END OF SUPPORT PLAYBOOK · SQL SERVER

SQL Server 2016 end of support: upgrade, migrate or extend

SQL Server 2016 stopped getting regular security updates on 14 July 2026. Choose for each instance between an upgrade, a move to Azure SQL, or Extended Security Updates as a bridge, then upgrade without breaking the applications that use it.

Updated 4 Nov 2026 5 phases 9 detailed steps 8 official sources

START HERE

How does a SQL Server 2016 end of support work?

SHORT ANSWER

This gets every SQL Server 2016 instance onto a supported version. For most, that is a new SQL Server 2025 or 2022 installation (or Azure SQL) with the databases moved across, which keeps the old server as a fallback. ESU buys up to three years of critical security fixes for instances that cannot move yet.

- **Recommended route:** New installation of SQL Server 2025 (side by side) with databases moved by backup and restore
- **Order:** Decide the path per instance first, because ESU and licensing decisions have dates.
- **5 phases:** Inventory and decide, Build and rehearse, Test the applications, Cut over and Finish.
- **You're done when:** No SQL Server 2016 instance is running, or each remaining one is covered by ESU with a dated move.

KEY DATES

14 Jul 2026	SQL Server 2016 support ended: no more regular security updates.	Passed

17 Jul 2029	Extended Security Updates end (Enterprise and Standard only).	Upcoming

The work is testing: applications, logins, jobs, and query performance after the change.

RECOMMENDED ROUTE

New installation of SQL Server 2025 (side by side) with databases moved by backup and restore

The old instance stays untouched as a fallback, you can move to a supported Windows Server at the same time, and downtime is limited to the final backup and restore.

▼ Other options and when to use them

- **In-place upgrade with SQL Server Setup**
  : A non-critical server that can take downtime, already on SQL Server 2016 SP3 and a supported Windows version.
- **Azure SQL Managed Instance**
  : You want Microsoft to run patching and backups, and the applications use SQL Server features Managed Instance supports.
- **Extended Security Updates through Azure Arc**
  : Enterprise or Standard instances with Software Assurance or subscription licences that cannot move before a firm date.

TOOLS FOR THIS PLAN

Are you ready?
22-question readiness check

Plan your dates
Dated countdown you can add to your calendar

Check your DNS
MX, SPF, DKIM and DMARC lookup

New to the jargon?
Plain-English migration glossary

ORDER TO MIGRATE IN, AND WHY

Decide the path per instance first, because ESU and licensing decisions have dates. Then prepare the new server, rehearse with a copy of the databases, and switch applications over in a planned window.

1 **Inventory of instances, editions, versions and the applications that use each**

Edition and service pack decide the upgrade targets, and the application list decides who must test.

2 **Path per instance: upgrade, Azure, or ESU as a bridge**

ESU has eligibility rules and a purchase process, so instances that need it must be identified early.

3 **New server built and rehearsal restore of production databases**

A rehearsal shows how long the backup and restore takes and what breaks, before the real window.

4 **Logins, jobs, linked servers and packages recreated on the new instance**

Microsoft notes these live in master and msdb, so restoring a user database does not bring them.

5 **Application testing and a performance baseline**

The database compatibility level stays the same after the move, so you can test first and raise it later with Query Store watching.

6 **Cutover, then the old instance retired after the fallback period**

Keeping the old server read-only for a short period gives a way back if a missed dependency appears.

SETTINGS CHECKLIST: DECIDE THESE BEFORE YOU COPY

Built-in and third-party tools treat these differently. Tick each one off once you have decided.

Download this checklist (Excel)

- [ ] **Upgrade target and edition**

  SQL Server 2025 or 2022, and which edition.

  ▼ How each tool handles it

Built-in method	SQL Server Setup: SQL Server 2016 SP3 or later upgrades in place to SQL Server 2025; SQL Server 2022 accepts SQL Server 2016. Standard upgrades to Standard or Enterprise, Express to Express, Standard or Enterprise. Web edition is not available in SQL Server 2025 and later, so Web moves to Standard or Enterprise.

