U.S. Department
of Transportation

**Federal Aviation
Administration**

Aviation Environmental Design Tool (AEDT)

Version 4a

Installation Manual

January 2026

Table of Contents

1 Installation Introduction

This document provides instructions on how to install the AEDT 4a. It is important to follow the installation instructions in the order listed below, as Microsoft SQL Server is a prerequisite for AEDT 4a. Installation components must run locally.

1. Install Microsoft SQL Server 2022
2. Install AEDT 4a

> ⚠️   To install software, the user must have administrative rights to the computer.

2 Technical Assistance

The AEDT Support website, https://aedt.faa.gov/, is the technical support hub for AEDT. Support requests, feedback on issues or bugs, and feature requests should be submitted through this website or by email at aedt-support@dot.gov. The latest AEDT installers and support resources, such as documentation and frequently asked questions (FAQ) are also available on the AEDT Support website. Register on the website to purchase products, request support, or submit feedback on AEDT.

Please include the AEDT Administrative File when requesting technical support. Please refer to Section 4.10.2 in the AEDT User Manual for instructions on generating the Administrative File.

3 System Requirements

System specifications for computers capable of hosting the AEDT 4a application are displayed in Table 3-1. The preferred specifications are listed with suggested minimum requirements where applicable.

⚠️ Administrative privileges are required to install AEDT.

📝 AEDT 4a installation requires 9.1 GB of available disk space.

Table 3-1 AEDT 4a System Requirements

	AEDT 4a System Specifications		
	Minimum	**Noise Only (Recommended)**	**Emissions Dispersion and Multi-Airport Studies (Recommended)[1]**
Operating Systems[2]	Windows 11 (x64)	Windows 11 (x64) or Windows Server 2022	Windows 11 (x64) or Windows Server 2022
Processor	Modern dual core processor with 2 GHz or higher clock	Modern many core (>2) processors with 2 GHz or higher clock	Modern many core (>2) processors with 2 GHz or higher clock
RAM	8 GB	16 GB	64 GB or more
Hard Disk Space	100 GB Storage	500 GB Storage	500 GB Solid State Drive (SSD) for single airport emissions dispersion 4 TB or more SSD for large scale emissions analysis
Microsoft SQL Server	Express Edition, Version 2022	Standard/Enterprise Edition, Version 2022	Standard/Enterprise Edition, Version 2022, running on the SSD[3]
Other Software	Adobe Acrobat Reader	Adobe Acrobat Reader	Adobe Acrobat Reader

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[1] While it is possible to generate emissions dispersion metric results with less than the recommended configuration, the time required for those runs to complete will be significantly longer.
[2] Use Windows Update to ensure your computer has the latest priority updates.
[3] Please see *Section 5.2.4 Maximum Server Memory Setting in SQL Server* for important information on limiting the maximum server memory of SQL Server.

Microsoft SQL Server 2022 (version 16.x) is the only supported SQL Server version for AEDT 4a.

The minimum screen resolution is 1280 x 720, and recommended screen resolution is 1920 x 1080.

It is recommended to include AEDT application as an exception to antivirus run time scan.

3.1 Upgrading from SQL Server 2017 to SQL Server 2022

This section is applicable to users who have been using older AEDT versions with SQL Server 2017 (version 14.x) and want to upgrade to SQL Server 2022 (version 16.x). Starting with the AEDT 3g release, Microsoft SQL Server 2017 is no longer supported. Microsoft SQL Server 2022 is the only supported version and is a prerequisite for using AEDT 4a.

Skip this section if you are a new user or have already migrated to SQL Server 2022.

3.1.1 In-Place Upgrade of SQL Server 2017 Instance to SQL Server 2022

This option uses the in-place upgrade feature of the Microsoft SQL Server Installation wizard. The feature allows users to upgrade instances of SQL Server 2017 to SQL Server 2022. All the databases (including any AEDT databases) on the selected SQL Server 2017 instance will be upgraded to SQL Server 2022 version.

If you have a Standard/Developer/Enterprise edition of SQL Server 2017, please use the SQL Server 2022 Installer that is same as or higher than the 2017 edition.

For example, a SQL Server 2017 *Standard* edition cannot be upgraded to 2022 using a SQL Server 2022 *Express* Installer. It must be upgraded using a SQL Server 2022 *Standard* or higher edition installer.

To upgrade to SQL Server 2022 by using the SQL Server Installation Wizard:
1. Run the SQL Server 2022 Installer, and click the **Custom** installation type.
2. In the *SQL Server Installation Center* window, click the **Installation** link on the left side of the window, then click the **Upgrade from a previous version of SQL Server**.
3. Follow the SQL Server Setup instructions to upgrade a SQL Server 2017 instance to 2022.
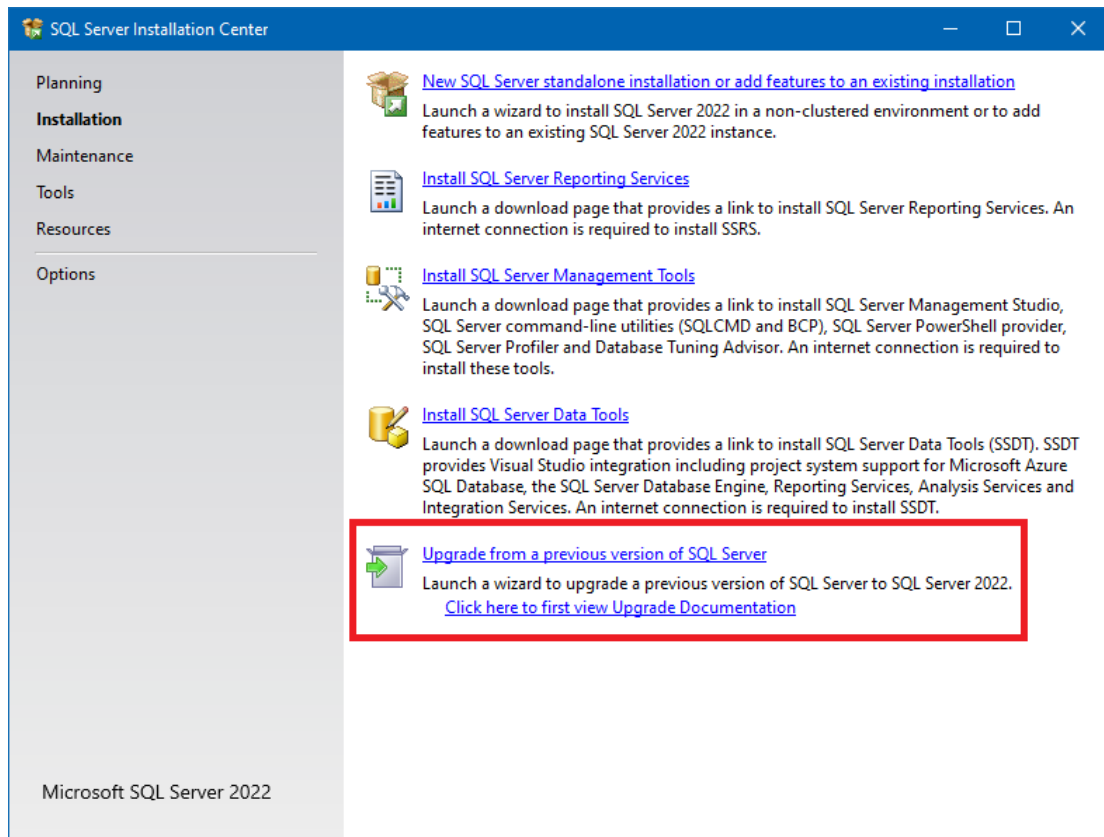
Figure 3-1 SQL Server 2022 Installation Center

4. Make sure to select the correct SQL Server 2017 instance that you want to upgrade to 2022. After the SQL Server upgrade is complete, upgrade AEDT user-defined studies to the most current AEDT study version.

3.2   Note for International Users

3.2.1   SQL Server Collation

> ⚠️ During the SQL Server installation, select **SQL_Latin1_General_CP1_CI_AS**. Please refer to Figure 5-14 SQL Server 2022 Setup – Server Configuration, Collation tab.
>
> Upgrading an older AEDT study database to the latest study version will fail if different collation is used.

3.2.2   Windows Region and Language

AEDT supports only "**English (United States)**" format for the Windows Region and Language.

To change Windows Region and Language:

1. Open the Windows Settings.

2. Click *Time & Language*.

3. From the left-hand panel, click *Region & language*. This screen may vary depending on your version of Windows 10.

4. Under *Languages*, select "English (United States)".

    If it is not already listed, use the *Add a language* option to add the "English (United States)" language.
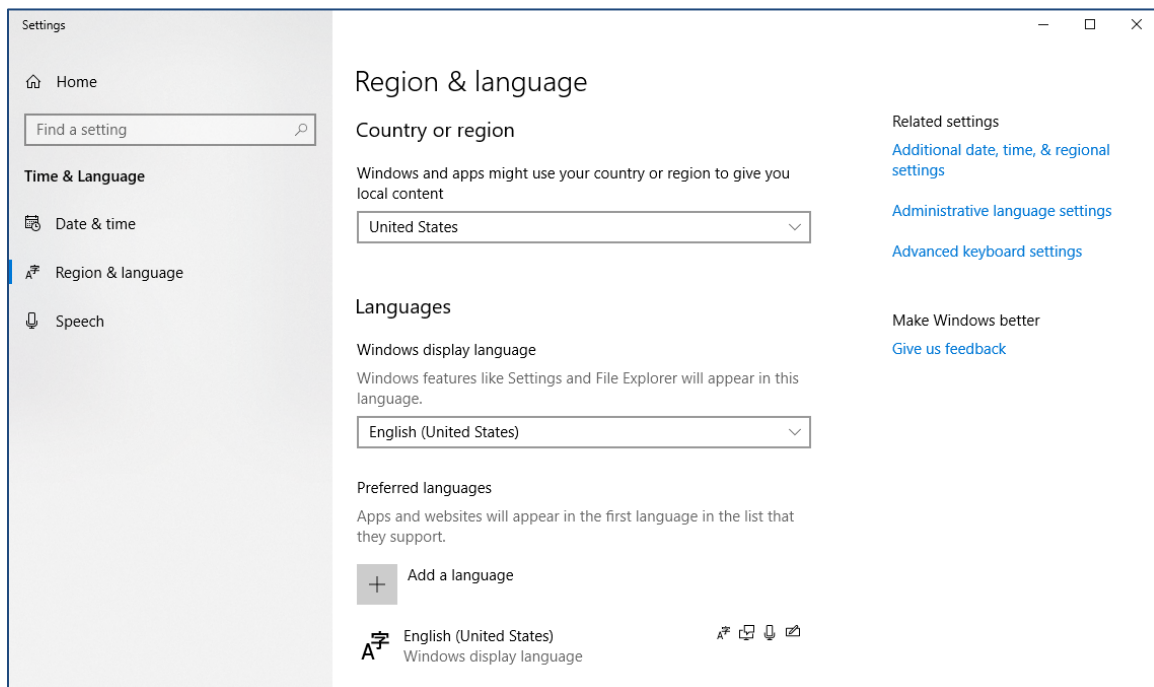

Figure 3-2 Windows Region & Language Settings

3.2.3 Windows System Locale

> ⚠️ When the Windows system locale is not set to **English (United States)**, contour generation may fail with "*The name of the Field is invalid: valid names may contain letters, numbers or underscores*" error.

To change Windows System Locale:

1. In the *Region & language* settings dialog, click the **Administrative language settings**.

2. In the "Language for non-Unicode programs" section, click the **Change system locale** button.

3. Change the Current system locate to "**English (United States)**".
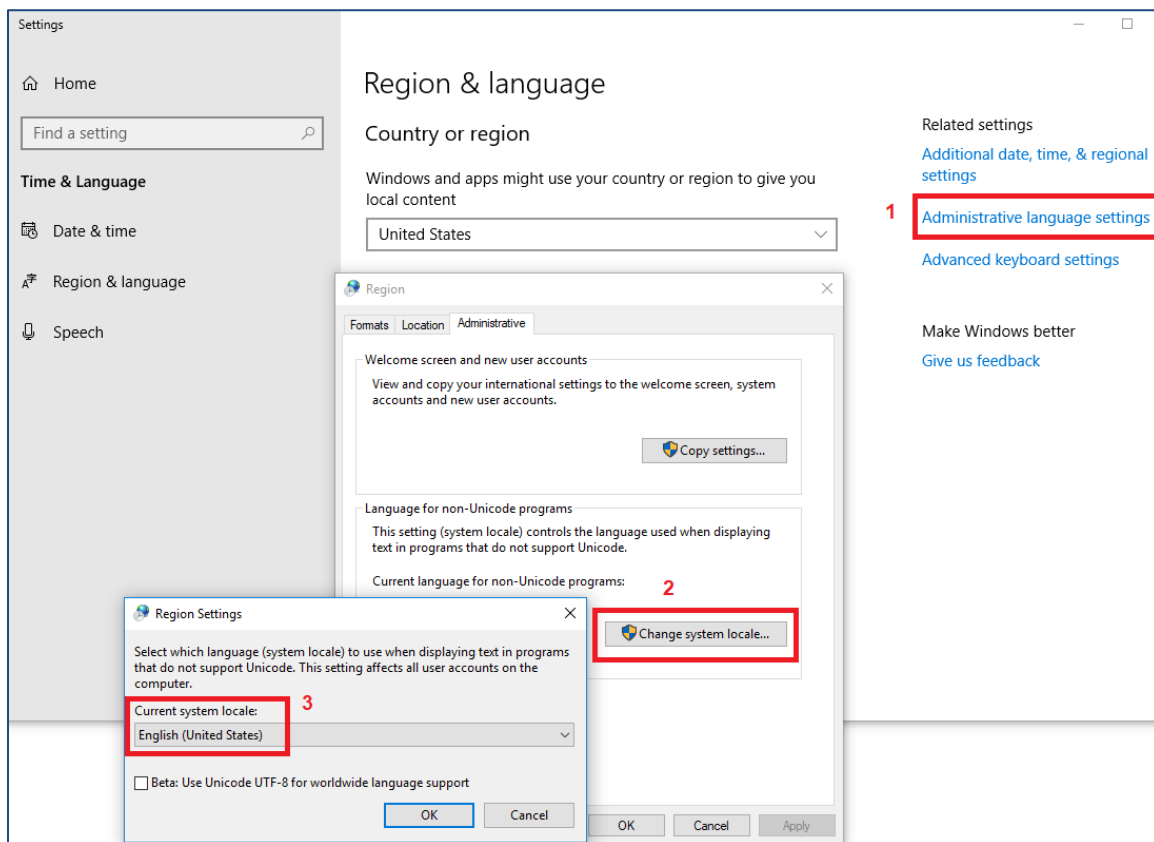
4. Click OK to close the dialog.

Figure 3-3 Windows Region Settings – System Locale

4   Installation Package

4.1   Microsoft SQL Server Software

4.1.1   SQL Server Express Edition
The SQL Server *Express* Edition is a free edition of SQL Server[4]. As specified in Table 3-1 AEDT 4a System Requirements, **using the SQL Server *Standard* Edition or higher is strongly recommended for running large studies**.

The Microsoft SQL Server 2022 Express Edition can be downloaded from this link:
https://www.microsoft.com/en-us/download/details.aspx?id=104781

The SQL Server Express Edition (a free edition of SQL Server) has the following limitations:
- Limited to the lesser of one socket or four cores
- Maximum memory for the database engine is 1 GB
- Maximum database size is 10 GB per database

4.1.2   SQL Server Management Studio (SSMS)
Microsoft SQL Server Management Studio is a graphical management tool that allows for configuration and management of Microsoft SQL Server, including backing up and restoring databases and running SQL queries.

Installing SSMS is not required but is recommended for managing AEDT databases. The Microsoft SQL Server Management Studio can be downloaded from this link: https://learn.microsoft.com/en-us/sql/ssms/download-sql-server-management-studio-ssms?view=sql-server-ver16

4.2   AEDT Software
- **Install AEDT 4a.exe** – Installer for AEDT 4a application (see Section 5.3)

- **Install AEDT 4a Distributed Processing.exe** – Installer for AEDT 4a Distributed Processing service (see Section 5.4)

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[4] For the latest updates and version history of SQL Server, see: https://learn.microsoft.com/en-us/troubleshoot/sql/releases/download-and-install-latest-updates

5   Software Installation

This section contains installation instructions for Microsoft SQL Server, AEDT software, and AEDT Distributed Processing Service. Instructions for verifying the AEDT database versions and steps to uninstall AEDT are also included.

5.1   Typical Installation Configurations

There are two typical installation configurations for AEDT: Standalone configuration; or Client–Server configuration.

In addition to the typical installation configurations, a distributed processing configuration can be set up to run metric results across a number of remote servers to reduce processing time, see Section 5.4.

5.1.1   Standalone Installation Configuration

In the **Standalone configuration,** the AEDT GUI application and AEDT databases are all installed on one machine.

For this setup:

1) Install Microsoft SQL Server (Section 5.2).

2) Install the AEDT application (Section 5.3).

5.1.2   Client – Server Installation Configuration

In the **Client-Server configuration,** the AEDT GUI application is installed on one or more client (individual) machines and connects to a remote database server where AEDT databases are installed.

> Accessing the same study database simultaneously by more than one user is not recommended.

5.1.2.1   *Installation Instructions for the Client – Server Configuration*

Here are the installation instructions for the Client-Server configuration.

Step 1: On the remote database server, install Microsoft SQL Server. See Section 5.2.

> On the remote database server machine, enable the **Shared Memory**, **Named Pipes** and **TCP/IP** protocols for SQL Server Network Configuration; and run the **SQL Server Browser** service.

Step 2: On the remote SQL Server, run the AEDT installer.
1) Select the *Custom* setup type.
2) Only check the "AEDT 4a System Databases" and the "AEDT 4a Sample Databases". Uncheck the other options.
3) Proceed with the installation.
4) After the installation is complete, confirm that the AEDT database backup files (.bak) exist in the AEDT *DatabaseBackups* folder (e.g., C:\Program Files\FAA\AEDT4a\DatabaseBackups)

5) Start SQL Server Management Studio, and confirm that the AEDT system and sample databases are listed.

Step 3: On a client machine, run the AEDT installer.
1) Select the **Custom** setup type.
2) Check all the options except for the "AEDT 4a System Databases" and the "AEDT 4a Sample Databases".
3) Proceed with the installation.
4) After the installation is complete, open the **ConnectionStrings.config** file under the AEDT application directory (e.g., C:\Program Files\FAA\AEDT4a)
5) For all connection strings, change the "Data Source" property to point to the remote SQL Server instance name, then save the file.
6) Start AEDT.
7) In the *Open Study* dialog, enter the instance name of the remote SQL Server database server.

5.1.2.2   Basic Tests After Installation
1. On the client machine, start AEDT.
   a. In the *Open Study* dialog, make sure that the database server is pointing to the remote SQL Server instance.
2. Open an existing study (e.g. STUDY_INM).
   a. Run a metric result to completion.
   b. Add an existing (new) airport to the study and generate an airport layout map layer.
3. Create a new study.
   a. Add an existing airport to the study and generate an airport layout map layer.
   b. Create a new aircraft operation.
4. If there are older studies on the remote SQL Server instance, in the *Open Study* dialog, click the "Show all versions" checkbox to view older studies on the SQL Server instance. Select an older study to upgrade, then click the *Open* button.
   a. Confirm that the study is upgraded to the current version.
5. If any of these tests fail, then proceed to the next section on MSDTC Configuration.

