SAN Volume Controller RemoteCopy

Introduction

The SVC Remote Copy feature allows for the creation of a remote virtual disk that is identical to the source virtual disk. Whatever data is added to the source virtual disk will also be added to the remote virtual disk. To ensure that both of the virtual disks contain identical data they are maintained together in a **synchronous** relationship. The SVC supports Remote Copy between virtual disks within a cluster or outside of a cluster. Normally, the **master** and **auxiliary** disks will be on different SVC clusters, but for the purposes of this lab, they will be on the same SVC cluster. The master and auxiliary disks MUST be the same capacity. (The Master disk is the origin, and the auxiliary disk is the target.) Same as FlashCopy, Remote Copy allows for mappings within a consistency group. During the remote copy operation, the auxiliary disk is not accessible for application I/O other than the I/O that is performed for the remote copy process and should not be mapped to the host.

   For example, a customer has two buildings, each with the SVC. Remote Copy can be used to mirror one virtual disk (the master or source disk) from the SVC in building 1 to a virtual disk (the auxiliary or target disk) in the SVC in building 2. Where FlashCopy is a 'point in time' copy, Remote Copy is synchronized. Thus anytime something changes on the master disk in building 1, the Remote Copy feature will automatically update the auxiliary disk in the SVC in building 2.

In this lab, you learn how to use the Remote Copy feature. You will:

- Map the master disk to the host
- Create a Remote Copy Consistency Group
- Create a Remote Copy Relationship.
- Start the Remote Copy.
- Add files to the master disk.
- Stop the Remote Copy.
- Delete the Remote Copy.
- Map the auxiliary disk to the host
- Verify that the files you added to the master disk are now on the auxiliary disk.

Instructions

The first task is to map the source disk to the host.

1. Click 'Work with Virtual Disks' from the menu on the left of the browser window.
2. Click the 'Virtual Disks' link from the Work with Virtual Disks submenu.

Since you want to see all virtual disks, bypass the filter.

---

3. Click the 'Bypass Filter' button.

Select the master (or source) disk you want to map to the host.

4. Click the radio button to the left of 'svc2RcopyVSrc'.
5. Use the drop down menu to select 'Map a VDisk to a host'.
6. Click the 'Go' button.

Select the host to which you want to map the master (source) disk.

7. Click 'W2k1' from the Target Host column.
8. Click the 'OK' button.

Now that you have mapped the source disk to the host, the next step is to create the Remote Copy Consistency Group. Return to the SVC welcome screen to perform the next steps.

9. Click the white X in the blue box in top right corner of the Vdisks window.

Consistency Groups are created to eliminate difficulties while copying. They do this by making sure the attributes for all the disks in the Consistency Group are the same. Follow the directions to create the Remote Copy Consistency Group.

10. Click 'Manage Copy Services' on the menu on the left.
11. Click the 'Remote Copy Consistency Groups' link under Manage Copy Services.

Since you are going to create a Remote Copy Consistency Group, bypass the filter.

12. Click the 'Bypass Filter' button.

Since you want to Create a consistency group, click Go.

13. Click the 'Go' button.

Select the name of the Remote Copy Consistency Group.

14. In the RCCGroup Name field, type 'svc2RCgrp'.
15. Click the 'OK' button.

You can see the Remote Copy Consistency Group you created now listed with a status of Empty. Now that the Remote Copy Consistency Group is created, the next step is to create the Remote Copy Relationship.

16. Click the white X in the blue box in the top right corner of the Remote Copy Consistency Groups window.

The Remote Copy Relationship identifies the master (source) and auxiliary (target) disks for the Remote Copy procedure. Follow the directions to create the Remote Copy Relationship.

17. Click 'Manage Copy Services' from the menu on the left.
18. Click 'Remote Copy Relationships' from the Manage Copy Services submenu.

Since you are going to create a Remote Copy Relationship, bypass the filter.

19. Click the 'Bypass Filter' button.

Since you want to Create a relationship, click Go.

20. Click the 'Go' button.

This brings up the Create a Remote Copy Relationship wizard. Follow the steps to create the Remote Copy Relationship.

21. Click the 'Next' button.

Type the name of the Remote Copy Relationship.

22. In the Type the name of the remote copy relationship field, type 'svc2RCrelation'.
23. Click the 'Next' button.

When the list of master candidates is long, you can use the filter to shorten the list. In this case, there is no need to use the filter.

24. Click the 'Next' button.

Select the master or source disk for the Remote Copy.

25. Select the radio button next to svc2RcopyVSrc.
26. Click the 'Next' button.

Select the auxiliary or target disk for the Remote Copy.

27. Click the radio button to the left of svc2RcopyVtgt.
28. Click the 'Next' button.

Specify the synchronization, Consistency Group and priority for the Remote Copy Relationship on this screen.

29. Uncheck the Synchronized box.
30. From the Consistency Group drop down menu, select 'svc2Rcgrp'.
31. Do not select any value for Priority.
32. Click the 'Next' button.

Verify that the information for the remote copy relationship is correct. Once again, please note that for most remote copy operations, the master and auxiliary disks would be on different SVC clusters. However, for the purposes of this lab, the master and auxiliary disks are on the same local cluster.

33. Click the 'Finish' button.

You can see the Remote Copy Relationship you created, showing the master disk, auxiliary disk and the Remote Copy Consistency Group (RC Group Name). Now that both the Remote Copy Consistency Group and Remote Copy Relationship are created, it is time to start the Remote Copy operation.

34. Click the white X in the blue box in the top right corner of the Remote Copy Consistency Groups window.

Follow the directions to start the Remote Copy.