  Tip: Check the features each database uses against the target edition before you buy licences.

  Microsoft Learn: Supported version and edition upgrades (SQL Server 2025)

- [ ] **Extended Security Updates**

Which instances, if any, need ESU and for how long.

▼ How each tool handles it

Built-in method	ESU for SQL Server 2016 gives critical security updates for up to three years: year 1 to 13 July 2027, year 2 to 18 July 2028, year 3 to 17 July 2029. It needs Enterprise or Standard with active Software Assurance or subscription licences, or hosting in Azure. Express, Developer and Web are not eligible. Servers outside Azure subscribe through Azure Arc.

Tip: ESU includes no technical support and no new features. Use it to buy time for a dated move, not as the plan.

Microsoft Learn: Lifecycle FAQ, Extended Security Updates for SQL Server

- [ ] **Upgrade method**

In place, new installation, or rolling upgrade.

▼ How each tool handles it

Built-in method	In place replaces the binaries and the old instance no longer exists, and needs some downtime. A new installation keeps the old environment and allows new hardware or a new Windows version. A rolling upgrade suits availability groups and clusters.

Tip: Choose a new installation for anything business-critical; rolling back an in-place upgrade means a full restore.

Microsoft Learn: Choose a Database Engine upgrade method

- [ ] **Server-level objects**

How logins, jobs, triggers and packages get to the new instance.

▼ How each tool handles it

Built-in method	A database move does not carry server-level objects: logins and server triggers are in master, SQL Server Agent jobs and SSIS packages stored in msdb must be recreated or redeployed, and Reporting Services needs its encryption key backed up.

Tip: Script logins, jobs and linked servers from the old instance during the rehearsal, and keep the scripts with the runbook.

Microsoft Learn: Choose a Database Engine upgrade method

- [ ] **Compatibility level and query performance**
  When to raise each database to the new compatibility level.

  ▼ How each tool handles it

  Built-in method After an upgrade, a user database keeps its compatibility level if it was 100 or higher. Microsoft recommends using Query Store, and SSMS includes the Query Tuning Assistant to guide raising the level.

  Tip: Go live on the old compatibility level, capture a week of Query Store data, then raise it in a quiet period.

  Microsoft Learn: Change the database compatibility level and use the Query Store

- [ ] **Moving to Azure SQL Managed Instance**
  Which method, and how much downtime is acceptable.

  ▼ How each tool handles it

  Built-in method Microsoft lists Azure Database Migration Service and the Managed Instance link for minimal or near-zero downtime, Log Replay Service with minimal downtime, and native RESTORE FROM URL, which needs some downtime. From SQL Server 2016, backups go straight to Azure Storage using a SAS credential.

  Tip: Run a migration assessment first; it finds features Managed Instance does not support.

  Microsoft Learn: Migration guide: SQL Server to Azure SQL Managed Instance

THE PLAN, PHASE BY PHASE

1 Inventory and decide — Weeks 1 to 2

List every SQL Server 2016 instance with edition, service pack, size

and the applications using it.

Choose upgrade, Azure, or ESU as a bridge for each instance.

Check licences: target edition licences, and Software Assurance or subscription licences for any ESU.

> ⚠ **Watch out:** ESU is not available for Express, Developer or Web edition.
>
> **WAYS AROUND IT**
>
> - Upgrade those instances first, or move Web edition workloads to Standard.

Show the detail →

2 Build and rehearse Weeks 2 to 4

Install SQL

Server 2025 or 2022 on a supported Windows Server.

Restore copies of the production databases and recreate logins, jobs and linked servers.

Time the backup and restore to size the cutover window.

> **Watch out:** A 32-bit instance cannot be upgraded in place to 64-bit.
>
> **WAYS AROUND IT**
>
> - Back up or detach the databases and restore them on a new 64-bit instance, then recreate logins and objects in master, msdb and model.