5.1.2.3   Microsoft Data Transaction Coordinator (MSDTC) Configuration
Any transaction-level SQL between two networked computers requires the use of the Microsoft Data Transaction Coordinator (MSDTC). This section contains configuration and troubleshooting instructions for the MSDTC. It is possible that not all of the instructions need to be followed in order for the MSDTC to work.

5.1.2.3.1   Change an AEDT Study Preference Setting
When an existing airport to a study can't be added to the study, try changing the following Database Preferences option in AEDT.

To change the Study Preference setting ("Disable MSDTC for Airport Layout Insertion"):
1. Go to *Study* tab, *Preferences*, *Database* screen.
2. Check the "Disable MSDTC for Airport Layout Insertion".

3. Click the *Save* button at the top, right-hand corner.

4. Go to *Airports* tab, then add an existing airport.

5.1.2.3.2   Enable MSDTC on Both Client Machine and Remote Server

MSDTC needs to be turned on and needs to be running as a Service on **BOTH** the client machine(s) and the remote database server.

1. On BOTH the client and on the remote server, open the Windows Component Services.

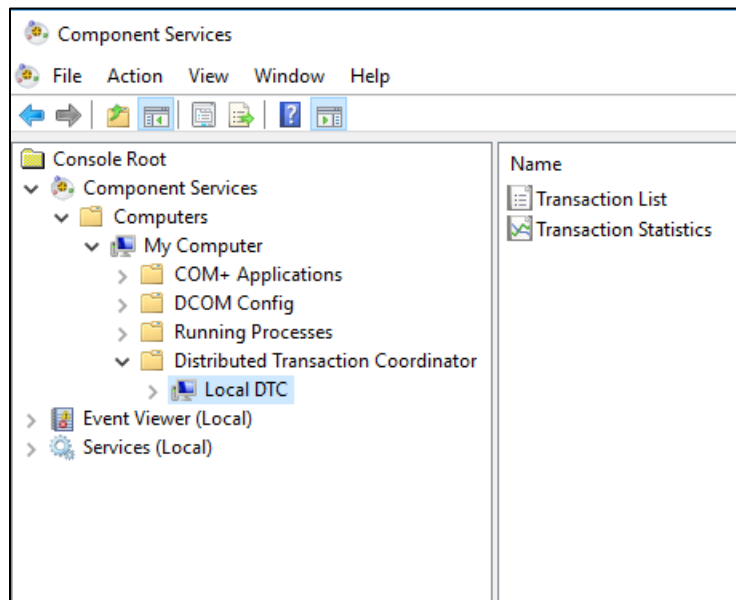2. Expand Component Services, Computers, My Computer, Distributed Transaction Coordinator, Local DTC.

Figure 5-1 Windows Component Services Dialog

3. Right-click on *Local DTC*, then click *Properties*. Enable all the options as shown in the figure below.
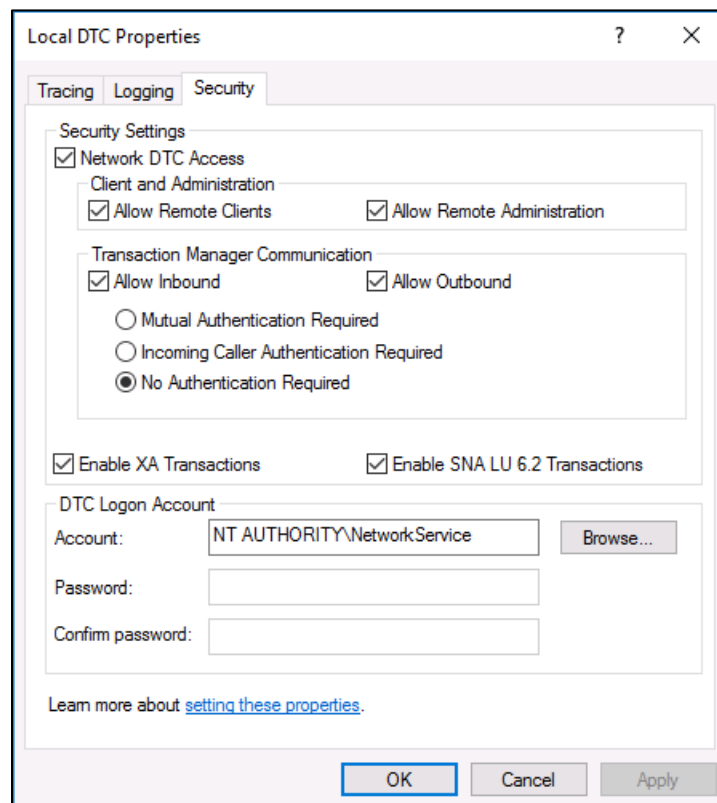
Figure 5-2 Local DTC Properties Dialog

4. Open the Windows Services dialog, and confirm that following services are running:
    - Distributed Transaction Coordinator
    - Remote Procedure Call (RPC)

5.1.2.3.3 Firewall Settings for MSDTC

The ports used by MSDTC need to be opened for cross-network communication. This may not be necessary for computers within an established company domain with both the client computers and remote server inside a firewall. On both client computers and remote server:

1. Open the Windows Firewall with Advanced Security.
2. Create an Inbound Rule for MSDTC RPC and make sure that it is Enabled.
3. Open up TCP ports 135 and 5000-5020 as shown in the figure below.
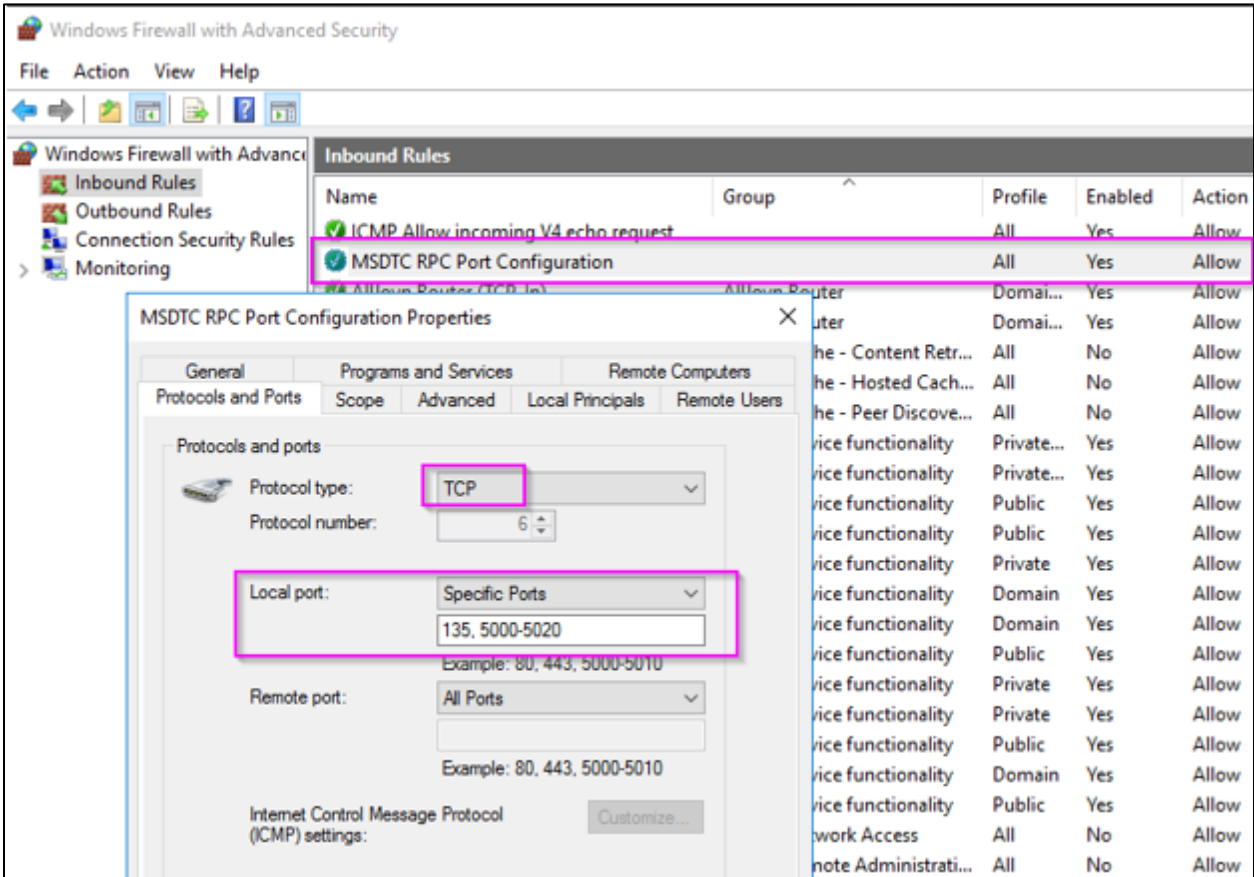
Figure 5-3 MSDTC RPC Port Configuration Properties Dialog

5.2   Install Microsoft SQL Server

Microsoft SQL Server (version 2022) must be installed prior to installing AEDT 4a. See Section 3 for AEDT system requirements. The download links for the Microsoft SQL Server Express Edition installer are provided in Section 4.1.1.

5.2.1   Instructions for Installing the SQL Server 2022 Express Edition

Instructions on installing the SQL Server 2022 Express Edition are described below. The steps and options may be different for other SQL Server Editions or different versions of the SQL Server installer.

To install Microsoft SQL Server 2022 Express Edition:

1.   Double-click the **SQL2022-SSEI-Expr.exe**.

2.   The *SQL Server 2022 Express Edition* window will automatically launch.
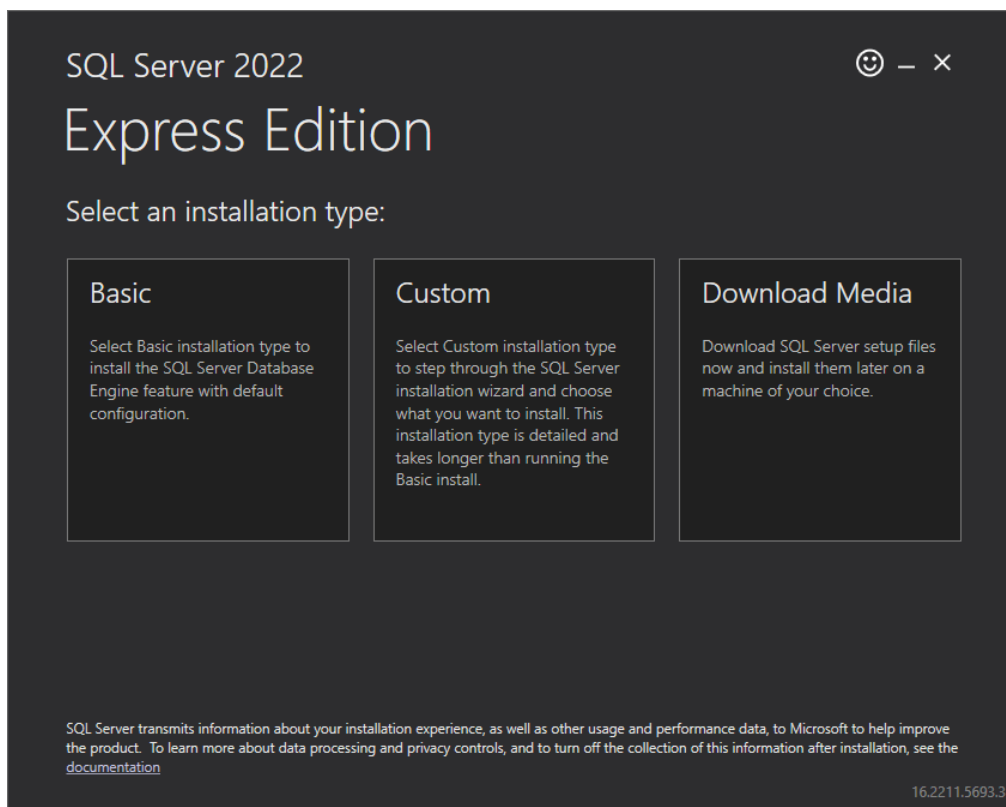
Figure 5-4 SQL Server 2022 Express Edition – Installation Type

3.   Click the ***Custom*** installation type.

4. In the next screen, specify the location for SQL Server media download and click *Install*. It will download installation packages and open the *SQL Server Installation Center* window.
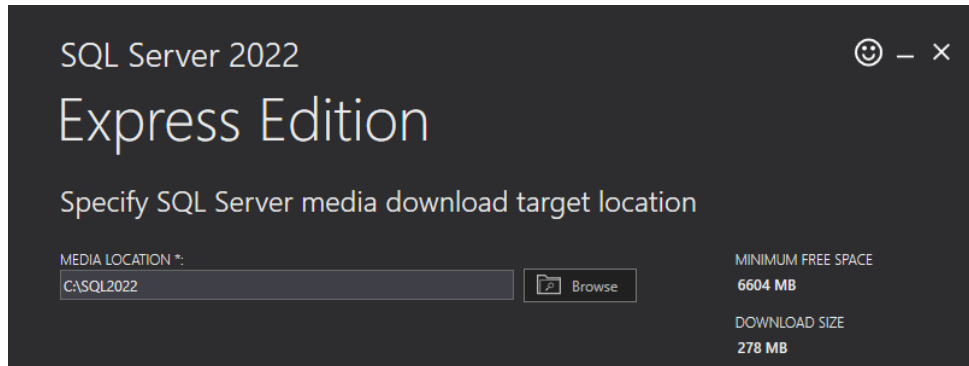
Figure 5-5 SQL Server 2022 Express Edition – Media Location

5. In the *SQL Server Installation Center* window, click the *Installation* link on the left side of the window. Click the **New SQL Server stand-alone installation or add features to an existing installation** option unless upgrading from an older version.
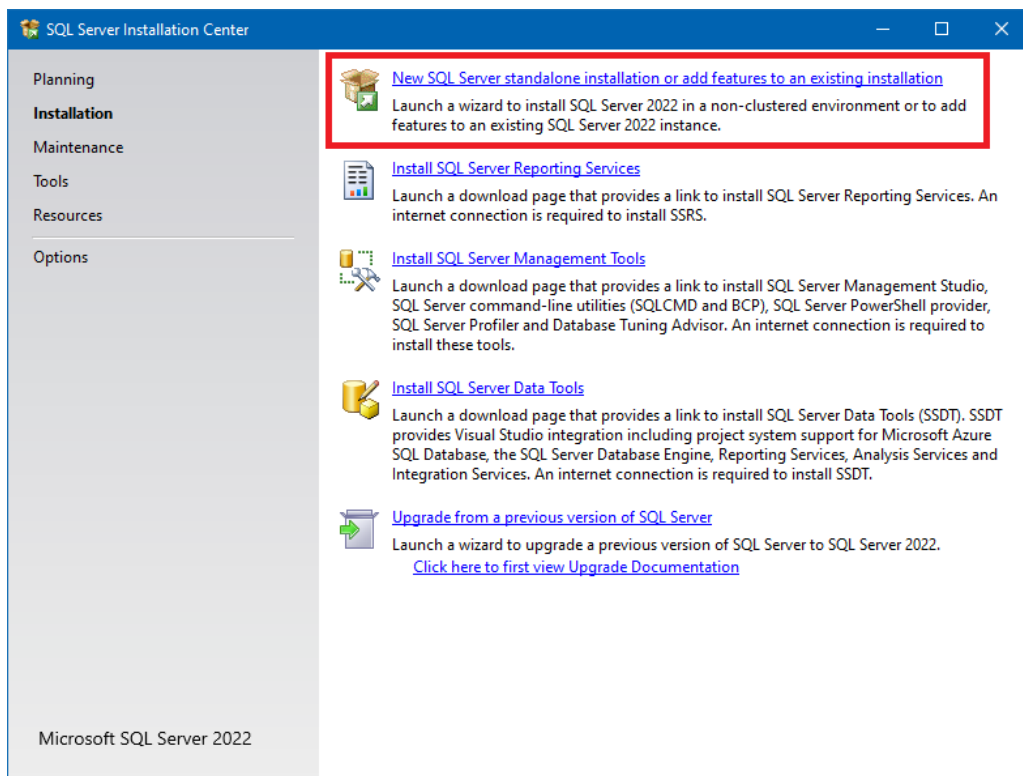

Figure 5-6 SQL Server Installation Center – Installation Menu

6. *License Terms*: Read the terms and check the box that reads ***I accept the license terms***. Click *Next*.
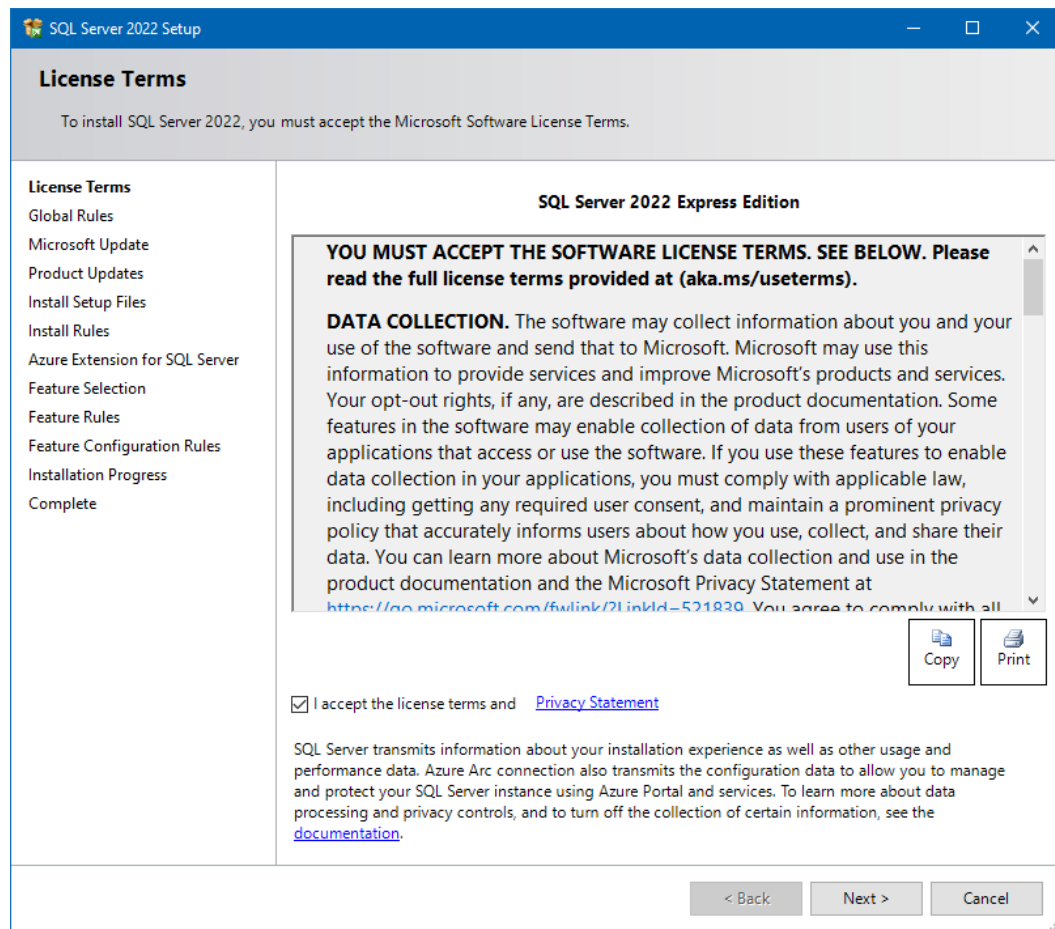
Figure 5-7 SQL Server 2022 Setup – License Terms

7. *Global Rules*: Setup Global Rules will identify problems that might occur when you install SQL Server. If there are no issues, it will automatically move onto the next step.

