Praveen Madupu +91 98661 30093
Sr SQL Server DBA, Dubai
praveensqldba12@gmail.com

Log shipping in SQL Server involves automating the process of backing up, copying, and restoring transaction logs from a primary server to one or more secondary servers. This setup is used for disaster recovery, reporting, or failover purposes. However, log shipping can run into several issues.

Here are the most common problems, their causes, and detailed resolutions:

1. Log Backup Job Failures

Symptoms:

- Transaction log backups are not being generated.
- The log shipping backup job fails.

Causes:

- The transaction log file is full or corrupted.
- Incorrect permissions on the backup folder or file path.
- Lack of disk space on the primary server or backup location.
- SQL Server Agent is stopped or not running.

Resolutions:

- **Check disk space**: Ensure that there is enough free space on the disk where the transaction log and backup file are stored.
- **Check the log file**: Run `DBCC LOGINFO` to check for issues in the log file and take necessary steps to truncate or shrink the log.
- **Correct permissions**: Verify that the SQL Server service account has read/write permissions on the backup folder.
- **Check SQL Server Agent**: Ensure that the SQL Server Agent is running and that the log backup job is scheduled properly.
- **Verify SQL Server Error Logs**: Look for error messages that could point to the root cause.

2. Copy Job Failures

Symptoms:

- Log backup files are not copied to the secondary server.
- The log shipping copy job fails repeatedly.

Causes:

- Incorrect file path or folder permissions on the secondary server.
- The network connection between primary and secondary servers is down or slow.
- Lack of disk space on the secondary server.

Praveen Madupu +91 98661 30093
Sr SQL Server DBA, Dubai
praveensqldba12@gmail.com

- Anti-virus software blocking the file transfer.

Resolutions:

- **Check file path and permissions**: Ensure that the path where the log backups are copied has correct permissions, and the SQL Server Agent account on the secondary server has access to that folder.
- **Monitor network connectivity**: Use `ping` or `tracert` commands to troubleshoot network issues. Fix any issues with network latency or connectivity.
- **Verify disk space**: Make sure there is sufficient disk space on the secondary server to receive log backups.
- **Exclude folders from anti-virus scans**: Disable or configure the anti-virus software to exclude the folder where transaction log backups are stored and copied.

3. Restore Job Failures

Symptoms:

- Transaction logs are not being restored on the secondary server.
- The log shipping restore job fails.

Causes:

- The transaction log backup file is corrupted or missing.
- Incorrect restore options (e.g., attempting to restore logs on a database in read-write mode instead of standby or no-recovery mode).
- Disk space on the secondary server is insufficient.
- Permissions issues on the secondary server.

Resolutions:

- **Check backup file integrity**: Use the `RESTORE VERIFYONLY` command on the backup files to ensure they are not corrupted.
- **Correct database state**: Verify that the secondary database is in the proper recovery mode (`NORECOVERY` or `STANDBY`) for log shipping to work.
- **Monitor disk space**: Ensure there is enough disk space on the secondary server to restore the transaction logs.
- **Reinitialize secondary database**: If necessary, restore a full backup manually and reinitialize the log shipping setup.

Praveen Madupu +91 98661 30093
Sr SQL Server DBA, Dubai
praveensqldba12@gmail.com

4. Out-of-Sync Databases

Symptoms:

- The secondary database is lagging behind the primary database.
- Log backups are being generated but not restored in a timely manner.

Causes:

- Delay in copy or restore jobs due to network latency or server resource limitations.
- Large transaction log file sizes leading to long restore times.
- Misconfigured log shipping threshold settings (e.g., low alert thresholds for backup, copy, or restore delays).

Resolutions:

- **Check job history**: Monitor the history of the log shipping jobs and check for any delays in the backup, copy, or restore process.
- **Tune network performance**: Address any network performance issues by tuning network configurations or upgrading network bandwidth.
- **Adjust job frequency**: Increase the frequency of the log backup and restore jobs to minimize the time between backups and restores.
- **Reconfigure log shipping threshold**: Increase the alert thresholds for backup, copy, and restore operations to allow more flexibility, but make sure this doesn't affect the overall RPO (Recovery Point Objective).

5. Transaction Log is Full

Symptoms:

- The primary database stops responding because the transaction log is full.
- Log backups stop being generated because the transaction log cannot be truncated.

Causes:

- Long-running transactions that prevent the transaction log from truncating.
- Log backups are not being applied fast enough, causing the log to grow.
- Incorrect recovery model configuration on the primary database.

Resolutions:

- **Identify long-running transactions**: Use `DBCC OPENTRAN` to identify any long-running transactions, and resolve them appropriately.
- **Perform regular log backups**: Make sure log backups are scheduled and running frequently enough to prevent the log file from growing too large.

Praveen Madupu +91 98661 30093
Sr SQL Server DBA, Dubai
praveensqldba12@gmail.com

- **Check recovery model**: Ensure that the database is in the `FULL` recovery model and not in `SIMPLE` (log shipping only works with the `FULL` recovery model).
- **Increase log file size**: If necessary, increase the size of the transaction log file to handle high workloads.

6. Log Shipping Monitor Shows Errors

Symptoms:

- Errors or warnings appear in the log shipping monitor.
- Jobs seem to be running, but the monitor shows failures or lag.

Causes:

- Incorrectly configured monitor database.
- Miscommunication between the primary, secondary, and monitor servers.
- Time zone or time synchronization issues between servers.

Resolutions:

- **Reconfigure monitor database**: Ensure the monitor database is set up correctly, and that all necessary jobs and alerts are functioning.
- **Sync server times**: Use `NET TIME` or a similar utility to make sure that the primary, secondary, and monitor servers are synchronized in terms of system time.
- **Review job history**: Check the job history of all log shipping jobs to ensure they are running as expected and without significant delays.

7. Log Shipping Configuration or Job Corruption

Symptoms:

- Log shipping stops working entirely.
- Configuration settings seem to be lost or corrupted.

Causes:

- SQL Server Agent jobs or log shipping configuration metadata is corrupted.
- Manual intervention or accidental deletion of jobs or settings.

Resolutions:

- **Recreate log shipping jobs**: Drop and recreate the log shipping configuration, ensuring that all jobs are recreated properly.
- **Check system catalogs**: Query system tables like `msdb.dbo.log_shipping_monitor_primary` or `msdb.dbo.log_shipping_monitor_secondary` to confirm that the configuration is correct.

Praveen Madupu +91 98661 30093
Sr SQL Server DBA, Dubai
praveensqldba12@gmail.com

- **Review SQL Server Error Logs**: Check the SQL Server error logs and the event viewer for any signs of configuration corruption or issues.

8. Log Shipping Alert Thresholds Triggering Too Frequently

Symptoms:

- Frequent alert emails or messages indicating that log shipping is falling behind.

Causes:

- Alert thresholds for log backup, copy, or restore latency are set too low.
- Network or system performance issues cause temporary lags in the log shipping process.

Resolutions:

- **Increase alert thresholds**: Reconfigure the alert thresholds in the log shipping settings to allow for more delay before triggering an alert.
- **Tune server performance**: If the delay is consistent, check and address any performance bottlenecks on either the primary or secondary server.

Summary:

Log shipping in SQL Server is a robust solution for high availability and disaster recovery, but like any system, it can experience issues.

The key to resolving log shipping problems is careful monitoring, troubleshooting network and system performance, and ensuring the SQL Server configuration is set up properly.

Regularly reviewing job histories and logs will help prevent and resolve common log shipping issues.