extension must be supported by the DMA.

Enable SVM-scoped NDMP on the cluster

You can configure SVM-scoped NDMP on the cluster by enabling SVM-scoped NDMP mode and NDMP service on the cluster (admin SVM).

About this task

Turning off node-scoped NDMP mode enables SVM-scoped NDMP mode on the cluster.

Steps

1. Enable SVM-scoped NDMP mode by using the `system services ndmp` command with the `node-scope-mode` parameter.

```
cluster1::> system services ndmp node-scope-mode off
NDMP node-scope-mode is disabled.
```

2. Enable NDMP service on the admin SVM by using the `vserver services ndmp on` command.

```
cluster1::> vserver services ndmp on -vserver cluster1
```

The authentication type is set to `challenge` by default and plaintext authentication is disabled.

For secure communication, you should keep plaintext authentication disabled.

3. Verify that NDMP service is enabled by using the `vserver services ndmp show` command.

```
cluster1::> vserver services ndmp show

Vserver       Enabled   Authentication type
------------- --------- -------------------
cluster1      true      challenge
vs1           false     challenge
```

Configure a backup user for the cluster

To authenticate NDMP from the backup application, you must create a local backup user, or an NIS or LDAP user for the cluster with the admin or backup role, and generate an NDMP password for the backup user.

What you'll need

If you are using an NIS or LDAP user, the user must be created on the respective server. You cannot use an Active Directory user.

Steps

1. Create a backup user with the `admin` or `backup` role by using the `security login create` command.

   You can specify a local backup user name or an NIS or LDAP user name for the `-user-or-group-name` parameter.

   The following command creates the backup user backup_admin1 with the `backup` role:

```
cluster1::> security login create -user-or-group-name backup_admin1
-application ssh
-authmethod password -role backup

Please enter a password for user 'backup_admin1':
Please enter it again:
```

2. Generate a password for the admin SVM by using the `vserver services ndmp generate password` command.

   The generated password must be used to authenticate the NDMP connection by the backup application.

```
cluster1::> vserver services ndmp generate-password -vserver cluster1
-user backup_admin1

 Vserver: cluster1
    User: backup_admin1
Password: qG5CqQHYxw7tE57g
```

Configure LIFs

You must identify the LIFs that will be used for establishing a data connection between the data and tape resources, and for control connection between the admin SVM and the backup application. After identifying the LIFs, you must verify that firewall and failover policies are set for the LIFs, and specify the preferred interface role.

Steps

1. Identify the intercluster, cluster-management, and node-management LIFs by using the `network interface show` command with the `-role` parameter.

   The following command displays the intercluster LIFs:

```
cluster1::> network interface show -role intercluster

            Logical           Status     Network            Current
Current Is
Vserver     Interface         Admin/Oper Address/Mask       Node
Port    Home
----------- ----------        ---------- ------------------
------------ ------- ----
cluster1    IC1               up/up      192.0.2.65/24      cluster1-1
e0a     true
cluster1    IC2               up/up      192.0.2.68/24      cluster1-2
e0b     true
```

   The following command displays the cluster-management LIF:

```
cluster1::> network interface show -role cluster-mgmt

            Logical           Status     Network            Current
Current Is
Vserver     Interface         Admin/Oper Address/Mask       Node
Port    Home
----------- ----------        ---------- ------------------
------------- ------- ----
cluster1    cluster_mgmt      up/up      192.0.2.60/24      cluster1-2
e0M     true
```

The following command displays the node-management LIFs:

```
cluster1::> network interface show -role node-mgmt

            Logical           Status     Network            Current
Current Is
Vserver     Interface         Admin/Oper Address/Mask       Node
Port    Home
----------- ----------        ---------- ------------------ ------------
------  ------
cluster1    cluster1-1_mgmt1  up/up      192.0.2.69/24      cluster1-1
e0M     true
            cluster1-2_mgmt1  up/up      192.0.2.70/24      cluster1-2
e0M     true
```

2. Ensure that the firewall policy is enabled for NDMP on the intercluster, cluster-management (cluster-mgmt), and node-management (node-mgmt) LIFs:
   a. Verify that the firewall policy is enabled for NDMP by using the `system services firewall policy show` command.