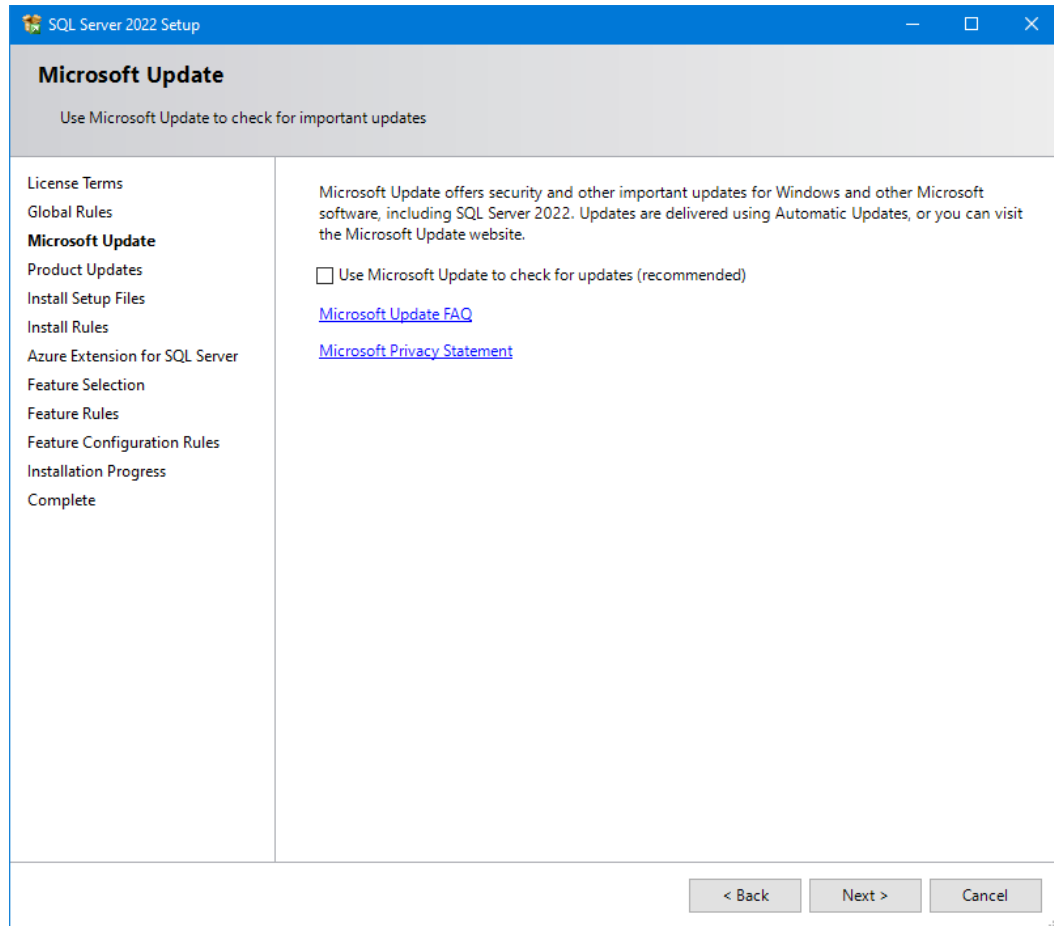8. *Microsoft Update*: If desired, select the **Use Microsoft Update to check for updates** option. Click *Next*.

Figure 5-8 SQL Server 2022 Setup – Microsoft Update

9. *Product Updates* and *Install Setup Files* steps will automatically run.

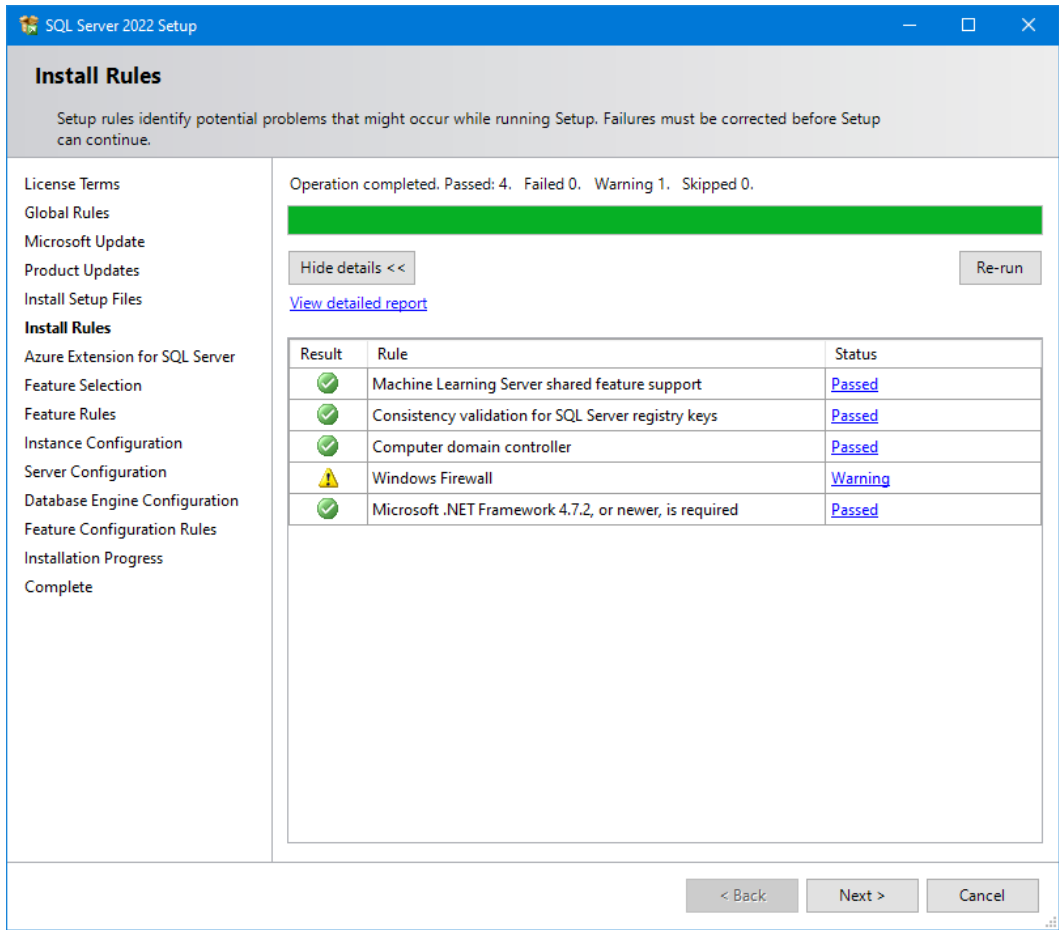10. *Install Rules:* Setup rules will identify potential problems that might occur while running Setup. Click *Next.*

Figure 5-9 SQL Server 2022 Setup – Install Rules

11. *Azure Extension for SQL Server:* Uncheck the **Azure Extension for SQL Server**. Click *Next*.

Figure 5-10 SQL Server 2022 Setup – Azure Extension for SQL Server

12. *Feature Selection:* The list of features will be different depending on the SQL Server Edition. Select the **Database Engine Services**. Additional features are optional. Click *Next*.
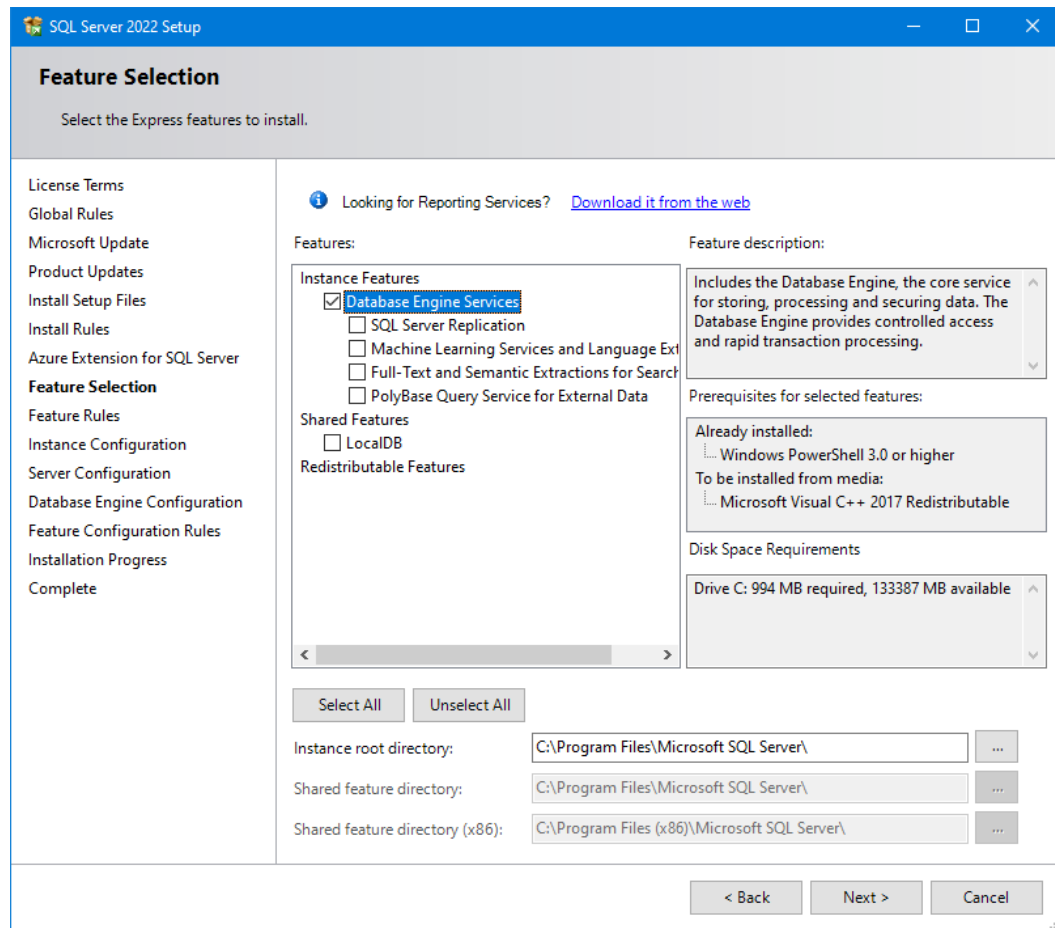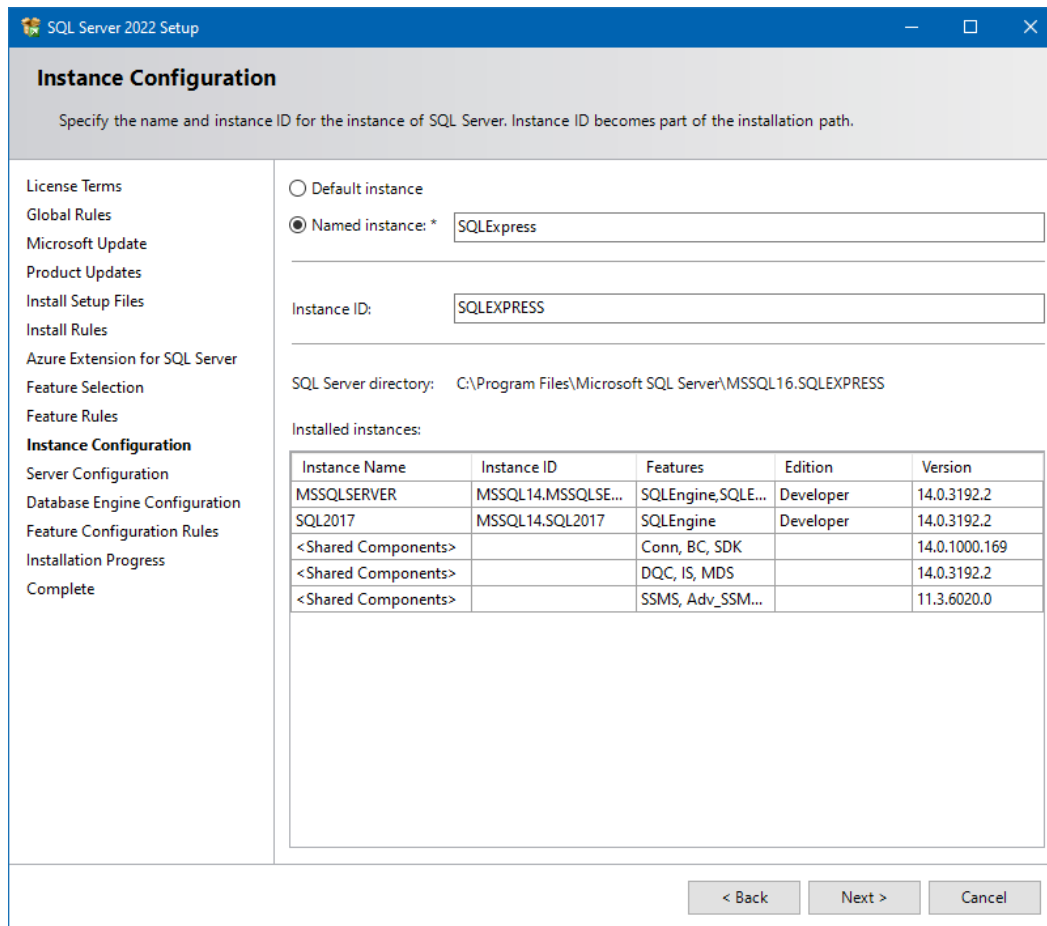
Figure 5-11 SQL Server 2022 Setup – Feature Selection

13. *Instance Configuration:* When installing the Express Edition, the "Named instance" option is selected by default. Select the desired instance option. If *Named instance* is selected, change the named instance name as needed. Click *Next*.

Figure 5-12 SQL Server 2022 Setup – Instance Configuration

The SQL Server instance created in this step should be selected when installing AEDT (see Figure 5-29).

14. *Server Configuration*:
    a. In the *Service Account* tab, the default settings work in most cases. Change the settings if necessary.
    b. Click the *Collation* tab and confirm that "**SQL_Latin1_General_CP1_CI_AS**" is selected.
    c. Click Next.

> ⚠️ The default collation may be different for international users.
> Ensure that **SQL_Latin1_General_CP1_CI_AS** is selected. Upgrading an AEDT study database (in a different collation) to the latest study version is not supported.
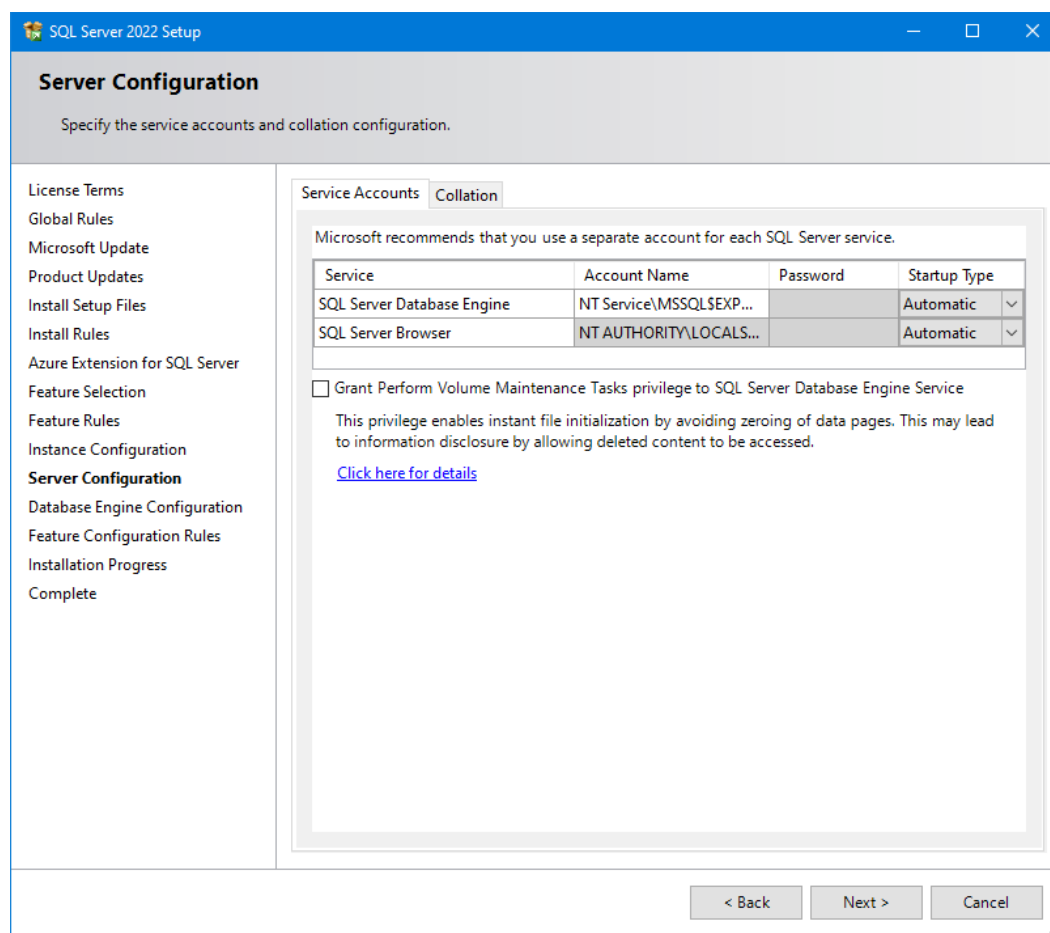
Figure 5-13 SQL Server 2022 Setup – Server Configuration, Service Accounts Tab
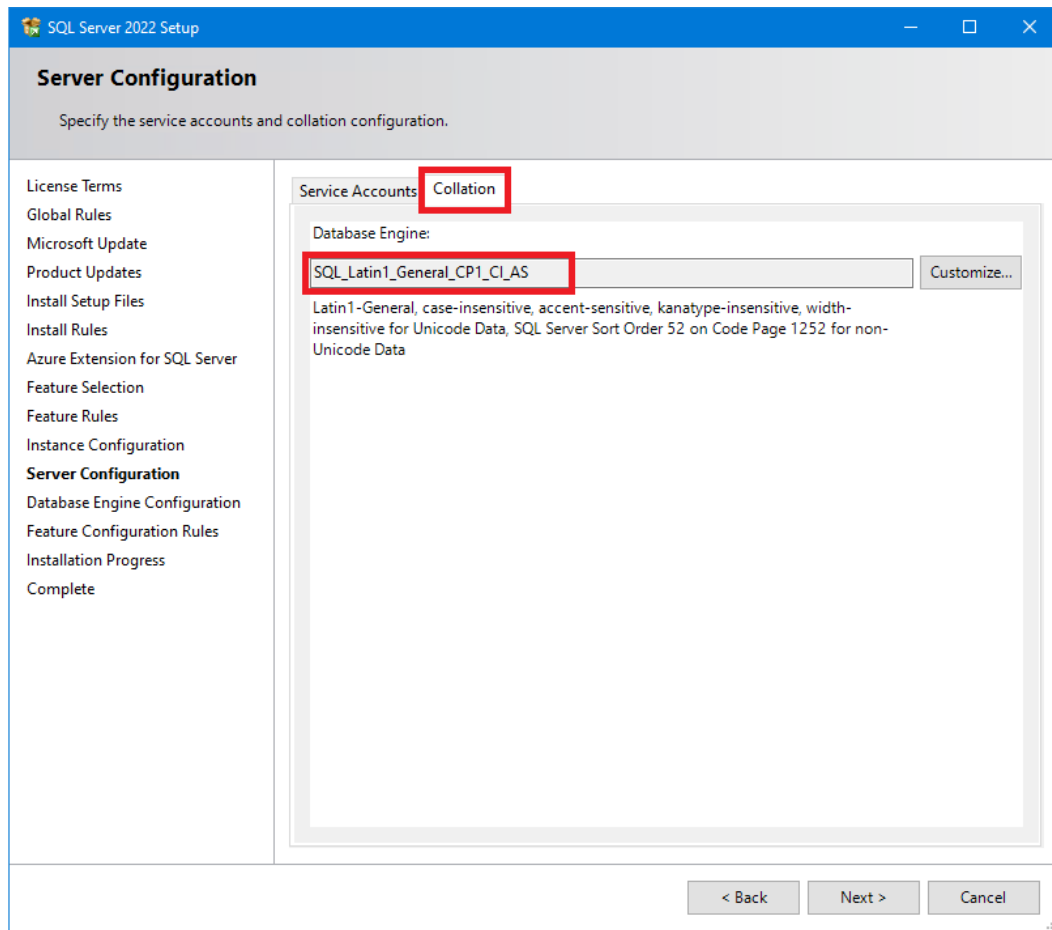
Figure 5-14 SQL Server 2022 Setup – Server Configuration, Collation tab

15. *Database Engine Configuration*: Select the desired authentication mode, then specify SQL Server administrators. This is equivalent to granting the **sysadmin** server role to the users.