Show the detailed steps (3) →

3 Test the applications

Weeks 4 to 6

- Point a test copy of each application at the new instance.
- Run the main business processes and reports with their owners.
- Turn on Query Store and record a performance baseline.

> **Watch out:** Some query plans can change on a newer version.
>
> **WAYS AROUND IT**
>
> - Keep the old compatibility level at go-live, and use Query Store to find and fix regressions before raising it.

Show the detailed steps (2) →

4 Cut over

Planned window

Stop the applications and take a final full backup on the old instance.

Restore on the new instance and run the checks from the rehearsal.

Point applications at the new server by DNS alias or connection string, and start them.

> **Watch out:** A database restored on the new version cannot be restored back on SQL Server 2016.
>
> **WAYS AROUND IT**
>
> - Keep the old instance unchanged and read-only until the fallback period ends.

Turn this phase into dated tasks with the cutover planner

Check your DNS records before and after the change

Show the detailed steps (2) →

5 Finish

After two to four weeks

Raise the compatibility level database by database, watching Query Store.

Take full backups and confirm the backup jobs on the new server.

Decommission the SQL Server 2016 instance and

update your asset register.

> **Watch out:** Full-text catalogues and Integration Services packages need extra steps after the move.
>
> **WAYS AROUND IT**
>
> - Repopulate full-text catalogues and migrate SSIS packages to the new format, as Microsoft lists in its post-upgrade tasks.

Show the detailed steps (2) →

You are finished when

- No SQL Server 2016 instance is running, or each remaining one is covered by ESU with a dated move.
- Applications run on the new instance and their owners have signed off.
- Logins, jobs, linked servers and backups work on the new server.
- Compatibility levels are raised, or a dated plan exists for each database still on the old level.

CLICK BY CLICK

What does each step involve?

Open a part when you reach it in the plan. Each step says where to go, what to do and what you should see.

About this migration

What it covers, limits at a glance −

SQL Server 2016 reached end of support on 14 July 2026. Microsoft no longer provides regular security updates or technical support for it. Microsoft sets out three paths: move to Azure SQL, upgrade to SQL Server 2025, or buy Extended Security Updates (ESU) as a short-term bridge while you plan the move.
This playbook helps you pick a path per instance and run the upgrade: inventory, compatibility checks, the upgrade method, testing with Query Store, and what to recreate by hand when you move to a new server. If the server runs Windows

Server 2016 as well, see Windows Server 2016 end of support, and for a move to Azure, SQL Server to Azure SQL.

SUPPORT ENDED
14 July 2026

ESU
Critical security updates for up to three years, to 17 July 2029, Enterprise and Standard only

UPGRADE TO 2025
In place from SQL Server 2016 SP3 or later

UPGRADE TO 2022
In place from SQL Server 2016

MOVE TO AZURE
Azure SQL Managed Instance, or SQL Server on Azure VMs

NOT POSSIBLE IN PLACE
32-bit to 64-bit, and cross-platform

1 What do you need before you start a SQL Server 2016 end of support?

Need	Details	Where to get it
A list of SQL Server instances	Version, service pack, edition, size, and applications per instance.	SSMS, your inventory tool, or Azure Arc
Licences for the target version	Target edition licences, and for ESU, Software Assurance or subscription licences.	Your Microsoft licensing partner
A new server for side-by-side upgrades	A supported Windows Server version for SQL Server 2025 or 2022.	Your virtualisation platform or Azure
SQL Server Management Studio (SSMS)	For backups, scripting logins and jobs, and the Query Tuning Assistant.	Microsoft Download Center
Application owners and test plans	People who will test each application on the new instance.	Your business teams

2 Choose a path for each instance

Situation	Path	Why
Business-critical, on-premises, staying on-premises	New installation of SQL Server 2025 or 2022, databases restored	Old server stays as a fallback
Non-critical, on SQL Server 2016 SP3 and a supported Windows version	In-place upgrade	Simplest, if downtime is acceptable
You want Microsoft to run patching and backups	Azure SQL Managed Instance	Closest platform service to SQL Server
You need full control of SQL Server and Windows in Azure	SQL Server on Azure Virtual Machines	Same SQL Server, Azure hardware
Cannot move before a firm date, and eligible	ESU through Azure Arc as a bridge	Critical fixes for up to three years

ESU is a bridge. ESU gives critical security updates only: no technical support and no new features, and Express, Developer and Web are not eligible.