      The following command displays the firewall policy for the cluster-management LIF:

```
cluster1::> system services firewall policy show -policy cluster

Vserver     Policy       Service    Allowed
-------     ------------ ---------- -----------------
cluster     cluster      dns        0.0.0.0/0
                         http       0.0.0.0/0
                         https      0.0.0.0/0
                        ** ndmp       0.0.0.0/0**
                         ndmps      0.0.0.0/0
                         ntp        0.0.0.0/0
                         rsh        0.0.0.0/0
                         snmp       0.0.0.0/0
                         ssh        0.0.0.0/0
                         telnet     0.0.0.0/0
10 entries were displayed.
```

The following command displays the firewall policy for the intercluster LIF:

```
cluster1::> system services firewall policy show -policy intercluster

Vserver     Policy       Service    Allowed
-------     ------------ ---------- -------------------
cluster1    intercluster dns        -
                         http       -
                         https      -
                         **ndmp       0.0.0.0/0, ::/0**
                         ndmps      -
                         ntp        -
                         rsh        -
                         ssh        -
                         telnet     -
9 entries were displayed.
```

The following command displays the firewall policy for the node-management LIF:

```
cluster1::> system services firewall policy show -policy mgmt

Vserver     Policy       Service    Allowed
-------     ------------ ---------- -------------------
cluster1-1  mgmt         dns        0.0.0.0/0, ::/0
                         http       0.0.0.0/0, ::/0
                         https      0.0.0.0/0, ::/0
                         **ndmp       0.0.0.0/0, ::/0**
                         ndmps      0.0.0.0/0, ::/0
                         ntp        0.0.0.0/0, ::/0
                         rsh        -
                         snmp       0.0.0.0/0, ::/0
                         ssh        0.0.0.0/0, ::/0
                         telnet     -
10 entries were displayed.
```

b. If the firewall policy is not enabled, enable the firewall policy by using the `system services firewall policy modify` command with the `-service` parameter.

   The following command enables firewall policy for the intercluster LIF:

```
cluster1::> system services firewall policy modify -vserver cluster1
-policy intercluster -service ndmp 0.0.0.0/0
```

3. Ensure that the failover policy is set appropriately for all the LIFs:

   a. Verify that the failover policy for the cluster-management LIF is set to `broadcast-domain-wide`, and the policy for the intercluster and node-management LIFs is set to `local-only` by using the `network interface show -failover` command.

      The following command displays the failover policy for the cluster-management, intercluster, and node-management LIFs:

```
cluster1::> network interface show -failover

           Logical            Home               Failover
Failover
Vserver    Interface          Node:Port          Policy
Group
---------- -----------------  ------------------ --------------------
--------
cluster    cluster1_clus1     cluster1-1:e0a     local-only
cluster
                                                     Failover
Targets:
                                                     .......

**cluster1   cluster_mgmt       cluster1-1:e0m     broadcast-domain-
wide Default**
                                                     Failover
Targets:
                                                     .......
           **IC1                 cluster1-1:e0a     local-only
Default**
                                                     Failover
Targets:
           **IC2                 cluster1-1:e0b     local-only
Default**
                                                     Failover
Targets:
                                                     .......
**cluster1-1 cluster1-1_mgmt1   cluster1-1:e0m     local-only
Default**
                                                     Failover
Targets:
                                                     ......
**cluster1-2 cluster1-2_mgmt1   cluster1-2:e0m     local-only
Default**
                                                     Failover
Targets:
                                                     ......
```

b. If the failover policies are not set appropriately, modify the failover policy by using the `network interface modify` command with the `-failover-policy` parameter.

```
cluster1::> network interface modify -vserver cluster1 -lif IC1
-failover-policy local-only
```

4. Specify the LIFs that are required for data connection by using the `vserver services ndmp modify` command with the `preferred-interface-role` parameter.

```
cluster1::> vserver services ndmp modify -vserver cluster1 -preferred
-interface-role intercluster,cluster-mgmt,node-mgmt
```

5. Verify that the preferred interface role is set for the cluster by using the `vserver services ndmp show` command.

```
cluster1::> vserver services ndmp show -vserver cluster1

                            Vserver: cluster1
                       NDMP Version: 4
                       .......
                       .......
            Preferred Interface Role: intercluster, cluster-mgmt, node-
mgmt
```

Configure node-scoped NDMP

Enable node-scoped NDMP on the cluster

You can back up volumes hosted on a node by enabling node-scoped NDMP, setting up the password for the root user, and configuring a LIF for data and control connection.