> ⚠️ • **Add the user who will be installing AEDT as a SQL Server administrator.**
> • **Add the user who will be using/running AEDT as a SQL Server administrator.**

Click *Next*.

Figure 5-15 SQL Server 2022 Setup – Database Engine Configuration

16. *Installation Progress:* The progress bar and status will update until the installation is complete.
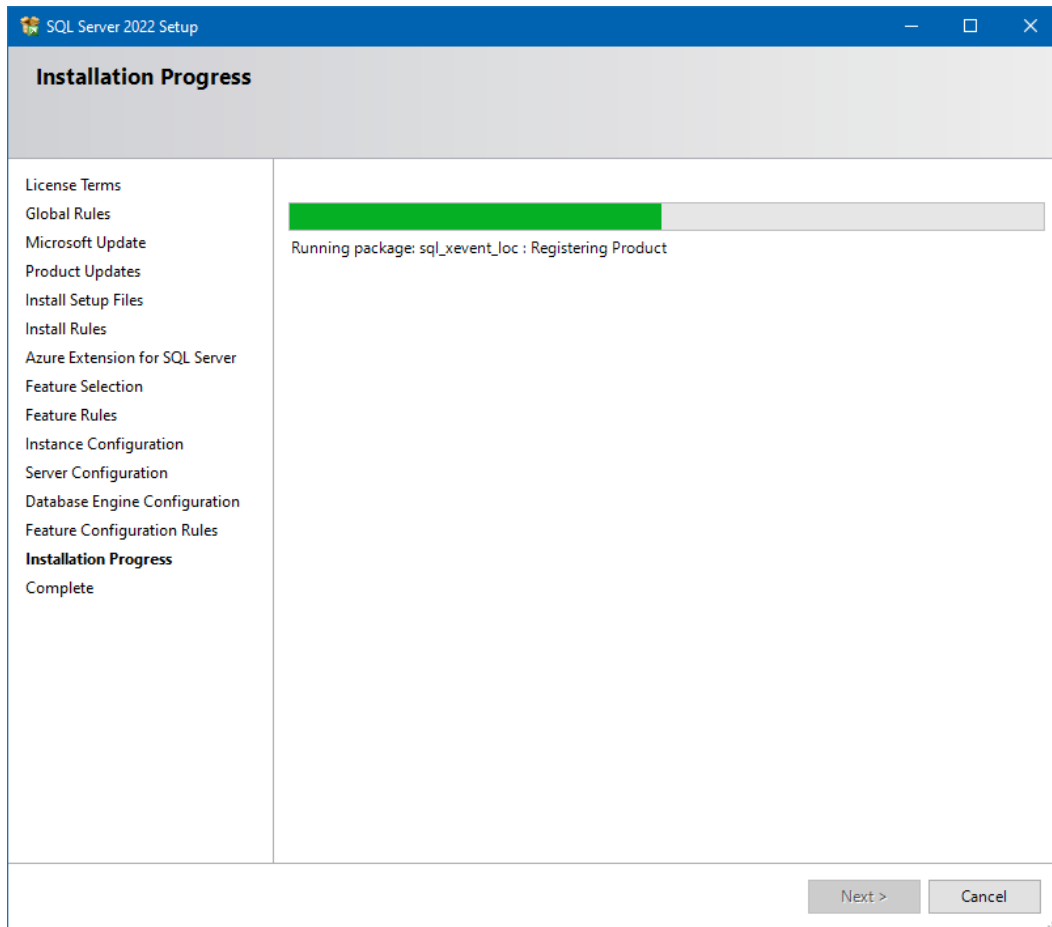
Figure 5-16 SQL Server 2022 Setup – Installation Progress

17. *Complete:* The final screen will confirm that the installation was successful.

18. Click *Close* to close the *SQL Server 2022 Setup* window.
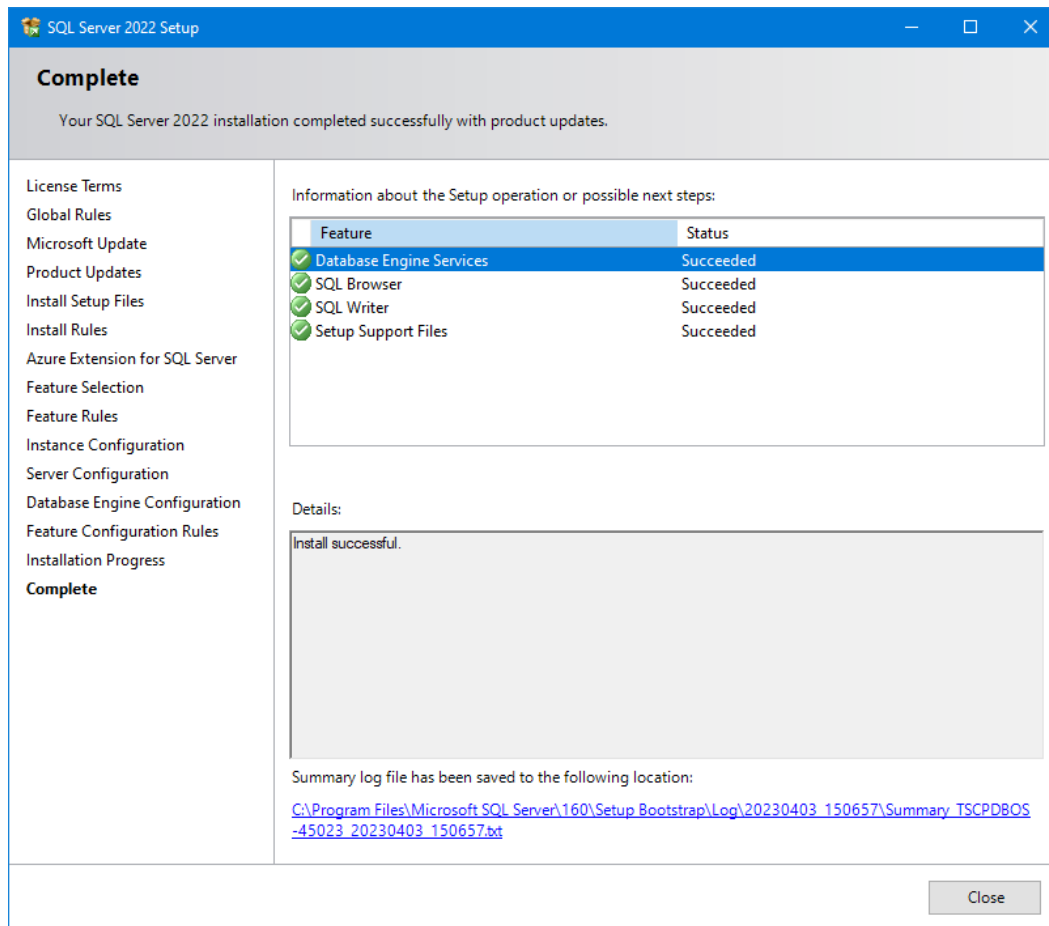
Figure 5-17 SQL Server 2022 Setup – Complete

19. Close the *SQL Server Installation Center* window by clicking the *X* in the top right corner.

5.2.2   Install Microsoft SQL Server Management Studio

Microsoft SQL Server Management Studio (SSMS) is a graphical management tool that allows for configuration and management of Microsoft SQL Server, including backing up and restoring databases and running SQL queries. Installing SSMS is not required but is recommended for managing AEDT databases.

Follow the steps in this section to install Microsoft SQL Server Management Studio for SQL Server 2022 and SQL Server 2022 Express. Skip this section if you already have a version of SQL Server Management Studio installed that works with your version of SQL Server software.

To install Microsoft SQL Server Management Studio:
1.   Download SQL Server Management Studio from https://learn.microsoft.com/en-us/sql/ssms/download-sql-server-management-studio-ssms?view=sql-server-ver16
2.   Double-click the **SSMS-Setup-ENU.exe**.
3.   Click Install. A progress screen appears. After installation is complete, you may be prompted to restart.
4.   After restart, SQL Server Management Studio is available for use.

5.2.3   SQL Server – sysadmin Server Role

As explained in the SQL Server installation instructions (see 5.2.1), both the user who will be installing AEDT (e.g., IT personnel) and the user who will be using AEDT **must be a SQL Server administrator**.

If those users were not added as SQL Server administrator during SQL Server installation, then follow the steps below to add them to the **sysadmin** server role.

1.   Open SQL Server Management Studio.
2.   In the *Connect to Server* dialog box, enter or select the SQL Server instance name where AEDT databases are installed.
3.   Select the appropriate Authentication method, then click the *Connect* button.
4.   In the *Object Explorer*, expand the *Security* folder, then the *Server Roles* folder.
5.   Double-click on the *sysadmin* to open the *Server Role Properties* dialog.
6.   Click the *Add* button and add the desired user account(s), and click OK.

5.2.4   Maximum Server Memory Setting in SQL Server

When running an annual emissions or emissions dispersion analysis, it is important to limit the SQL Server's Maximum server memory. This only applies to standalone configurations where the AEDT application and the database server are located on the same machine. This does not apply to remote database servers.

The maximum recommended server memory depends on the RAM installed on the computer and the type of hard drive – hard disk drive vs. solid state drive (SSD). As specified in the System Requirements, using SSD is highly recommended for running an emissions dispersion analysis.

The recommended range for the Maximum server memory is 25% to 50% of the RAM.

For example, if you have a 32 GB RAM machine, then set the SQL Server Maximum server memory to 8000 MB (8 GB), up to 16000 MB (16 GB).

1. In SQL Server Management Studio, connect to the SQL Server instance where AEDT databases are installed.
2. Right-click on the server instance and click *Properties*.
3. In the *Server Properties* dialog box, click the *Memory* tab on the left.
4. Change the *Maximum server memory* option.
5. Click *OK* to save your changes.
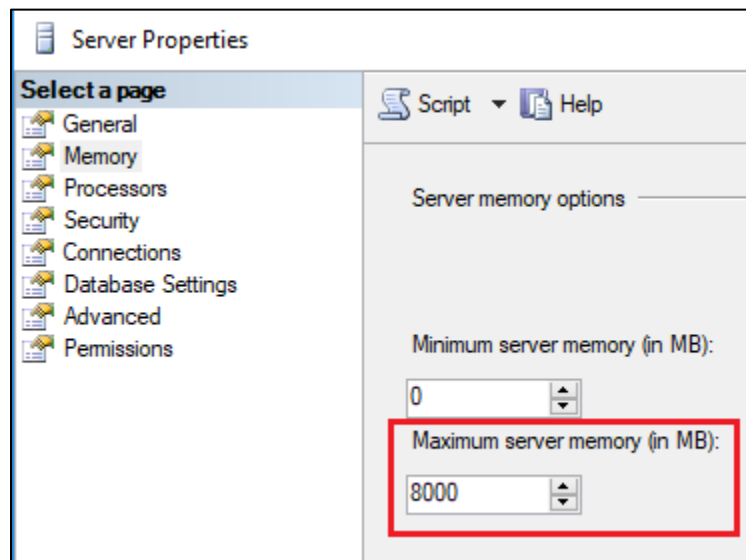
Figure 5-18 SQL Server Properties – Maximum Server Memory

For more details, please review this link: https://www.mssqltips.com/sqlservertip/4182/setting-a-fixed-amount-of-memory-for-sql-server/

5.2.5   Encrypt Connection to SQL Server

For client-server installations, using at least an encrypted connection is recommended.

It is recommended to use an encrypted connection and a server certificate when exposing AEDT databases to a larger group, external parties, or over the internet; so that users can be confident that they are communicating with the correct AEDT database server.

For information on SQL Server encryption, server certificates, and how to configure such settings ("Encrypt connection" and "Trust server certificate" options in AEDT), please see:

- *Configure SQL Server Database Engine for encrypting connections*, https://learn.microsoft.com/en-us/sql/database-engine/configure-windows/configure-sql-server-encryption?view=sql-server-ver16

- *Securing SQL Server*, https://learn.microsoft.com/en-us/sql/relational-databases/security/securing-sql-server?view=sql-server-ver16

- *Transport Layer Security and digital certificates,* https://learn.microsoft.com/en-us/sql/database-engine/configure-windows/certificate-overview?view=sql-server-ver16

5.3   Install AEDT 4a

Follow the instructions below to install AEDT. To install the AEDT application, the user must have administrative rights to the computer.

5.3.1   Older AEDT Installations and AEDT 4a

For users with an older AEDT release (e.g., AEDT 3d/3e) already installed on their computer, please decide whether to:
1) Remove the older AEDT installation; or
2) Install AEDT 4a side-by-side with an older AEDT installation.

Option 1: Remove the older AEDT installation
- **Uninstall the older AEDT version first before installing AEDT 4a!**
- Do not choose the "remove and upgrade older AEDT version" option during the AEDT 4a installation. Choosing this option will install AEDT 4a into the older AEDT application folder and data folder (e.g., AEDT 4a application files will be installed into the existing AEDT 3e/3f folders).

Option 2: Install AEDT 4a side-by-side with an older AEDT installation
- **Create a separate SQL Server 2022 instance before installing AEDT 4a!**
- Select the "install side by side with other versions" option during the AEDT 4a installation.

What is side-by-side installation?

AEDT 4a can be installed side by side with an older AEDT release (e.g., AEDT 3g). The AEDT databases from two different versions can be installed on the same database server, but on two separate SQL Server instances. Create a new SQL Server instance before proceeding with side-by-side installation of AEDT.

Side-by-side installation supports installing newer AEDT version when an older AEDT version is already installed. It does not support installing an older AEDT on top of newer AEDT version.

5.3.1.1   How to Upgrade a Study that Contains Equipment that have been Removed

> ⚠ In some instances, equipment determined to not have a suitable data option for modeling will be removed from the Fleet database and not reassigned. The equipment that have been removed from the AEDT Fleet Databases are listed in the following section.
>
> These equipment records must be removed or reassigned from study databases built prior to AEDT 4a in order to successfully update using the study update procedure.
>
> **If your existing AEDT study contains operations that use these equipment, please delete such operations or assign different equipment <u>prior to</u> upgrading your study to AEDT 4a.**

Prior to upgrading, it is recommended to review the study for equipment that has been removed. It is also recommended to review the AEDT release notes for any other updates that may be relevant to the study (e.g., GSE emission factors) and confirm or update parameters as needed.