3 Build the new instance and rehearse

3 steps

1 Install the new version

Where: The new Windows Server, SQL Server installation media > setup.exe > Installation > New SQL Server stand-alone installation

Install the edition you chose. Microsoft notes setup is blocked if a restart is pending, so restart Windows first.

✓ **You should see:** The new instance starts and SSMS connects to it.

2

Restore a copy of each database

Where: SSMS connected to the old instance, then to the new instance

Take a copy-only full backup on the old instance so the normal backup chain is not affected, copy the file across and restore it on the new instance.

```
BACKUP DATABASE [SalesDb] TO DISK = N'\\fileserver\sqlmove\SalesDb.bak' WITH COPY_ONLY, CHECKSUM;
-- on the new instance
RESTORE DATABASE [SalesDb] FROM DISK = N'\\fileserver\sqlmove\SalesDb.bak' WITH CHECKSUM;
```

✓ **You should see:** Each database restores and comes online. Note how long it took.

3

Recreate server-level objects

Where: SSMS > old instance > Security > Logins, SQL Server Agent > Jobs, Server Objects > Linked Servers

Script logins, jobs, linked servers and server triggers on the old instance and run the scripts on the new one. Redeploy SSIS packages stored in msdb, and back up the Reporting Services encryption key if you use it.

✓ **You should see:** Applications sign in, and jobs show under SQL Server Agent on the new instance.

4 Test applications and performance

2 steps

1

Point test copies at the new instance

Where: Each application's test environment, in its connection settings

Change the server name in the test copy, then have the owner run their main processes and reports. Record anything that fails in the test strategy.

✓ **You should see:** Every application passes its tests, or has a fix agreed.

2

Turn on Query Store

Where: SSMS > the database > Properties > Query Store

Set Operation Mode to Read Write and keep the database on its current compatibility level. Run normal workloads to build a baseline.

```
ALTER DATABASE [SalesDb] SET QUERY_STORE = ON (OPERATION_MODE = READ_WRITE);
```

✓ **You should see:** Query Store reports show queries and their plans.

5 Cut over to the new instance

2 steps −

1

Take the final backup

Where: SSMS connected to the old instance, after stopping the applications

Stop application services so nothing writes to the database, then take a final full backup with checksum.

✓ **You should see:** The backup completes with no errors.

2

Restore and point applications at the new server

Where: SSMS on the new instance, then DNS or each application's connection settings

Restore the final backup, run the checks from the rehearsal, then change the DNS alias or connection strings to the new server and start the applications. Follow the cutover runsheet.

✓ **You should see:** Applications connect to the new instance and owners confirm they work.

6 Finish the upgrade

2 steps

1

Raise the compatibility level

Where: SSMS > the database > right-click > Tasks > Database Upgrade > New Database Upgrade Session (Query Tuning Assistant)

Use the Query Tuning Assistant, or change the level yourself in a quiet period and watch Query Store for regressed queries.

```
ALTER DATABASE [SalesDb] SET COMPATIBILITY_LEVEL = 170; -- SQL Server 2025
```

✓ **You should see:** The database runs at the new level with no regressed queries left.

2

Retire the old instance

Where: The old server

After the fallback period, take a final backup for your records, stop and uninstall SQL Server 2016, and update your asset register.

✓ **You should see:** No SQL Server 2016 instance is running.

WORTH KNOWING

What can go wrong, and how do you avoid it?

The detail behind the plan: options compared, and what experienced engineers check first. Tap any item.

