

NEC clustering best practices

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How to manage an NEC ExpressCluster system (Best Practices)

Procedure Steps

- 1) Ensure a backup schedule is in place for a full backup using SQL Enterprise Manager. Run the backup when the server is at its lowest level of use at least on a weekly basis, or daily, if possible.
- 2) Read the system and application event logs via the Windows Event Viewer. Click the Start button, then select **Control Panel > Administrative Tools > Event Viewer**. This can be helpful in foreseeing problems with the servers.
- 3) To prevent the disruption of communication between the servers: Whenever maintenance is to be performed on network hardware on any of the legs connecting the primary and secondary servers, it is imperative to notify the administrator of the clustered servers before performing the maintenance so that the secondary and/or primary server can be isolated from the cluster. (Typically, the server to be isolated would be the server acting as the secondary at the time of the maintenance.)
- 4) The server acting as the secondary on the cluster should never have the SQL Server services started manually unless it is isolated from the cluster.
- 5) Failover of the cluster from the acting primary to the acting secondary should not be done under normal circumstances unless you are sure the mirror between the servers is in sync.
- 6) The OnGuard and SQL Server services should be set to "Manual" start because the cluster service scripts will start the services when they start.
- 7) Ensure the network connections between the servers are made as stable as possible to avoid issues with operating the clustered servers. A possible scenario would be: If one or more network connections is lost for even the most brief period of time, the system could failover to the secondary server, and then, after the connection restores, both servers would consider themselves to be the primary server causing a shutdown command to be sent, and one or both servers might then shut down.

Precautions for isolating servers

When performing "Isolate from cluster", the isolated server will be in a "restarted after going down" state. In this state, the server is still subject to network partition monitoring. Therefore, when maintenance is required due to a LAN board failure, you need to execute "Isolate from cluster" and modify the startup type of the NEC EXPRESSCLUSTER Server services to "Manual", and then restart the server.

In other words, for software maintenance, isolate the server from the NEC EXPRESSCLUSTER Manager. For hardware maintenance, complete the following steps:

- 1) Isolate the server from the NEC EXPRESSCLUSTER Manager.
- 2) For the server on which "Isolate from cluster" was performed, change the startup type of the NEC EXPRESSCLUSTER Server services to "Manual", and then restart the server.

Precautions for network adapter maintenance

For maintenance, such as modifying network adapter settings, some tools temporarily stop the I/O to the network during maintenance. To use tools which stop or may stop I/O to the network temporarily, you must complete the following steps:

- 1) Modify the startup type of NEC EXPRESSCLUSTER Server services of the server you are maintaining to "Manual."
- 2) From the NEC EXPRESSCLUSTER Manager, shut down the server.
- 3) Restart the server, and then perform the maintenance.
- 4) Modify the startup type of the server's NEC EXPRESSCLUSTER Server services back to "Automatic."
- 5) Restart the server.

Network maintenance

For maintenance such as modifying settings of network adapters, some tools temporarily stop I/O to the network during maintenance. In order to use tools which stop or may stop I/O to the network temporarily, you must follow the steps below:

- 1) Modify the startup type of NEC EXPRESSCLUSTER Server services for the server you are maintaining to "Manual."
- 2) From the NEC EXPRESSCLUSTER Manager, shut down the server.
- 3) Restart the server, and then perform the maintenance.

4) Modify the startup type of the server's NEC EXPRESSCLUSTER Server services back to "Automatic."

5) Restart the server.

Precautions for clock adjustments

To adjust the time of the cluster system, complete the following steps:

1) For the following services, set the startup type to "Manual":

- NEC EXPRESSCLUSTER Server service
- NEC EXPRESSCLUSTER LogCollector service
- NEC EXPRESSCLUSTER MD Agent service

2) Shut down and then restart the cluster.

3) Adjust the clocks so that every server indicates the same time.

4) For any NEC EXPRESSCLUSTER Server services changed to "Manual" startup, change them back to "Automatic."

5) Shut down and restart the system.

Note: When you adjust the clocks, make sure that the applications and database systems are not affected.

Applies To

All NEC ExpressCluster environments

Additional Information

For more information, refer to NEC ExpressCluster documentation at:

<https://www.nec.com/en/global/support/index.html>

Note: The Technical Notes document and the System Administration document are especially of value.