Table 5-1 AEDT 3c Equipment Removed from AEDT 3d (Fleet 3.40.6) without Reassignments

3c Equip ID	3c Airframe Model	3c Engine Model	3c Engine ID	Update Type	Reason not remapped
4136	Embraer ERJ175-E2	CF34-10E5	1860	General update	Service start delayed to 2021
4146	Mitsubishi MRJ-90	CF34-10E5	1860	EDB update	Development paused
4251	Boeing 777-9X	GE90-115B	1517	Boeing update	Not yet in service
5302	Embraer ERJ175-E2	CF34-10E5	1910	General update	Service start delayed to 2021
5343	Boeing 777-9X Freighter	GE90-115B	1517	Boeing update	Not yet in service
5425	Boeing 777-9	GE90-94B	1795	Boeing update	Not yet in service
5342	Boeing 777-8X	GE90-115B	2087	Boeing update	Not yet in service

Table 5-2 AEDT 3d Equipment Removed from AEDT 3e (Fleet 3.45.4) without Reassignments

3d Equip ID	3d Airframe Model	3d Engine Model	3d Engine ID	Update Type	Reason not remapped
4128	Boeing 737-7	LEAP-1B23	2173	Boeing update	Not yet in service
6402	Boeing 737-7	LEAP-1B25	2174	Boeing update	Not yet in service
6403	Boeing 737-7	LEAP-1B27	2175	Boeing update	Not yet in service

Table 5-3 AEDT 3e Equipment Removed from AEDT 3f (Fleet 3.55.1) without Reassignments

3e Equip ID	3e Airframe Model	3e Engine Model	3e Engine ID	Reason not remapped
4141	MC-21-300	CFM56-5B2/3	2127	Certification Delayed or Cancelled
4142	MC-21-300	CFM56-5B4/3	2129	Certification Delayed or Cancelled
4244	MC-21-200	CFM56-5B4/3	2129	Certification Delayed or Cancelled
4245	MC-21-200	CFM56-5B2/3	2127	Certification Delayed or Cancelled
4522	SMR80	CFM56-3C-1 (Rerated)	1211	Equipment used for testing
4523	SMR80	CFM56-3C-1	1212	Equipment used for testing
4524	SMR80	CFM56-7B18	1387	Equipment used for testing
4525	SMR80	CFM56-7B20	1388	Equipment used for testing
4526	SMR80	CFM56-7B22	1389	Equipment used for testing
4527	SMR80	CFM56-7B24	1390	Equipment used for testing
4529	SMR80	CFM56-7B27	1392	Equipment used for testing
4530	SMR80	CFM56-7B20/2	1444	Equipment used for testing
4531	SMR80	CFM56-7B22/2	1445	Equipment used for testing
4532	SMR80	CFM56-7B24/2	1446	Equipment used for testing
4533	SMR80	CFM56-7B26/2	1447	Equipment used for testing
4534	SMR80	CFM56-7B27/2	1448	Equipment used for testing
4535	SMR80	CFM56-7B27/3	1796	Equipment used for testing
4537	SMR80	CFM56-7B26/3	1797	Equipment used for testing
4539	SMR80	CFM56-7B24/3	1798	Equipment used for testing
4541	SMR80	CFM56-7B22/3	1799	Equipment used for testing
4543	SMR80	CFM56-7B20/3	1800	Equipment used for testing
4545	SMR80	CFM56-7B26	1811	Equipment used for testing
4546	SMR80	CFM56-7B22E	2136	Equipment used for testing
4547	SMR80	CFM56-7B22E/B1	2137	Equipment used for testing
4548	SMR80	CFM56-7B24E	2138	Equipment used for testing
4549	SMR100	CFM56-3C-1 (Rerated)	1211	Equipment used for testing
4550	SMR100	CFM56-3C-1	1212	Equipment used for testing
4551	SMR100	CFM56-7B18	1387	Equipment used for testing
4552	SMR100	CFM56-7B20	1388	Equipment used for testing
4553	SMR100	CFM56-7B22	1389	Equipment used for testing
4554	SMR100	CFM56-7B24	1390	Equipment used for testing
4557	SMR100	CFM56-7B27	1392	Equipment used for testing
4560	SMR100	CFM56-7B20/2	1444	Equipment used for testing
4561	SMR100	CFM56-7B22/2	1445	Equipment used for testing
4562	SMR100	CFM56-7B24/2	1446	Equipment used for testing

3e Equip ID	3e Airframe Model	3e Engine Model	3e Engine ID	Reason not remapped
4563	SMR100	CFM56-7B26/2	1447	Equipment used for testing
4565	SMR100	CFM56-7B27/2	1448	Equipment used for testing
4567	SMR100	CFM56-7B27/3	1796	Equipment used for testing
4572	SMR100	CFM56-7B26/3	1797	Equipment used for testing
4576	SMR100	CFM56-7B24/3	1798	Equipment used for testing
4580	SMR100	CFM56-7B22/3	1799	Equipment used for testing
4581	SMR100	CFM56-7B26	1811	Equipment used for testing
4582	SMR100	CFM56-7B22E	2136	Equipment used for testing
4583	SMR100	CFM56-7B24E	2138	Equipment used for testing
4584	SMR100	CFM56-7B26E	2141	Equipment used for testing
4585	SMR100	CFM56-7B27E	2147	Equipment used for testing
4586	SMR100	CFM56-7B27E/B1	2148	Equipment used for testing
4587	SMR100	CFM56-7B27E/B3	2150	Equipment used for testing
5349	Cessna Citation Hemisphere	BIZMEDIUMJET_F	1849	Removing Equipment in AEDT that use representative engines
5443	United Aircraft Corporation (Irkut) MC-21 -300	PS-90A	1956	Certification Delayed or Cancelled
6478	MC-21-300	PW1130G-JM	2194	Certification Delayed or Cancelled
6480	MC-21-200	PW1130G-JM	2194	Certification Delayed or Cancelled
6482	United Aircraft Corporation (Irkut) MC-21 -300	PW1519G	2214	Certification Delayed or Cancelled

There are no AEDT 3f equipment removed from AEDT 3g (Fleet 3.57.5) without reassignments.

Table 5-4 AEDT 3g Equipment Removed from AEDT 4a (Fleet 3.63.4) without Reassignments

3g Equip ID	3g Airframe Model	3g Engine Model	3g Airframe ID	3g Engine ID
6661	Boeing 737-7	LEAP-1B25	5335	2174
6662	Boeing 737-7	LEAP-1B27	5335	2175
4145	Mitsubishi Spacejet M100	PW1217G	5350	2201
5306	Mitsubishi Spacejet M90	PW1217G	5351	2201

Changes to aircraft operations may be made to an existing study in a previous version of AEDT or by using SQL scripts.

How to Delete or Edit Aircraft Operations in AEDT:

1. Open the study in AEDT.
2. Delete the appropriate aircraft operations in the *Operations* tab by selecting the operation and clicking *Delete* in the *Aircraft Actions* ribbon group; or
3. Use the Edit Aircraft Operation wizard to change equipment by selecting the operation and clicking *Edit* in the *Aircraft Actions* ribbon group.

How to Delete Aircraft Operations using SQL:

1. Use the following SQL script to delete aircraft operations with equipment that have been removed from AEDT and remove them from operation group(s) if they are assigned.

```
USE [YOUR_STUDY_NAME];

DELETE FROM [dbo].[CASE_AIR_OPERATION]
WHERE AIR_OP_ID in
(SELECT AIR_OP_ID FROM [dbo].[AIR_OPERATION] WHERE AIRCRAFT_ID in (select distinct
[AIRCRAFT_ID] from [dbo].[AIR_OPERATION_AIRCRAFT]
where EQUIPMENT_ID in
(4136,4146,4251,5302,5343,5425,5342,4128,6402,6403,4141,4142,4244,4245,4522,4523,4
524,4525,4526,4527,4529,4530,4531,4532,4533,4534,4535,4537,4539,4541,4543,4545,454
6,4547,4548,4549,4550,4551,4552,4553,4554,4557,4560,4561,4562,4563,4565,4567,4572,
4576,4580,4581,4582,4583,4584,4585,4586,4587,5349,5443,6478,6480,6482,
6661,6662.4145,5306)))


DELETE FROM [dbo].[AIR_OPERATION] WHERE AIRCRAFT_ID in (select distinct
[AIRCRAFT_ID] from [dbo].[AIR_OPERATION_AIRCRAFT]
where EQUIPMENT_ID in
(4136,4146,4251,5302,5343,5425,5342,4128,6402,6403,4141,4142,4244,4245,4522,4523,4
524,4525,4526,4527,4529,4530,4531,4532,4533,4534,4535,4537,4539,4541,4543,4545,454
6,4547,4548,4549,4550,4551,4552,4553,4554,4557,4560,4561,4562,4563,4565,4567,4572,
4576,4580,4581,4582,4583,4584,4585,4586,4587,5349,5443,6478,6480,6482,
6661,6662.4145,5306))
```

How to Assign Different Equipment to Aircraft Operations Using SQL:

1. To identify aircraft operations with equipment that have been removed from AEDT, use the following SQL statement:

```
SELECT * FROM [dbo].[AIR_OPERATION] WHERE AIRCRAFT_ID in (SELECT distinct
[AIRCRAFT_ID] FROM [dbo].[AIR_OPERATION_AIRCRAFT] where EQUIPMENT_ID in
(4136,4146,4251,5302,5343,5425,5342,4128,6402,6403,4141,4142,4244,4245,4522,4523,4
524,4525,4526,4527,4529,4530,4531,4532,4533,4534,4535,4537,4539,4541,4543,4545,454
6,4547,4548,4549,4550,4551,4552,4553,4554,4557,4560,4561,4562,4563,4565,4567,4572,
4576,4580,4581,4582,4583,4584,4585,4586,4587,5349,5443,6478,6480,6482,
6661,6662.4145,5306)))
```

2. To identify records in the AIR_OPERATION_AIRCRAFT table with equipment that have been removed from AEDT, use the following SQL statement:

```
SELECT * FROM [dbo].[AIR_OPERATION_AIRCRAFT] where EQUIPMENT_ID in
(4136,4146,4251,5302,5343,5425,5342,4128,6402,6403,4141,4142,4244,4245,4522,4523,4
524,4525,4526,4527,4529,4530,4531,4532,4533,4534,4535,4537,4539,4541,4543,4545,454
6,4547,4548,4549,4550,4551,4552,4553,4554,4557,4560,4561,4562,4563,4565,4567,4572,
4576,4580,4581,4582,4583,4584,4585,4586,4587,5349,5443,6478,6480,6482,
6661,6662.4145,5306)
```

3. Based on the results from the previous query, construct a SQL UPDATE statement for each AIRCRAFT_ID (a sample is provided below). The goal is to replace the EQUIPMENT ID for equipment that have been removed from AEDT with something else. The user must choose a new EQUIPMENT ID for the parameter "NEW_ID".

```
UPDATE [dbo].[AIR_OPERATION_AIRCRAFT] SET EQUIPMENT_ID=NEW_ID WHERE AIRCRAFT_ID=
```

4. The last step is to update the flight profile of aircraft operations from step 1. This information is stored in the PROFILE_ID column of the AIR_OPERATION table. It is recommended to update the profile ID within the AEDT 4a GUI, after the study has been upgraded to AEDT. This can be done by editing an existing aircraft operation and assigning a flight profile in the *Edit Aircraft Operations* wizard. If the profile is not updated, then an operation may fail to be processed.

5.3.2   Install AEDT 4a

> ⚠️ For the standalone installation (see Section 5.1.1), Microsoft SQL Server 2022 must be installed prior to installing AEDT 4a.

❓ Can AEDT databases be installed to an <u>existing</u> SQL Server 2022 instance?

- Yes, AEDT databases can be installed on a new SQL Server instance *or* on an existing SQL Server instance.
- Before installing AEDT databases on an existing SQL Server instance, ensure that AEDT system databases and AEDT sample databases have been removed.
- Databases can be manually deleted from SQL Server Management Studio.

To install AEDT application and databases:
1. To start the installer, double-click the ***Install AEDT 4a.exe*** file.

2. If the following software are not installed, the Prerequisites Setup Wizard will initiate installation of the required software.

   - Microsoft .NET Framework 4.8
   - Microsoft .NET 8.0.6 Windows Server Hosting[5]
   - Microsoft .NET Desktop Runtime 8.0.20[6]

> 📝 Internet connection is required to download and install these prerequisites. If you cannot connect to the internet on the target machine, pre-download the prerequisites on a different machine, copy them to the target machine, and install the prerequisites before running the "Install AEDT 4a.exe".

---

[5] Download link: https://download.visualstudio.microsoft.com/download/pr/751d3fcd-72db-4da2-b8d0-709c19442225/33cc492bde704bfd6d70a2b9109005a0/dotnet-hosting-8.0.6-win.exe
[6] Download link: https://builds.dotnet.microsoft.com/dotnet/WindowsDesktop/8.0.20/windowsdesktop-runtime-8.0.20-win-x64.exe
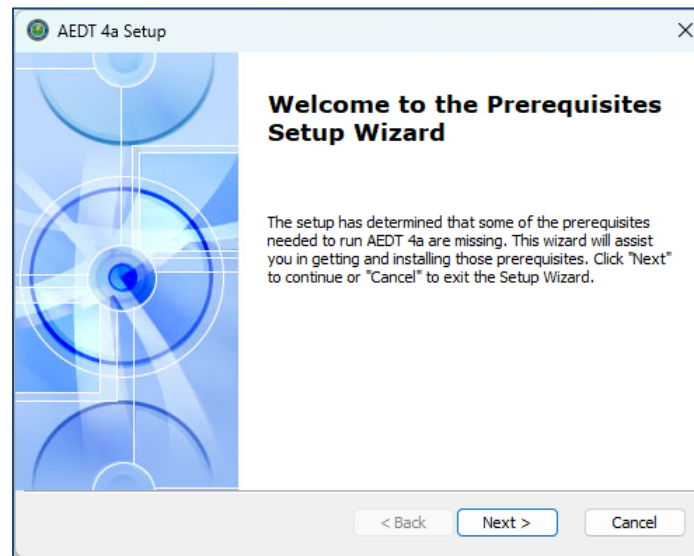
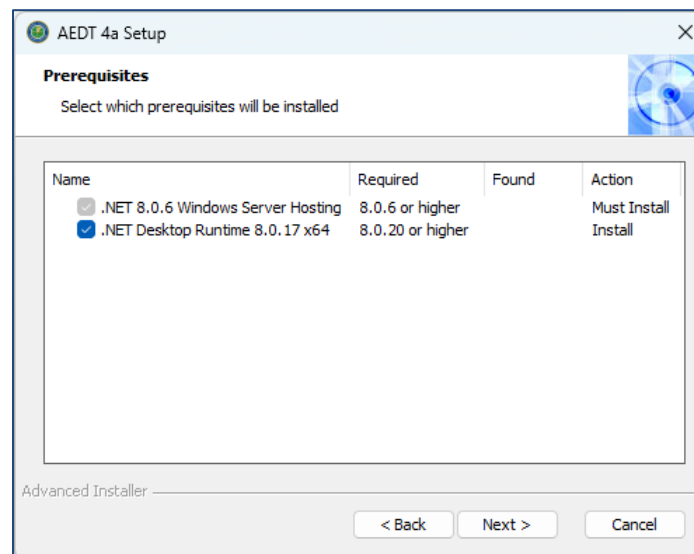Figure 5-19 AEDT Prerequisites Setup Wizard

Figure 5-20 AEDT Prerequisites Setup Wizard

Accept the license agreements and click *Install* to install the required software. The AEDT Setup Wizard will be displayed once the prerequisite installation is done.

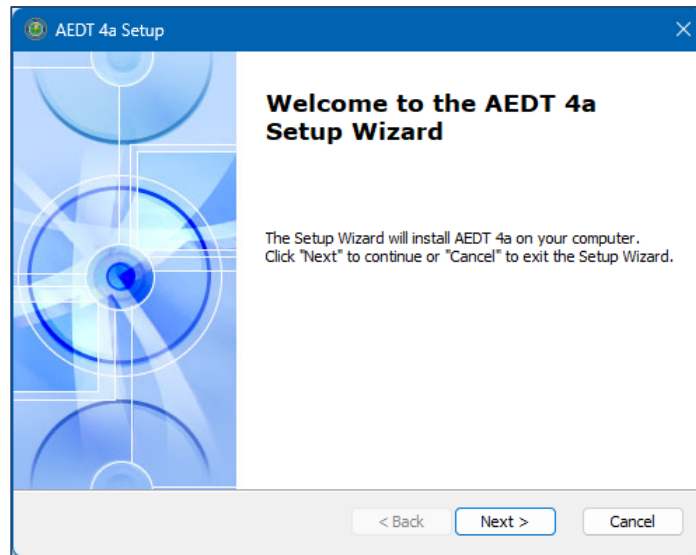3. The AEDT Setup Wizard will display the welcome screen. Click *Next*.

Figure 5-21 AEDT Setup Wizard – Welcome

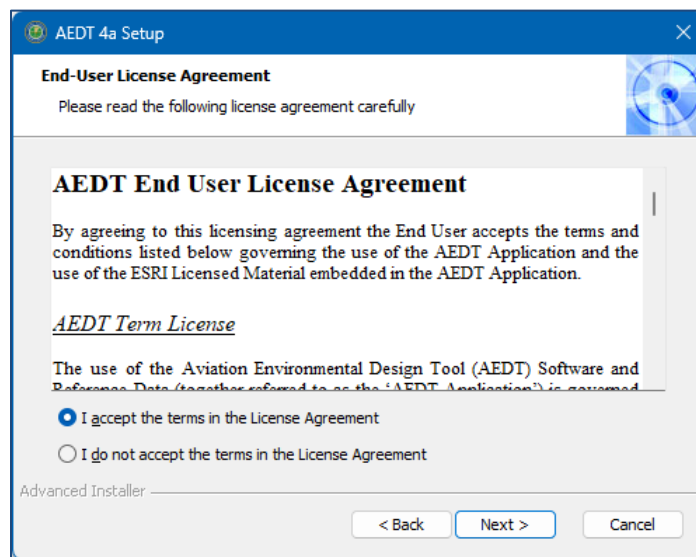4. Read the license terms and click *I accept the terms of the license agreement*. Click *Next*.

Figure 5-22 AEDT Setup Wizard – License Agreement

5. **If an older AEDT version is already installed**, the following screen will be displayed (Figure 5-23).
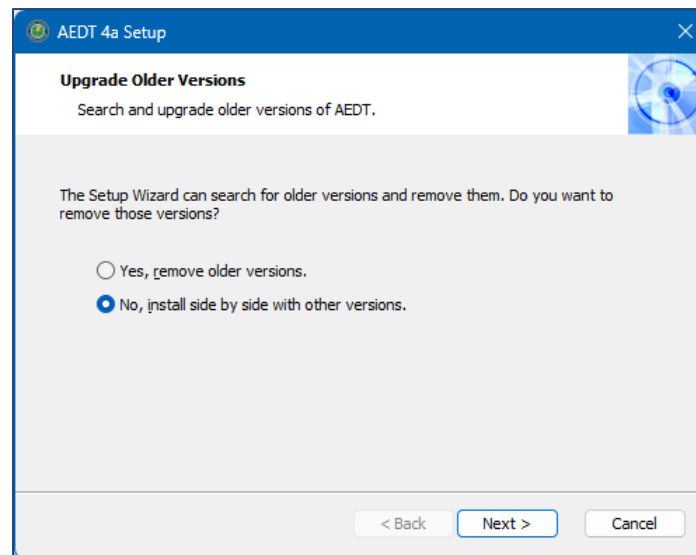
Figure 5-23 AEDT Setup Wizard – Upgrade Older Versions

> ⚠️ Before proceeding, please review Section 5.3.1 *Older AEDT Installations and AEDT 4a* for detailed instructions.

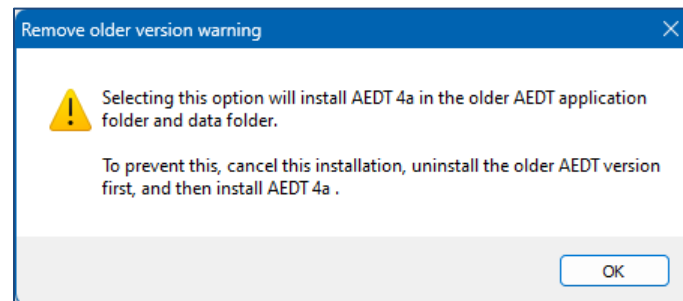- Click *Yes* to remove the older AEDT version and install AEDT 4a. Clicking *Yes* will display the following warning.

Figure 5-24 AEDT Setup Wizard – Remove Older Version Warning

- Click *No* to install AEDT 4a alongside with older AEDT version.

Click *Next* to continue.

6. Select the **Custom** setup type.

    The **Custom** setup is recommended and described in this section since the locations of the AEDT installation folder and the data folder can be viewed and modified through this path in the installer.