You can configure node-scoped NDMP by enabling node-scoped NDMP on the cluster and NDMP service on all nodes of the cluster. You must also configure the `root` user for NDMP when enabling the NDMP service.

Steps

1. Enable node-scoped NDMP mode by using the `system services ndmp` command with the `node-scope-mode` parameter.

```
cluster1::> system services ndmp node-scope-mode on
NDMP node-scope-mode is enabled.
```

2. Enable NDMP service on all nodes in the cluster by using the `system services ndmp on` command.

   Using the wildcard “*” enables NDMP service on all nodes at the same time.

   You must specify a password for authentication of the NDMP connection by the backup application.

```
cluster1::> system services ndmp on -node *

Please enter password:
Confirm password:
2 entries were modified.
```

3. Disable the `-clear-text` option for secure communication of the NDMP password by using the `system services ndmp modify` command.

   Using the wildcard "*" disables the `-clear-text` option on all nodes at the same time.

```
cluster1::> system services ndmp modify -node * -clear-text false
2 entries were modified.
```

4. Verify that NDMP service is enabled and the `-clear-text` option is disabled by using the `system services ndmp show` command.

```
cluster1::> system services ndmp show
Node                  Enabled   Clear text  User Id
--------------------- --------- ----------- ---------
cluster1-1            true      false        root
cluster1-2            true      false        root
2 entries were displayed.
```

Configure a LIF

You must identify a LIF that will be used for establishing a data connection and control connection between the node and the backup application. After identifying the LIF, you must verify that firewall and failover policies are set for the LIF.

Steps

1. Identify the intercluster LIF hosted on the nodes by using the `network interface show` command with the `-role` parameter.

```
cluster1::> network interface show -role intercluster

            Logical    Status     Network            Current
Current Is
Vserver     Interface  Admin/Oper Address/Mask       Node          Port
Home
----------- ---------- ---------- ------------------ -------------
------- ----
cluster1    IC1        up/up      192.0.2.65/24      cluster1-1    e0a
true
cluster1    IC2        up/up      192.0.2.68/24      cluster1-2    e0b
true
```

2. Ensure that the firewall policy is enabled for NDMP on the intercluster LIFs:
   a. Verify that the firewall policy is enabled for NDMP by using the `system services firewall policy show` command.

      The following command displays the firewall policy for the intercluster LIF:

      ```
      cluster1::> system services firewall policy show -policy intercluster

      Vserver     Policy       Service    Allowed
      -------     ------------ ---------- -------------------
      cluster1    intercluster dns        -
                               http       -
                               https      -
                               **ndmp       0.0.0.0/0, ::/0**
                               ndmps      -
                               ntp        -
                               rsh        -
                               ssh        -
                               telnet     -
      9 entries were displayed.
      ```

   b. If the firewall policy is not enabled, enable the firewall policy by using the `system services firewall policy modify` command with the `-service` parameter.

      The following command enables firewall policy for the intercluster LIF:

      ```
      cluster1::> system services firewall policy modify -vserver cluster1
      -policy intercluster -service ndmp 0.0.0.0/0
      ```

3. Ensure that the failover policy is set appropriately for the intercluster LIFs:

a. Verify that the failover policy for the intercluster LIFs is set to `local-only` by using the `network interface show -failover` command.

```
cluster1::> network interface show -failover
            Logical          Home               Failover     Failover
Vserver     Interface        Node:Port          Policy       Group
--------    ---------------  -----------------  ------------ --------
cluster1    **IC1               cluster1-1:e0a    local-only
Default**
                                                    Failover Targets:
                                                    .......
            **IC2               cluster1-2:e0b    local-only
Default**
                                                    Failover Targets:
                                                    .......
cluster1-1  cluster1-1_mgmt1 cluster1-1:e0m    local-only    Default
                                                    Failover Targets:
                                                    .......
```

b. If the failover policy is not set appropriately, modify the failover policy by using the `network interface modify` command with the `-failover-policy` parameter.

```
cluster1::> network interface modify -vserver cluster1 -lif IC1
-failover-policy local-only
```