35. Click 'Manage Copy Services' from the menu on the left.
36. Click 'Remote Copy Relationships' from the Manage Copy Services submenu.

Since you want to display all Remote Copy Relationships, bypass the filter.

37. Click the 'Bypass Filter' button.

Select the Remote Copy Relationship you want to start.

38. Click the radio button next to svc2RCrelation.
39. Use the drop down menu to select 'Start a remote copy'.
40. Click the 'Go' button.

Choose the copy direction and click **OK** to start the Remote Copy.

41. Click the radio button next to Master -> Auxiliary (primary = master)
42. Click the 'OK' button

Now that you have started the relationship it will begin to synchronize. You can see in the status column that the relationship is Inconsistent Copying. Once the Remote Copy is synchronized the status column will read Consistent Synchronized.
43. Click the right scroll button to view the Status column.

Now that you have started the Remote Copy, you must move to the Windows 2000 server for the next portion of this lab.

The Remote Copy has started and is now synchronized. The next step is to add some files to master or source disk. With the Remote Copy feature started, any files you add to the master disk will also be copied to the auxiliary disk.

44. Right click the 'My Computer' icon.
45. Click on 'Manage'.

Access the Disk Management screen to verify that the source disk was properly mapped to the host.

46. Click on 'Disk Management' under Storage on the left hand side of the Computer Management window.
47. Click twice on the scroll down arrow in lower right portion of the window to view R: source disk.
48. Double click 'My Computer'.

As you can see, your source disk is empty.

49. Double click on 'New Volume (R:)' in the My Computer window.
50. Double click on 'My Computer' on the desktop.
51. Double click on 'Local Disk (C:)'.

Now copy the SDD and Temp folders onto the source disk.

52. Right click the 'SDD' folder and choose 'Copy'.
53. Click the 'New Volume (R:)' window to bring it into focus.
54. Right click the white area and choose 'Paste'.
55. Click on the 'Local Drive' window to bring it into focus.
56. Right click the 'Temp folder' and choose 'Copy'.
57. Click the 'New Volume R: window again to bring it back into focus.
58. Right click in the white area of the 'New Volume (R:)' window and choose 'Paste'.
59. Close the 'New Volume (R:)' window by clicking the X in the upper right corner.

60. Close the 'Local Disk (C:)' window by clicking the X in the upper right corner.

Open the R: drive to see the SDD and Temp folders are now present on the source disk.

61. Double click on 'My Computer'.
62. Double click on 'New Volume (R:)'.

You can now see the source disk contains the SDD and Temp folders. To verify that the Remote Copy feature has worked, you must return to the SVC, stop the Remote Copy and then map the auxiliary disk to the host.

Begin by stopping the Remote Copy process.

63. Click 'Manage Copy Services' from the menu on the left of the browser window.
64. Click the 'Remote Copy Relationships' link from the Manage Copy Services submenu.

Since you want to see all Remote Copy Relationships, bypass the filter.

65. Click the 'Bypass Filter' button.

Select the Remote Copy Relationship to stop it.

66. Click the radio button next to svc2RCrelation .
67. Select 'Stop a remote copy' from the drop down menu.
68. Click the 'Go' button.

This screen verifies that you want to stop the Remote Copy. Click OK to stop the Remote Copy.

69. Click the 'OK' button.

The next step is to Delete the remote copy relationship.

70. Select 'Delete a relationship' from the drop down menu.
71. Click the 'Go' button.

This screen verifies that you want to delete the Remote Copy Relationship. Click OK to delete the relationship.

72. Click the 'OK' button.

The relationship cannot be deleted as it is part of a Consistency Group and therefore not a stand-alone relationship. You thus have to check the box to remove the relationship from the Consistency Group before deleting it.

73. Click the checkbox next to 'Remove the Relationship Copy Relationship from its Consistency Group before deleting'.
74. Click the 'OK' button.

The next step is to map the auxiliary disk to the host.

75. Click the white X in the blue box in the top right corner of the Remote Copy Consistency Groups window.

Map the auxiliary disk to the host.

76. Click 'Work with Virtual Disks' from the menu on the left.
77. Click 'Virtual Disks' from the Work with Virtual Disks submenu.

Since you want to see all virtual disks, bypass the filter.

78. Click the 'Bypass Filter' button.

Select the auxiliary (or target) disk to map to the host.

79. Click the radio button to the left of 'svc2RcopyVtgt'.
80. Use the drop down menu to select 'Map a VDisk to a host'.
81. Click the 'Go' button.

Select the host to which you want to map the auxiliary (target) disk.

82. Click 'W2k1' from the Target Host column.
83. Click the 'OK' button.

Now that you have mapped the auxiliary disk to the host, you must move to the Windows 2000 server for the next portion of this lab.

The final step is to verify that the SDD and Temp folders were copied to the auxiliary disk.

84. Right click the 'My Computer' icon.
85. Click on 'Manage'.
86. Click on 'Disk Management' under Storage on the left hand side of the Computer Management window.
87. Click twice on the scroll down arrow in lower right portion of the window to view the RcopySrc (R:) source disk.

Rescan the disks to see the auxiliary disk.

88. Click 'Action' from the Menu bar at the top of the Computer Management window.
89. Click 'Rescan Disks'.
90. Close the Computer Management Window by clicking the X.

The auxiliary disk for the Remote Copy procedure is the **New Volume (S:)** disk. Double click on the **New Volume (S:)** to verify that the SDD and Temp folders were copied onto the disk.

91. Double click 'My Computer'.
92. Double click on 'New Volume (S:)'.

As you can see, the SDD and Temp folders are on the auxiliary disk.

Congratulations, you have completed this lab.