    - *Complete*: installs all the AEDT components to default locations
        o   The following default installation locations are used:
            ▪   AEDT installation folder – C:\Program Files\FAA\AEDT4a
            ▪   AEDT data folder – C:\AEDT4a

    - *Custom*: allows users to customize which AEDT component(s) to install and change the locations where the software is installed.
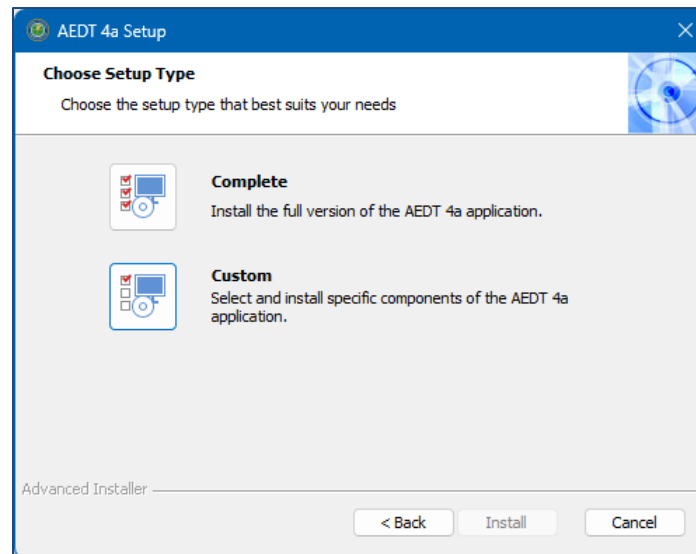
Figure 5-25 AEDT Setup Wizard – Setup Type

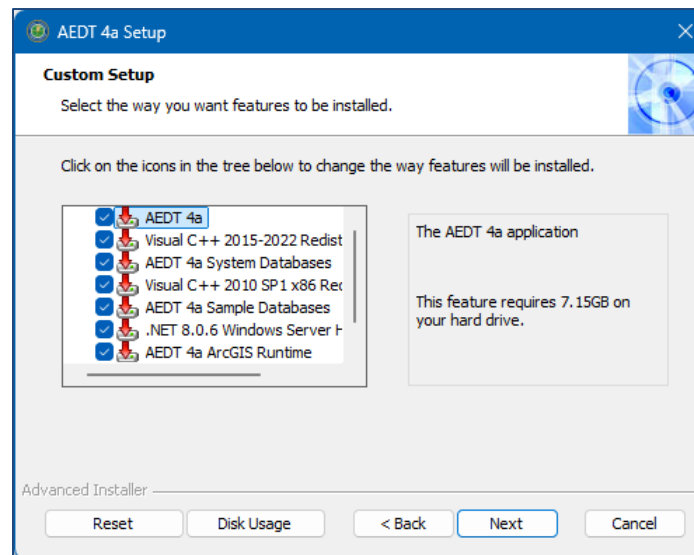7. All the features are selected by default. Click *Next*.

Figure 5-26 AEDT Setup Wizard – Custom Setup

8. Select the Installation folder. Accept the default location or specify a different folder. Click *Next*.
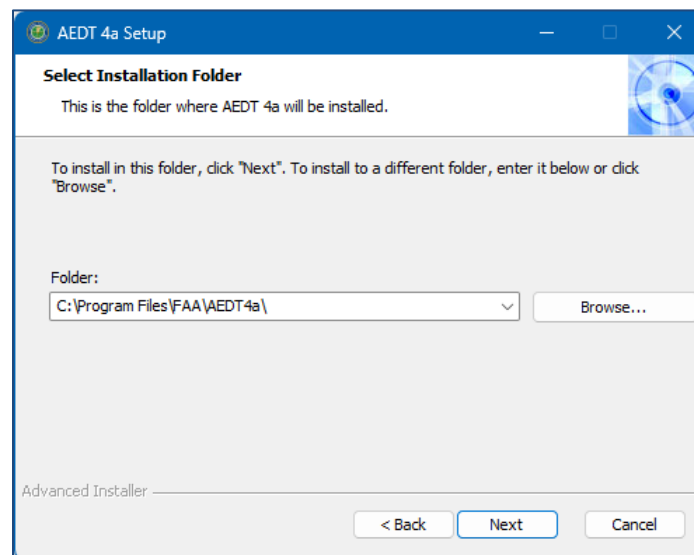

Figure 5-27 AEDT Setup Wizard – Installation Folder

9. Select the Data folder. Accept the default location or specify a different folder. Click *Next*.

> ⚠️ Do not include any spaces in the Data Folder path (e.g. C:\AEDT 4a). Spaces in the Data Folder path will cause problems with contour generation and with base map display.
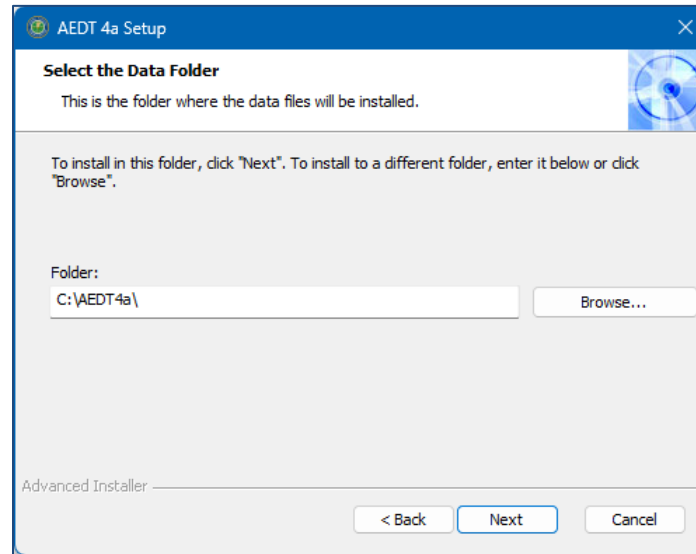

Figure 5-28 AEDT Setup Wizard – Installation Folder

10. Select the desired database server instance from the drop-down menu or type the name of the server in the *Server* field. Click *Next*. The installer will connect to the database server and advance to the next step.
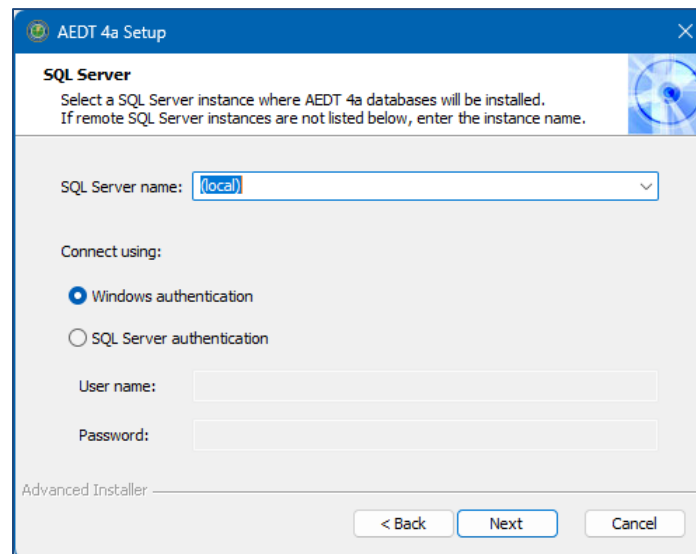

Figure 5-29 AEDT Setup Wizard – SQL Database

The following error message (Figure 5-30) is displayed under the following circumstances:
- The selected SQL Server instance already has AEDT system databases and sample databases (see Section 5.5 for the list). In this case, manually delete the AEDT system and sample databases and continue with the installation.
  or
- Side-by-side installation was selected and the same SQL Server instance that is already in use by older version of AEDT was selected. In this case, select a different SQL Server instance.
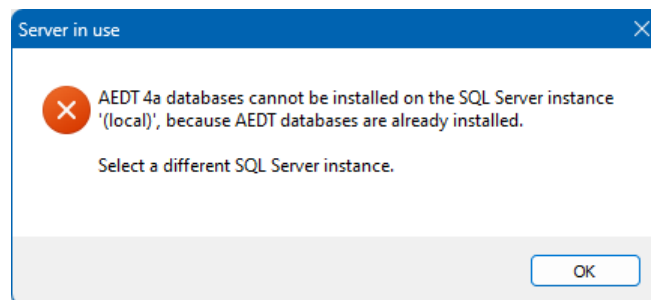

Figure 5-30 AEDT Setup Wizard – Server in Use Error

11. Click *Install* to start the installation. The installation progress will be displayed.
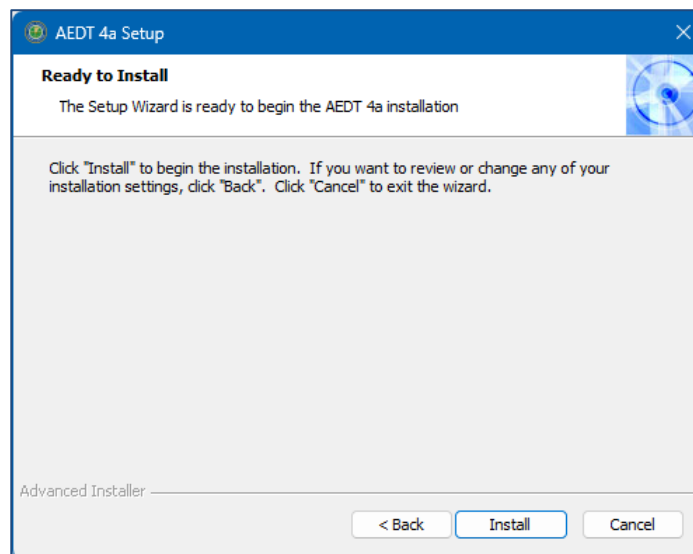

Figure 5-31 AEDT Setup Wizard – Ready to Install

12. The following prerequisites will be installed, if they are not already installed:

   - Microsoft Visual C++ 2010 x86 Redistributable, 10.0.40219
   - Microsoft Visual C++ 2015-2022 Redistributable (x64), 14.44.35211

   Accept the license agreements and click *Install* to install the required software.

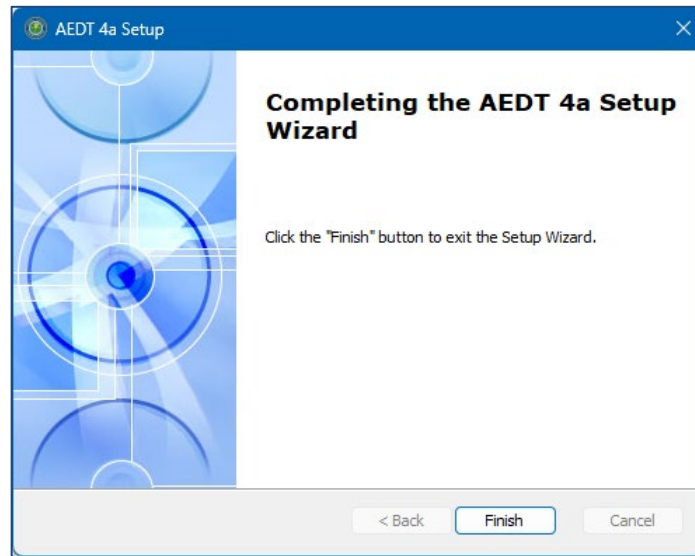13. Click *Finish* when installation is complete.

Figure 5-32 AEDT Setup Wizard – Installation Complete

14. A shortcut is created on the Desktop with the name: *AEDT 4a*.

15. AEDT 4a is ready for use.

Distributed Transaction Coordinator Service

AEDT Installer will automatically start the Microsoft Distributed Transaction Coordinator (DTC) service if it is not already started on the computer. The DTC provides services designed to ensure successful and complete transactions.

To check DTC settings on your computer:
1. Click the Windows Start button. In the "Search programs and files" text box, enter "services.msc".
2. Find the service, *Distributed Transaction Coordinator*, and double-click on it.
3. If the *Startup type* is set to *Manual*, change it to *Automatic*.
4. Click the *Log On* tab. The "Log on as" should be set to *Network Service*. To change to Network Service, select the "This account" option, then click *Browse*.
5. In the "Enter the object name to select" field, enter "Network Service", then click *OK*.
6. Restart the service.

5.3.3   User-Defined AEDT Study Databases on a SQL Server 2017 Instance

If there are any user-defined AEDT study databases on a SQL Server 2017 instance that you want to use in AEDT 4a, create a backup file of the study database then restore it on a SQL Server 2022 instance.

For instructions on how to backup and restore a SQL Server database, please refer to the following sections:

- Section 5.5.3 Backup SQL Server Database
- Section 5.5.4 Restore SQL Server Database

5.3.4   Upgrade User-Defined AEDT Study Databases

Existing user-created studies need to be upgraded to the current version in order to use them in AEDT 4a. AEDT 4a supports upgrading AEDT study versions 3c and higher.

In order to upgrade an older AEDT study (AEDT 3c and higher) in AEDT 4a:
1. Restore the study backup file on the SQL Server instance where the AEDT 4a system databases are installed.
2. Follow the instructions in the AEDT User Manual to update the older AEDT study database to the latest version.

To upgrade a study version older than AEDT 3c (study version 1.69.5):
1. Install AEDT 3g then upgrade the old study to AEDT 3g (study version 2.05.5).
2. Uninstall AEDT 3g if it is no longer needed.
3. Install AEDT 4a and upgrade the 3g study to AEDT 4a (study version 2.17.2).

5.3.5   Updating the ConnectionStrings.Config

This section provides instructions on updating the ConnectionStrings.config file in case users decide to change their SQL Server database instance after installing AEDT.

1) Open the **ConnectionStrings.config** file under the AEDT application directory (e.g., C:\Program Files\FAA\AEDT4a)
2) For all connection strings, change the "Data Source" property to point to the desired SQL Server instance name, then save the file.
3) Start AEDT.
4) In the *Open Study* dialog, enter the instance name of the remote SQL Server database server then click the *Connect* button.

5.4   Optional – Install AEDT Distributed Processing Service

Installing the AEDT Distributed Processing Service is optional. The AEDT Distributed Processing Service is also known as the Taskmaster (TM) Service.

AEDT uses distributed computing to provide the ability to run noise metric results across a number of remote servers to reduce processing time. A distributed processing system is a collection of computers that communicate through a computer network. Up to fifty remote servers running the Distributed Processing service can be networked to a single AEDT client computer running AEDT application.

?   **What types of modeling does AEDT Distributed Processing Service support?**
Distributed Processing is designed to support running large noise analysis using a fixed grid (receptor set). It does not support running noise metric results with a dynamic grid.

Is there a recommended way to design an AEDT study for distributed processing?
It is recommended to group aircraft operations into "medium" sized operation groups (cases).

For example, with four remote computers, a medium sized case would contain roughly 1,000 to 10,000 events (not aircraft operations). By designing studies this way, the risk that comes with encountering errors during a large operation group may be minimized while also avoiding the computational resource inefficiencies that result from making operation groups that are too small.

The AEDT application need only be installed on the AEDT client. On the remote servers, the AEDT Distributed Processing Service need to be installed. If a study references terrain and/or weather files, the necessary files must be placed on all remote servers in the same location specified in the *Definitions* tab on AEDT client. The specified file location must be exactly the same for all remote servers.

Each remote server receives a batch of flight operation information from the AEDT client, processes it, returns the resulting data, and awaits the next batch. The AEDT client assigns batches to the remote servers sequentially, as each remote server becomes available.

There are two installation configurations for distributed processing:
- Standalone configuration: AEDT databases reside on the AEDT client computer (see Figure 5-33 where S1, S2, S3, S4, S5, and S6 represent remote servers), or

- Client – Server configuration: The databases reside on a separate database server (see Figure 5-34, where S1, S2, S3, S4, S5, and S6 represent remote servers). This configuration reduces memory consumption on the AEDT client due to SQL Server processing. The AEDT client relays all necessary information to the remote servers. The remote servers do not communicate directly with the separate database server.
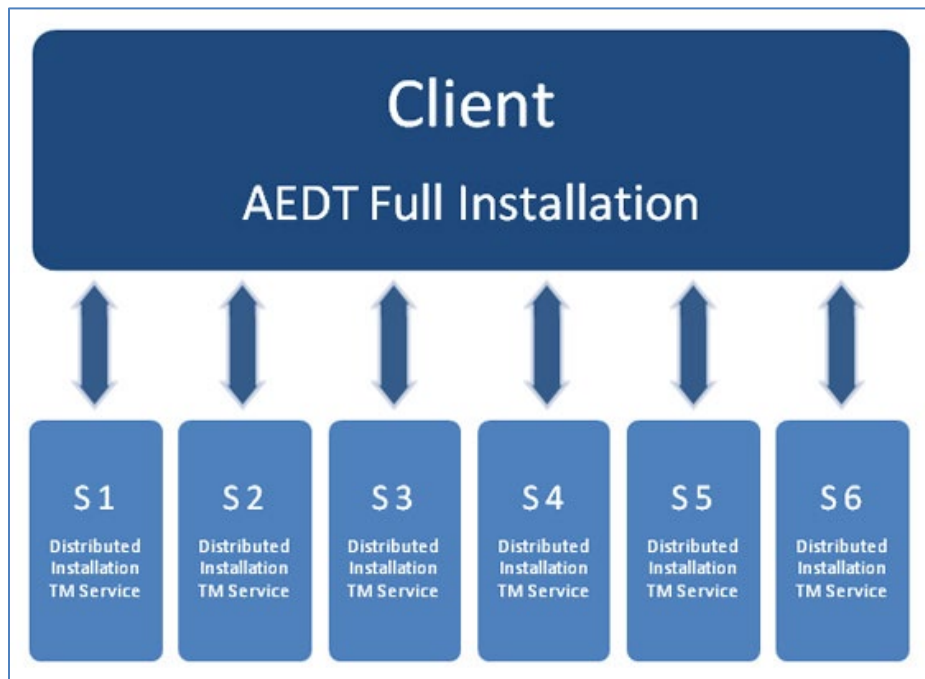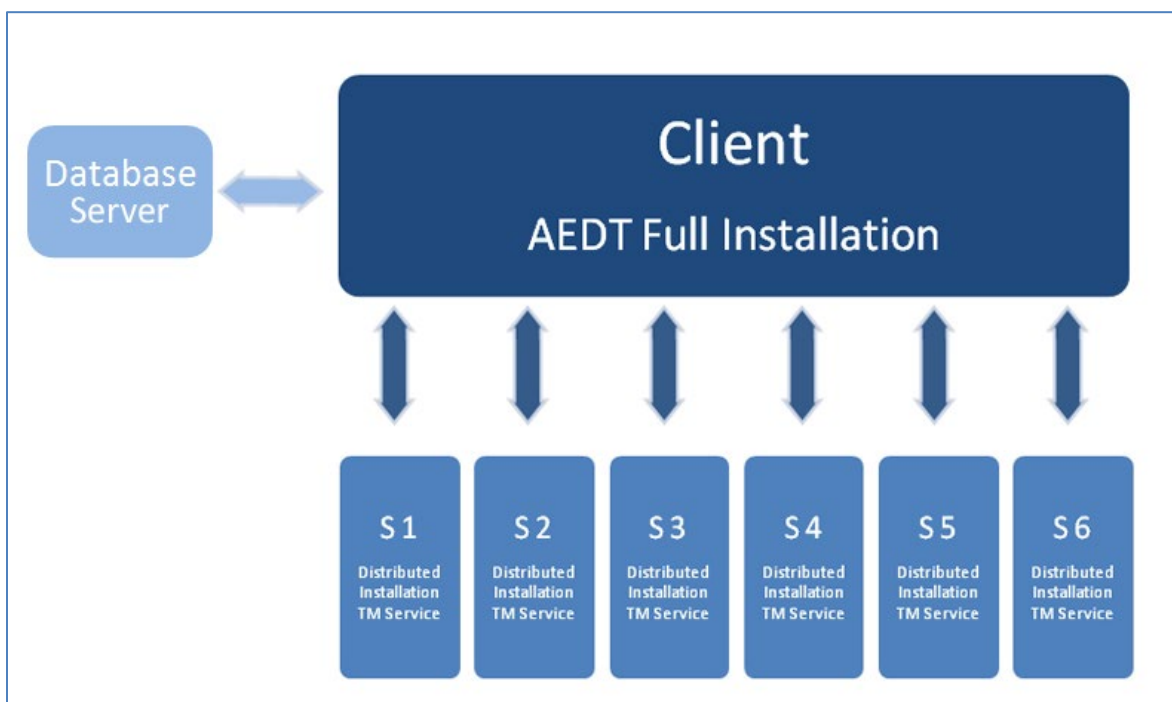
Figure 5-33 Distributed Processing

Figure 5-34 Distributed Processing with Separate Database Server

5.4.1   Setup AEDT Client

1. Install the entire AEDT system on the AEDT client, including Microsoft SQL Server, AEDT application, and AEDT databases. See sections 5.2 and 5.3.