Compare all the ways to do this — 3 options −

New installation (side by side) — MEDIUM EFFORT

Best for: Business-critical instances, or servers that also need a newer Windows version

+ Old instance stays as a fallback
+ New hardware or Windows at the same time
+ Rehearse with real data
– Logins, jobs and packages recreated by hand
– Applications must be pointed at the new server

Read more →

In-place upgrade — LOW EFFORT

Best for: Non-critical instances on SQL Server 2016 SP3 and a supported Windows version

+ Simplest
+ Logins, jobs and settings stay where they are
– Old instance no longer exists
– Rolling back means a full restore
– Needs downtime

Read more →

Move to Azure SQL Managed Instance

HIGH EFFORT

Best for: Teams that want Microsoft to run patching, backups and high availability

+ Minimal-downtime options such as the Managed Instance link
+ No more version upgrades
– Some SQL Server features differ
– Ongoing Azure cost

Read more →

OUR ADVICE

Use a new installation of SQL Server 2025 for anything that matters, an in-place upgrade only for small non-critical instances, and Managed Instance if you want to stop running SQL Server yourself. Buy ESU only for instances with a dated move that falls after the deadline.

Security updates have stopped

REDUCES RISK –

Microsoft no longer provides regular security updates or technical support for SQL Server 2016 since 14 July 2026.

WHAT TO DO

Prioritise internet-facing and business-critical instances, and restrict network access to the rest until they move.

Microsoft SQL Server Blog: SQL Server 2016 end of support is here

Check ESU eligibility before relying on it

COST LEVER –

ESU needs Enterprise or Standard with Software Assurance or subscription licences, or hosting in Azure. Express, Developer and Web cannot have it, and it does not include technical support.

WHAT TO DO

Check each instance's edition and licence before planning to use ESU, and set a move date inside the ESU years you buy.

Microsoft Learn: Lifecycle FAQ, Extended Security Updates for SQL Server

SP3 is needed for an in-place upgrade to 2025

SAVES TIME

SQL Server 2025 accepts in-place upgrades only from SQL Server 2016 SP3 or later.

WHAT TO DO

Check the version with SELECT @@VERSION. Apply SP3 first, upgrade to SQL Server 2022 instead, or use a new installation.

Microsoft Learn: Supported version and edition upgrades (SQL Server 2025)

Web edition, MDS and DQS need a plan

COST LEVER

Web edition is not available from SQL Server 2025, and Master Data Services and Data Quality Services are discontinued in SQL Server 2025.

WHAT TO DO

Move Web edition to Standard, and if you use MDS or DQS, upgrade to SQL Server 2022 or replace them.

Microsoft Learn: Complete the Database Engine upgrade

Logins and jobs do not move with the database

REDUCES RISK

Microsoft notes logins and server triggers live in master, and Agent jobs and SSIS packages in msdb. A backup and restore of user databases leaves them behind.

WHAT TO DO

Script them during the rehearsal and test that applications can sign in before the real cutover.

Microsoft Learn: Choose a Database Engine upgrade method

Raise the compatibility level later, not on day one

PERFORMANCE

The compatibility level stays the same after the move, and some newer behaviour only turns on when you raise it. Raising it can change query plans.

WHAT TO DO

Go live on the old level, capture Query Store data, then raise it with the Query Tuning Assistant.

Microsoft Learn: Change the database compatibility level and use the Query Store

FINISH SAFELY

How do you check it worked, or roll back?

Full validation checklist

5 checks

Run these before you declare the migration complete. Record the results in the data validation report.

Check	How to check	What good looks like
Every instance is on a supported version or covered by ESU	Run `SELECT @@VERSION;` on each instance in your inventory.	No SQL Server 2016 instance remains outside ESU.
Databases are intact	Run `DBCC CHECKDB` on each database after the restore.	CHECKDB reports no errors.
Applications sign in and work	Owners run their test scripts against production on the new instance.	Every application is signed off.
Jobs and backups run	In SSMS, check SQL Server Agent > Job Activity Monitor after the first night.	All jobs, including backups, succeed.
Performance matches the baseline	Compare Query Store top resource-consuming queries with the baseline from testing.	No query is significantly slower, or each has a fix.

