Comprehensive SQL Server Post-Installation Checklist to ensure that the SQL Server instance is configured properly and ready for production use:

1. System and Service Validation

Task	Description	Completed
Verify SQL Server Services	Ensure all necessary SQL Server services (Database Engine, Agent, Browser, etc.) are running and set to the correct startup type (Automatic/Manual as needed).	☐
Check SQL Server Edition	Confirm that the correct edition of SQL Server (Standard, Enterprise, etc.) is installed.	☐
Apply Latest Service Packs/CUs	Check for and apply the latest service packs or cumulative updates.	☐
Configure Service Accounts	Ensure SQL Server services are running under appropriate domain or local service accounts (not default SYSTEM accounts).	☐

2. Security and Authentication Configuration

Task	Description	Completed
Enable Mixed Mode Authentication	If required, enable SQL Server Authentication (Mixed Mode). Ensure a strong password is set for the `sa` account and disable it if not needed.	☐
Add Required Logins	Add necessary SQL Server logins for administrators and application accounts.	☐
Configure Server Roles	Assign appropriate server roles (e.g., sysadmin, securityadmin) to the logins.	☐
Set Database-Level Permissions	Set appropriate permissions for user databases (db_owner, db_datareader, db_datawriter, etc.).	☐
Enable Transparent Data Encryption (TDE)	Enable TDE if the server handles sensitive data.	☐

3. Storage and Database Configuration

Task	Description	Completed
Configure TempDB	Configure TempDB with multiple data files (equal in size) and place it on a fast disk for improved performance.	☐
Set Data and Log File Locations	Ensure database data (.mdf) and log (.ldf) files are stored on separate drives for performance and reliability.	☐
Pre-size Database Files	Pre-size the database files to avoid frequent autogrowth events.	☐
Configure Autogrowth Settings	Set appropriate autogrowth settings (e.g., in MB rather than percentages) to avoid performance issues.	☐

4. Backup and Recovery Configuration

Task	Description	Completed
Set Recovery Model	Set the appropriate recovery model (Full, Simple, or Bulk-Logged) based on the business requirements and data retention needs.	☐
Create Backup Jobs	Schedule regular database backups (full, differential, and transaction log) using SQL Server Agent Jobs or third-party tools.	☐
Test Backup/Restore	Test backups and validate the restore process to ensure disaster recovery.	☐

5. Performance Tuning and Monitoring

Task	Description	Completed
Configure Max Degree of Parallelism (MAXDOP)	Set the MAXDOP value based on CPU configuration and workload type (general recommendation is to set to the number of physical cores or limit it for OLTP systems).	☐
Set Minimum and Maximum Memory	Configure minimum and maximum server memory settings to prevent SQL Server from consuming too much memory and starving the OS.	☐
Enable Instant File Initialization	Enable Instant File Initialization to speed up the process of file growth for data files (not log files).	☐
Enable Lock Pages in Memory	Enable "Lock Pages in Memory" to prevent paging of SQL Server's working set (for systems with large memory).	☐
Review SQL Server Error Logs	Check the error logs for any warning or error messages after installation.	☐
Enable Query Store	Enable the Query Store to track query performance and execution plans over time.	☐

6. Maintenance Jobs Configuration

Task	Description	Completed
Create Index Maintenance Jobs	Set up regular index maintenance jobs (rebuild/reorganize) to maintain optimal performance.	☐
Set Up Database Integrity Checks	Schedule jobs to regularly check database integrity (using `DBCC CHECKDB`).	☐
Set Up Statistics Update Jobs	Schedule jobs to regularly update statistics to keep query plans accurate.	☐
Monitor Disk Space Usage	Set up monitoring or alerts for disk space usage on the data and log file drives.	☐

7. Alerts and Monitoring

Task	Description	Completed
Configure Database Mail	Set up and test Database Mail for sending alerts and notifications.	☐
Set Up SQL Server Alerts	Configure alerts for critical errors (e.g., Severity 16 and above) to notify administrators.	☐
Monitor CPU, Memory, and Disk I/O	Set up monitoring for CPU, memory, and disk I/O usage using tools like SQL Server Performance Monitor (PerfMon) or third-party monitoring solutions.	☐
Monitor Blocked Processes	Enable monitoring for blocked processes to catch locking and blocking issues.	☐

8. High Availability and Disaster Recovery (if applicable)

Task	Description	Completed
Configure Database Mirroring / Always On Availability Groups	Set up high availability using Database Mirroring or Always On Availability Groups for failover clustering.	☐
Set Up Log Shipping	Configure log shipping to create a warm standby database for disaster recovery.	☐
Test Failover	Perform failover tests to validate high availability configurations.	☐

9. Additional Configuration

Task	Description	Completed
Install Required SQL Server Tools	Ensure SSMS (SQL Server Management Studio), SQL Server Data Tools (SSDT), and other necessary client tools are installed.	☐
Set Up Linked Servers	Set up linked servers if SQL Server needs to connect to other instances or external databases.	☐
Install and Configure SSRS/SSAS/SSIS	If needed, configure SQL Server Reporting Services (SSRS), Analysis Services (SSAS), and Integration Services (SSIS).	☐

This checklist covers most aspects of post-installation configuration, helping ensure a well-tuned, secure, and high-performing SQL Server environment.