2. Verify that the AEDT client can run a study successfully. This is an important verification step. If AEDT is not operational on a single machine, AEDT will not operate in distributed processing mode.

5.4.2   Setup Taskmaster Servers Running Distributed Processing Service

Repeat the following instructions for each remote server that is being utilized for distributed processing.

> AEDT Setup will start Microsoft Distributed Transaction Coordinator (DTC) service if it is not already started on the computer. The DTC provides services designed to ensure successful and complete transactions. The DTC service needs to be running on both client and server(s).

To install AEDT distributed processing service:

1. To start the installer, double-click the **Install AEDT 4a Distributed Processing.exe** file.

2. If the following software are not installed, the Prerequisites Setup Wizard will initiate installation of the required software.
    *   Microsoft .NET Framework 4.8
    *   Microsoft .NET 8.0.6 Windows Server Hosting[7]
    *   Microsoft .NET Desktop Runtime 8.0.20[8]

> Internet connection is required to download and install these prerequisites. If you cannot connect to the internet on the target machine, pre-download the prerequisites on a different machine, copy them to the target machine, and install the prerequisites before running the "Install AEDT 4a Distributed Processing.exe".

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[7] Download link: https://download.visualstudio.microsoft.com/download/pr/751d3fcd-72db-4da2-b8d0-709c19442225/33cc492bde704bfd6d70a2b9109005a0/dotnet-hosting-8.0.6-win.exe
[8] Download link: https://builds.dotnet.microsoft.com/dotnet/WindowsDesktop/8.0.20/windowsdesktop-runtime-8.0.20-win-x64.exe
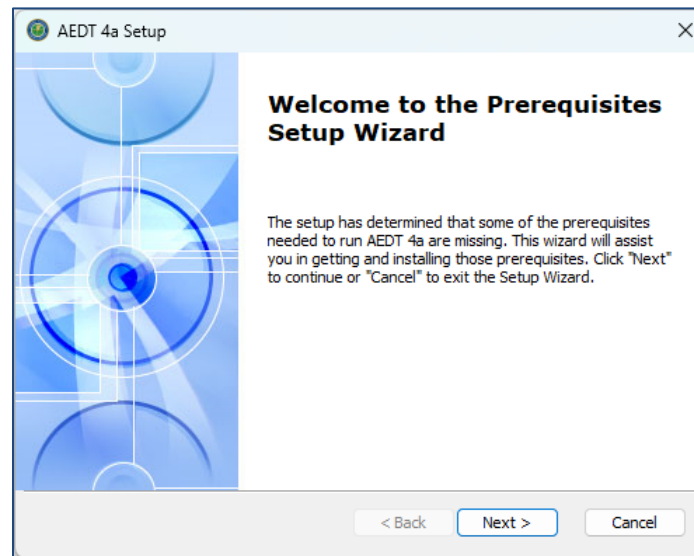
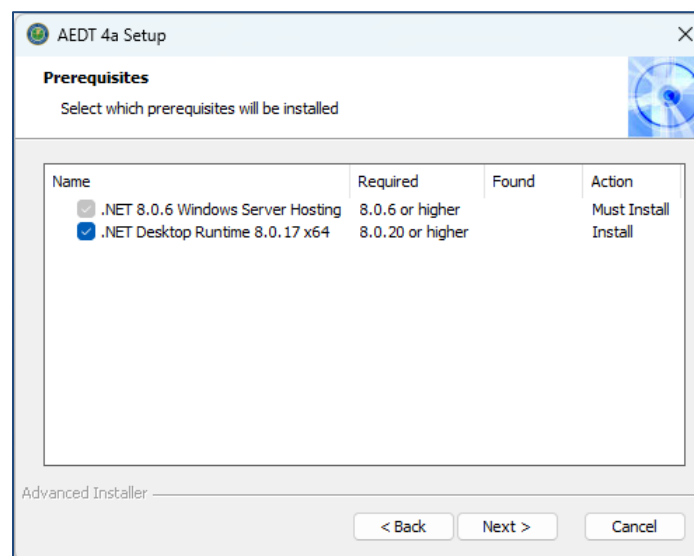**Figure 5-35 AEDT Prerequisites Setup Wizard**

Figure 5-36 AEDT Prerequisites Setup Wizard

Accept the license agreements and click *Install* to install the required software. The AEDT Setup Wizard will be displayed once the prerequisite installation is done.

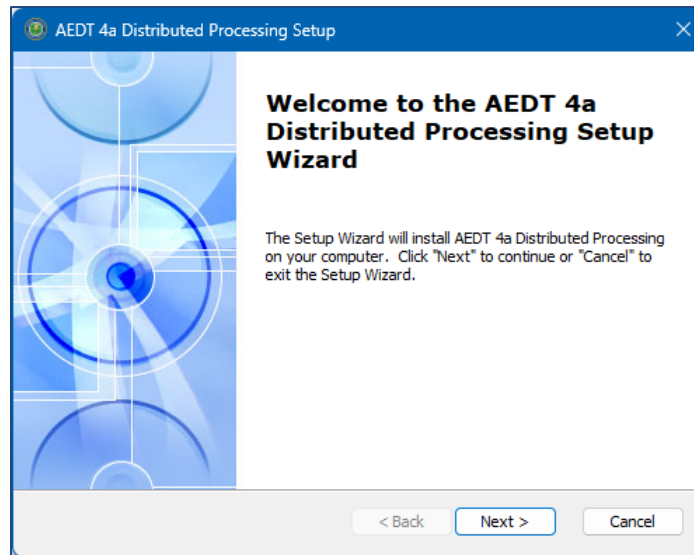3.   The AEDT Setup Wizard will open. Click *Next*.

Figure 5-37 AEDT Setup Wizard – Welcome

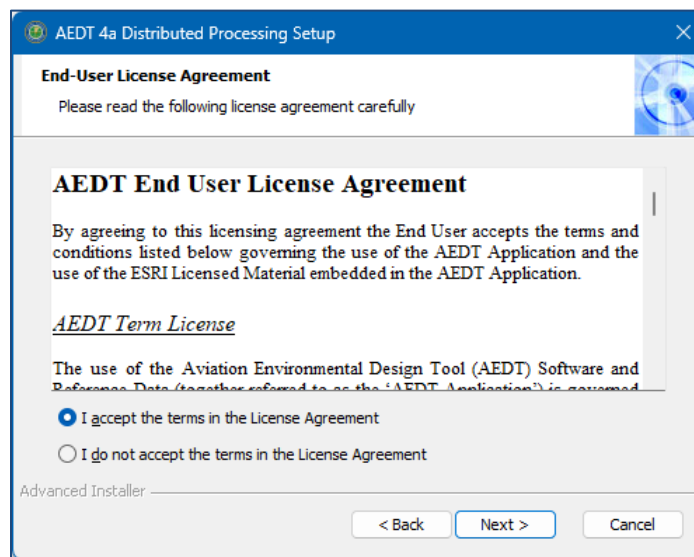4.   Read the license terms and click *I accept the terms of the license agreement*. Click *Next*.

Figure 5-38 AEDT Setup Wizard – License Agreement

5. Specify the user account that will be used to start the AEDT distributed processing service. You can use an existing user account or create a new user account. Click *Next*.

> The user account for starting the AEDT Distributed Processing Service can be either a local user or a network user.

> ⚠️ **The user account for the AEDT Distributed Processing Service must be added to the local** *Administrators* **group**. Please see Step 11 below.
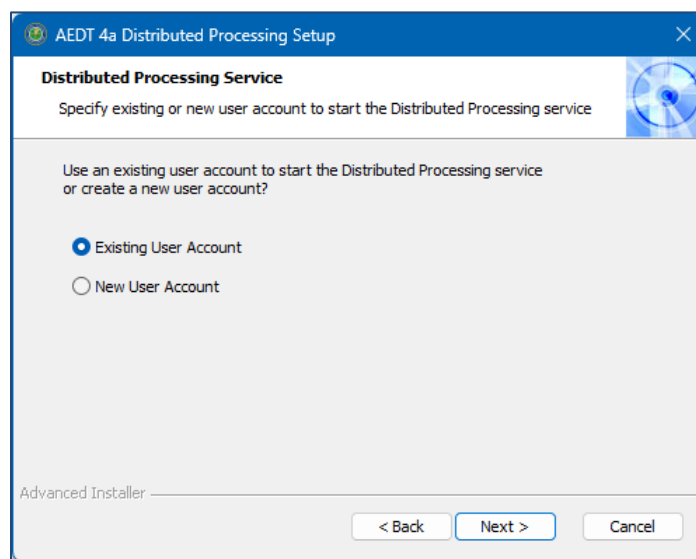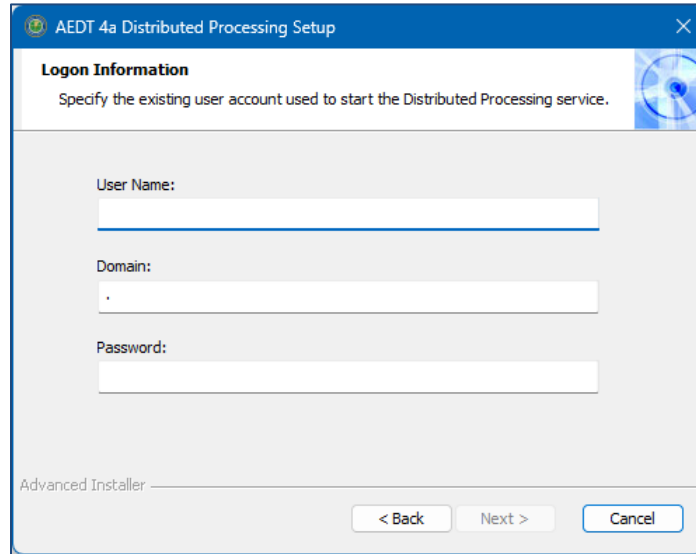
Figure 5-39 AEDT Setup Wizard – Specify Existing or New User Account

6. **Existing User Account:** Enter user name, domain, and password of an existing user account. The user must belong to the local *Administrators* group. Click *Next*. Verifying the account information may take a while.

> If the user account belongs to a local domain, enter a period (.) in the *Domain* field.
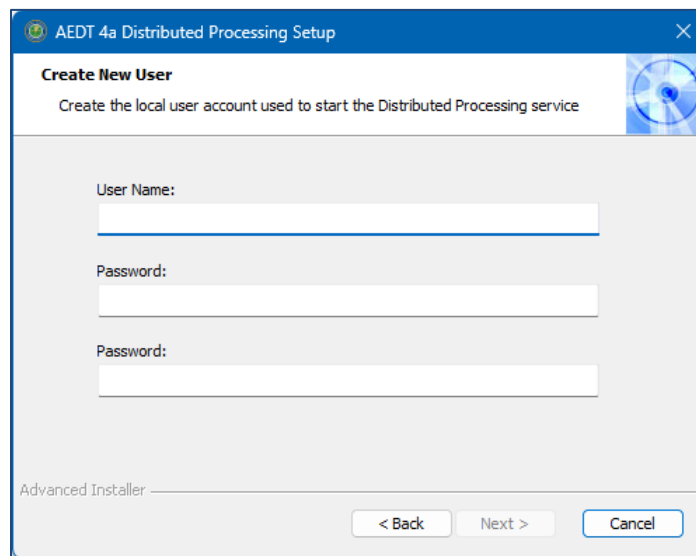
Figure 5-40 AEDT Setup Wizard – Specify Existing User Account

7. **Create New User:** Enter user name and password for a new local user account. Click *Next*.

> ⚠️ The password for the local user account must meet the **password policy requirements** on the local machine. Otherwise, the distributed processing service installation will fail (e.g., not being able to start the service); and you will need to re-start the installation.

Figure 5-41 AEDT Setup Wizard – Create New User

8. Click *Install* to start the installation. The installation progress will be displayed.
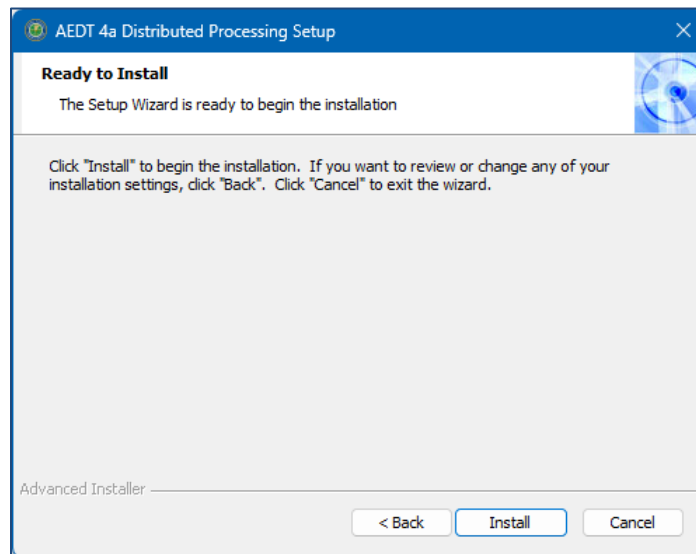

Figure 5-42 AEDT Setup Wizard – Ready to Install

16. The following prerequisites will be installed, if they are not already on the computer:

- Microsoft Visual C++ 2010 x86 Redistributable, 10.0.40219
- Microsoft Visual C++ 2015-2022 Redistributable (x64), 14.44.35211

Accept the license agreements and click *Install* to install the required software.

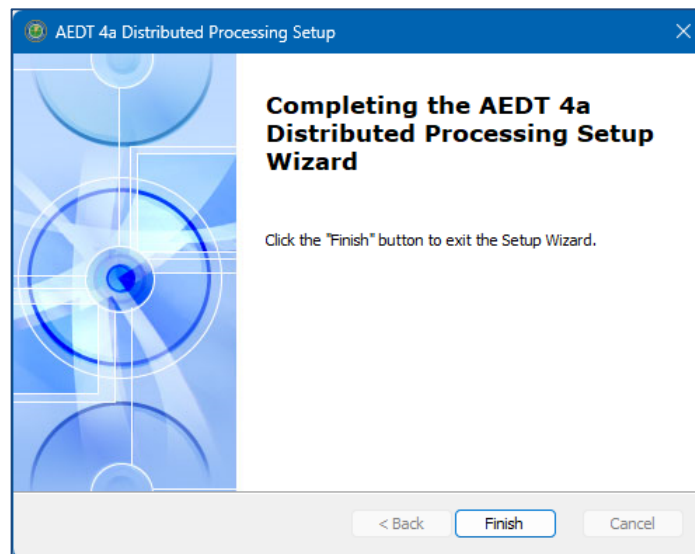9. Click *Finish* when installation is complete.

Figure 5-43 AEDT Setup Wizard – Installation Complete

10. The AEDT Distributed Processing Service is installed and automatically started. The files to support the service are installed under *C:\Program Files\FAA\AEDT 4a Distributed Processing*

> The Distributed Processing Service logs are written to the **aedt_TmService.log** under **C:\AEDT\Logs** folder.

11. Add the user account for the AEDT Distributed Processing Service to the local *Administrators* group. Otherwise, using distributed processing to run metric results with terrain will not work.
    - Click the *Windows Start* button, and enter "*lusrmgr.msc*".
    - The *Local Users and Groups* dialog opens.
    - Click the *Groups* on the left pane.
    - Double-click on the *Administrator* group to open it.
    - Add the user account for the AEDT Distributed Processing Service to the *Administrator* group.
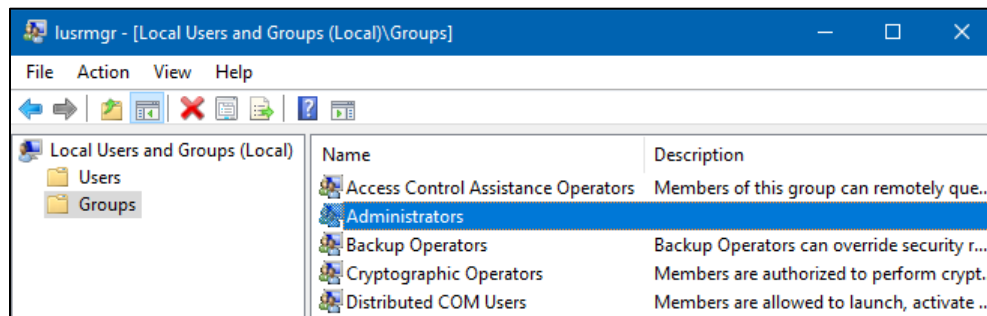   - Click OK to save your changes.

Figure 5-44 Local Users and Groups dialog

12. To view the AEDT Distributed Processing Service:
    - Click the *Windows Start* button, and enter "*services.msc*".
    - The *Services* dialog opens.
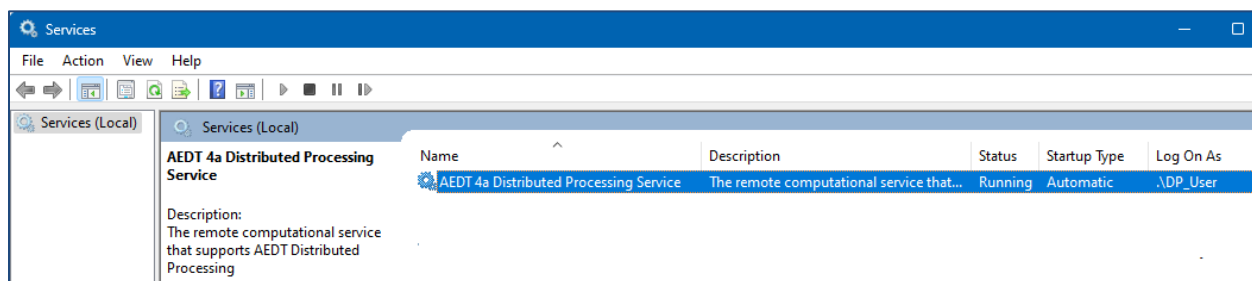   - Find the "AEDT 4a Distributed Processing Service".

Figure 5-45 Services Dialog

5.5 Manage AEDT Databases

The following AEDT system databases are installed as part of the complete AEDT installation. After installing AEDT, open the SQL Server Management Studio and verify that all the AEDT system databases are listed.

- AIRPORT
- FLEET
- STUDY
- STUDY_DULLES
- STUDY_IFSET
- STUDY_INM
- STUDY_NIRS
- STUDY_PVD
- STUDY_WXYZ

5.5.1 Connect to SQL Server Instance in SQL Server Management Studio

1. Open SQL Server Management Studio.

2. In the *Connect to Server* dialog box, enter or select the SQL Server instance name where AEDT databases are installed.