Rollback plan

If it goes wrong

ROLL BACK IF

- An application cannot connect or fails its tests after cutover
- A data problem is found in the restored databases

- Performance is unacceptable and cannot be fixed in the window

POINT OF NO RETURN

A database restored on SQL Server 2025 or 2022 cannot be restored back on SQL Server 2016. Once users write new data on the new instance, going back means losing that data or exporting it by hand. Keep the old instance unchanged and decide go or no-go before users start work.

1

Stop the applications

Where: Application servers

Stop the application services so no more data is written to the new instance.

✓ **You should see:** No connections to the new instance.

2

Point applications back at the old instance

Where: DNS alias or each application's connection settings

Change the DNS alias or connection strings back to the SQL Server 2016 server, which still has the data from before the final backup.

✓ **You should see:** Applications connect to the old instance.

3

Record what changed

Where: Your issue log

Note any transactions entered on the new instance during the attempt so they can be re-entered, and log the reason for the rollback.

✓ **You should see:** A clear list of data to re-enter and the fix needed before the next attempt.

Agree the triggers and who decides before the go / no-go meeting. Use the rollback plan template.

Common problems and fixes

5 errors

`Setup blocks the upgrade with a pending restart`

Cause: Windows has a restart pending.

Fix: Restart Windows, then run SQL Server Setup again.

`Upgrade to SQL Server 2025 is not offered`

Cause: The instance is below SQL Server 2016 SP3, or is 32-bit.

Fix: Apply SP3, upgrade to SQL Server 2022, or move databases to a new 64-bit instance.

`Application cannot sign in after the move`

Cause: The login was not recreated on the new instance, or the SQL login SID does not match the database user.

Fix: Script and recreate logins from the old instance, then retest.

`Agent jobs missing on the new server`

Cause: Jobs are stored in msdb and do not move with a user database.

Fix: Script the jobs from the old instance and create them on the new one.

`Queries slower after raising the compatibility level`

Cause: Query plans changed with the newer optimiser.

Fix: Use Query Store to compare plans and force the previous plan, or use the Query Tuning Assistant.

Search the full error library →

FAQ

Frequently asked questions

When did SQL Server 2016 support end?

On 14 July 2026. Microsoft no longer provides regular security updates or technical support.

Can I still get security updates for SQL Server 2016?

Yes, with Extended Security Updates: critical updates for up to three years, to 17 July 2029, for Enterprise and Standard with Software Assurance or subscription licences, or in Azure.

Can I upgrade SQL Server 2016 straight to SQL Server 2025?

Yes, in place from SQL Server 2016 SP3 or later. SQL Server 2022 also accepts SQL Server 2016.

Is an in-place upgrade or a new installation safer?

A new installation, because the old instance stays as it is and you can go back to it. An in-place upgrade replaces it.

Do I need to change the compatibility level?

Not straight away. It stays the same after the move; raise it later with Query Store watching for slower queries.

SOURCES

Official sources

8 official pages this guide is based on

Vendors change limits and features, so confirm details on the source before you rely on them. Last checked 4 Nov 2026.

- Microsoft SQL Server Blog: SQL Server 2016 end of support is here
- Microsoft Learn: Lifecycle FAQ, Extended Security Updates for SQL Server
- Microsoft Learn: Supported version and edition upgrades (SQL Server 2025)
- Microsoft Learn: Upgrade SQL Server
- Microsoft Learn: Choose a Database Engine upgrade method
- Microsoft Learn: Complete the Database Engine upgrade
- Microsoft Learn: Change the database compatibility level and use the Query Store
- Microsoft Learn: Migration guide: SQL Server to Azure SQL Managed Instance