3. Select appropriate *Authentication* method.

4. Select appropriate *Connection Security* settings.
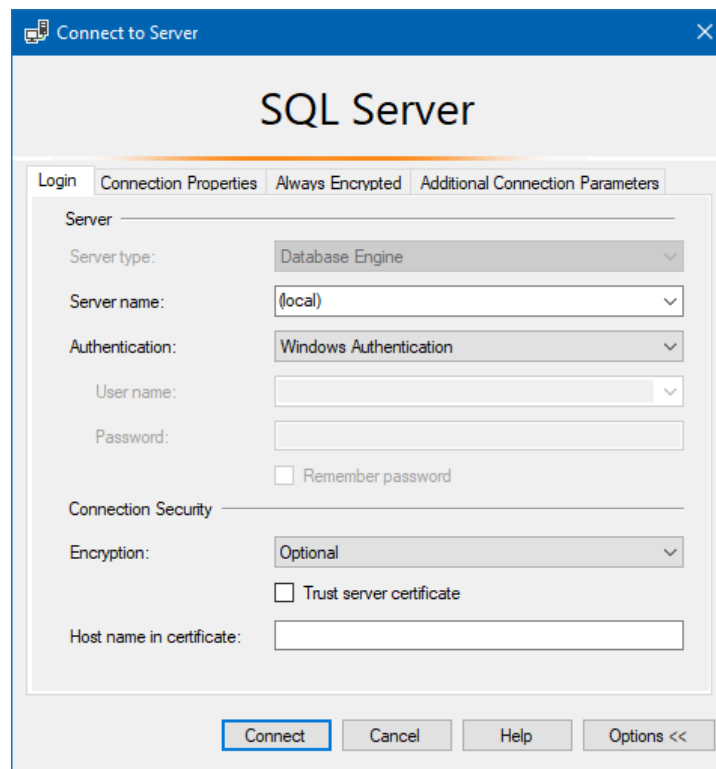
5. Click the *Connect* button.

Figure 5-46 Microsoft SQL Server Management Studio – Connect to Server Dialog Box

5.5.2 Verify AEDT System Database Versions

1. Open SQL Server Management Studio and connect to the SQL Server instance where AEDT databases are installed.
2. From the *File* menu, select *Open, File.*
3. Navigate to *C:\Program Files\FAA\AEDT4a\Script Files\InstallCheckDBversions.sql* and select *Open*.
4. Click the *Execute* button located on the toolbar.
5. Check the database versions displayed in the *Results* tab.

5.5.3 Backup SQL Server Database

1. Open SQL Server Management Studio and connect to the SQL Server instance where AEDT databases are installed.
2. In the *Object Explorer*, select the study database of interest.
3. Right-click on the database, and select *Tasks*, *Back Up…* to open the *Back Up Database* dialog box (Figure 5-47).
4. Verify that the *Backup type* is set to *Full*.
5. If an entry has already been added to the *Destination* field, select the entry and click the *Remove* button.
6. Click the *Add* button to open the *Select Backup Destination* dialog box.
7. Click the … button and browse to the desired location for storing the backup file.
8. Enter the desired file name in the *File Name* field, including the .bak extension. Click *OK*.
9. Click *OK* to close the *Select Backup Destination* dialog box.
10. Click *OK* to back up the database. A confirmation message will be displayed if the backup was successful.
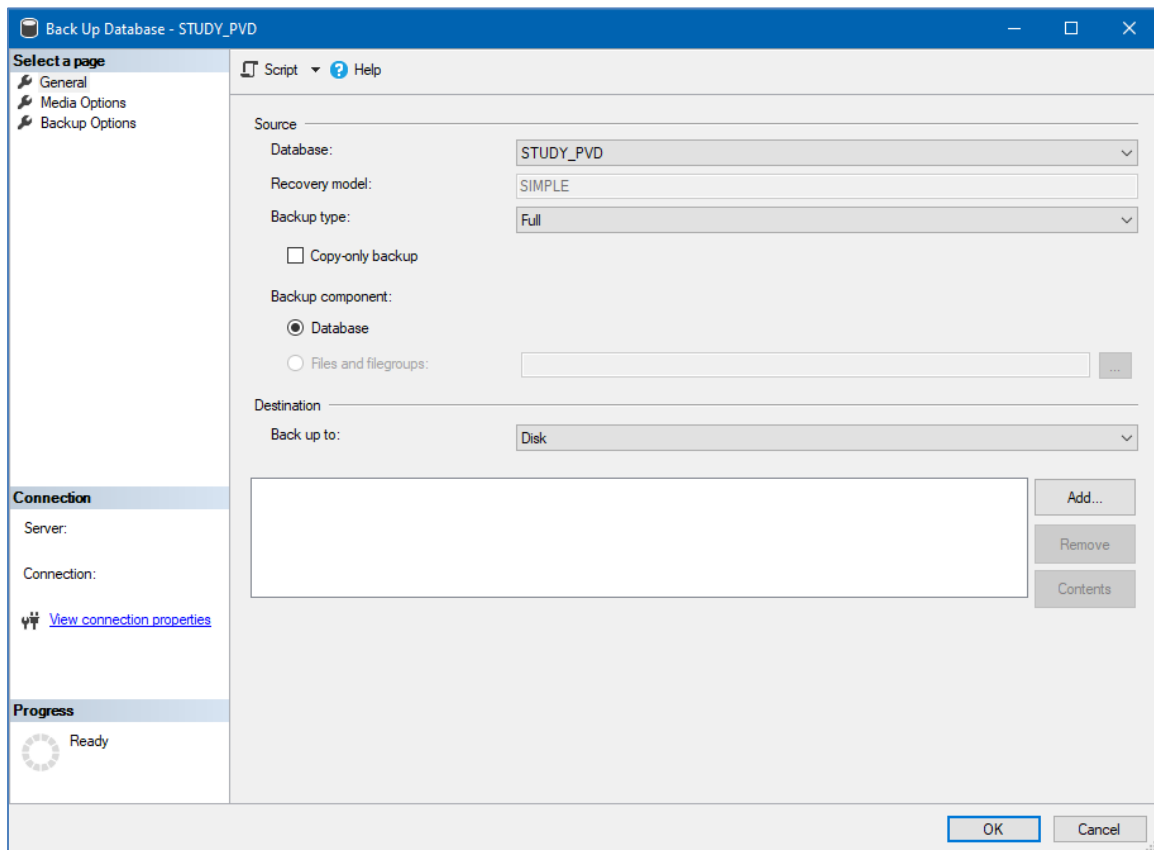
Figure 5-47 Microsoft SQL Server Management Studio – Back Up Database Dialog Box

5.5.4   Restore SQL Server Database

The SQL Server backup files (.bak) of the AEDT system databases are located in *C:\Program Files\FAA\AEDT4a\DatabaseBackups*.

1. Open SQL Server Management Studio and connect to the SQL Server instance where AEDT databases are installed.

2. Right-click on the Databases folder, and select *Tasks, Restore*, *Database*… to open the *Restore Database* dialog box (Figure 5-48).

3. Select the *Device* radio button, then click the … button to open the *Specify backup* devices dialog box.

4. Click the *Add* button. Browse to the location of the previously stored backup file, and click *OK*.

5. Click *OK* to close the *Specify backup* devices dialog box.

6. Select the *Restore* checkbox for the backup file.

7. Select the *Options* page from the left side of the *Restore Database* dialog box.

8. Check the *Overwrite the existing database (WITH REPLACE)* option.

9. Click *OK* to restore the database. A confirmation message will be displayed if the restore was successful.
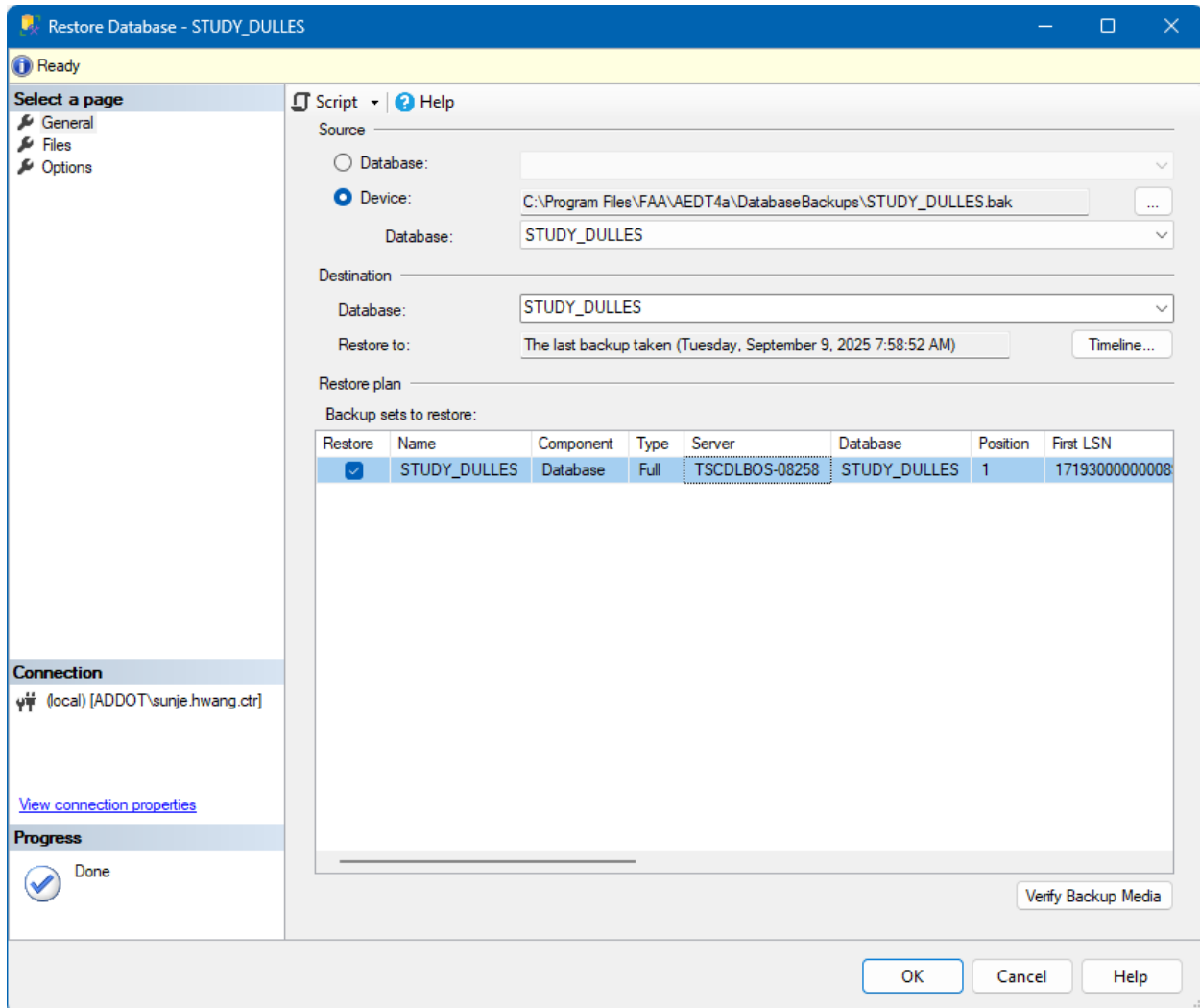
Figure 5-48 Microsoft SQL Server Management Studio – Restore Database Dialog Box

5.5.4.1 Known Issue with Restoring Fleet.bak File in SQL Server Management Studio

When restoring a backup file (.bak) that has more than 32 backups in the timeline, Microsoft SQL Server Management Studio (SSMS) may not restore the latest backup version. Please follow the steps below to avoid this known issue that affects restoring the Fleet.bak file in SSMS.

To restore the Fleet.bak file to the latest backup version:

1. In the SSMS *Restore Database* dialog, click the *Device* radio button, then select the Fleet.bak backup file from *C:\Program Files\FAA\AEDT4a\DatabaseBackups* folder.

2. Click the *Timeline* button (Figure 5-49).

3. Click the "Specific date and time" radio button, then click *OK* (Figure 5-50).
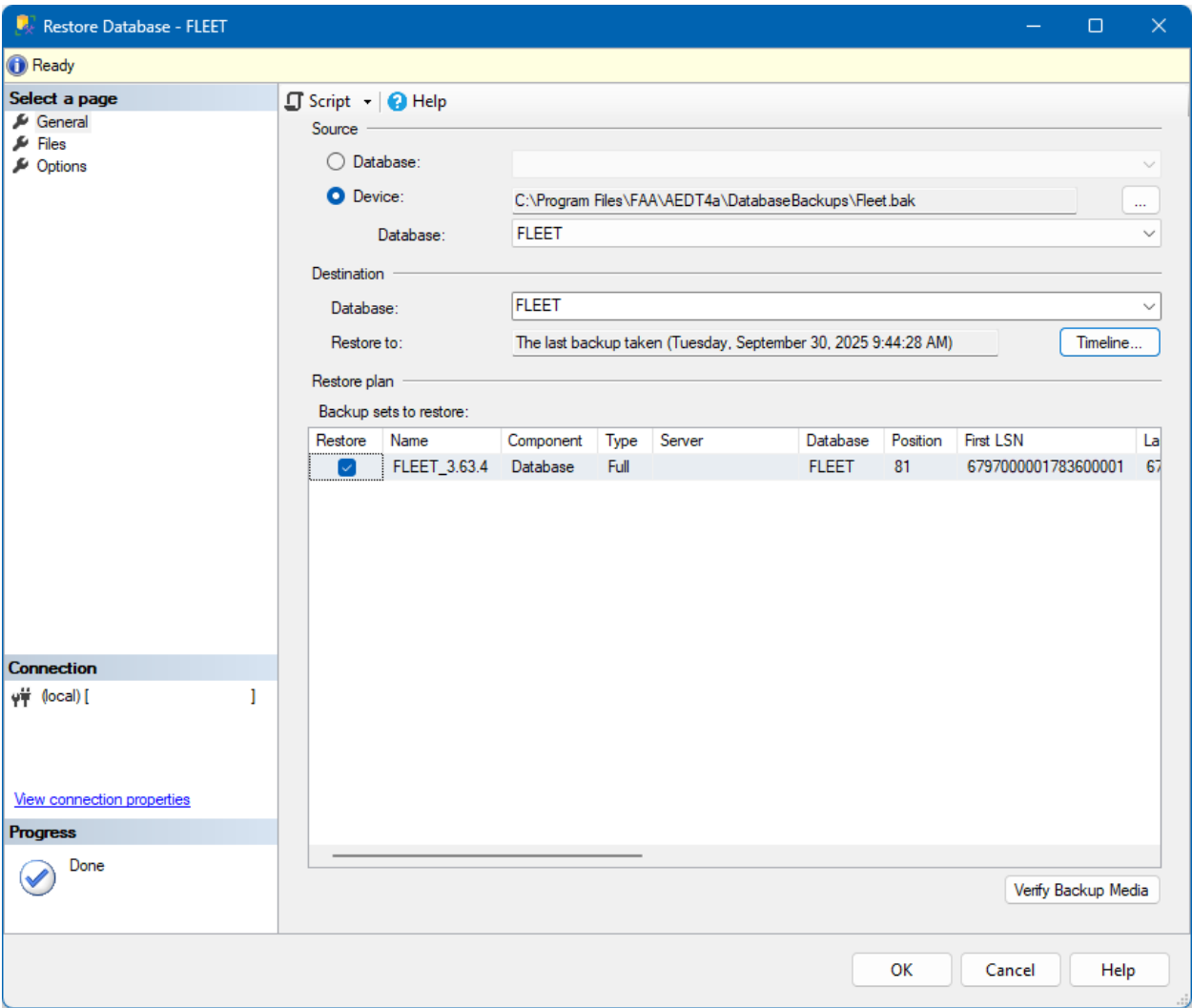
4. Click *OK*.

Figure 5-49 Microsoft SQL Server Management Studio – Restore Database Dialog Box, Timeline Button
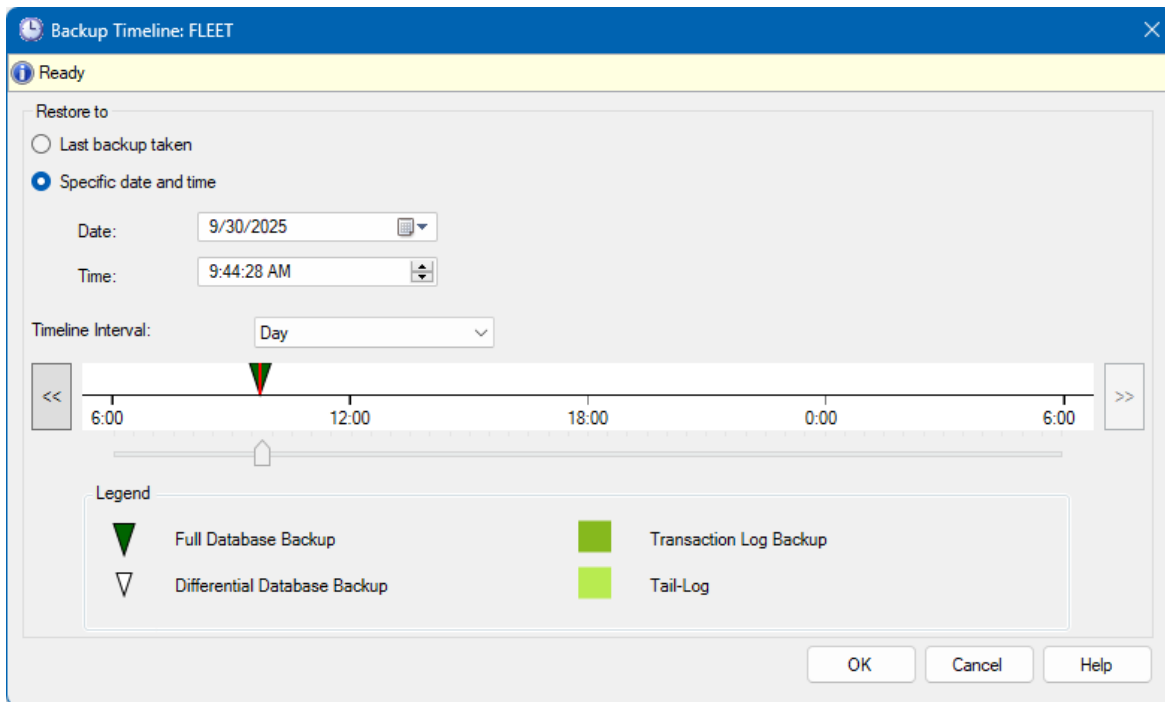
Figure 5-50 Microsoft SQL Server Management Studio – Backup Timeline Dialog Box

5.5.5 Delete SQL Server Database

AEDT study databases can be deleted in the SQL Server Management Studio. Exit the AEDT application before deleting an AEDT study database.

1. Open SQL Server Management Studio and connect to the SQL Server instance where AEDT databases are installed.
2. In the *Object Explorer*, select the database of interest.
3. Right-click on the database, and select *Delete* to open the *Delete Object* dialog box (Figure 5-51).
4. The "Delete backup and restore history information for databases" checkbox is selected by default. Change this setting as desired.
5. Select the "*Close existing connections*" checkbox.
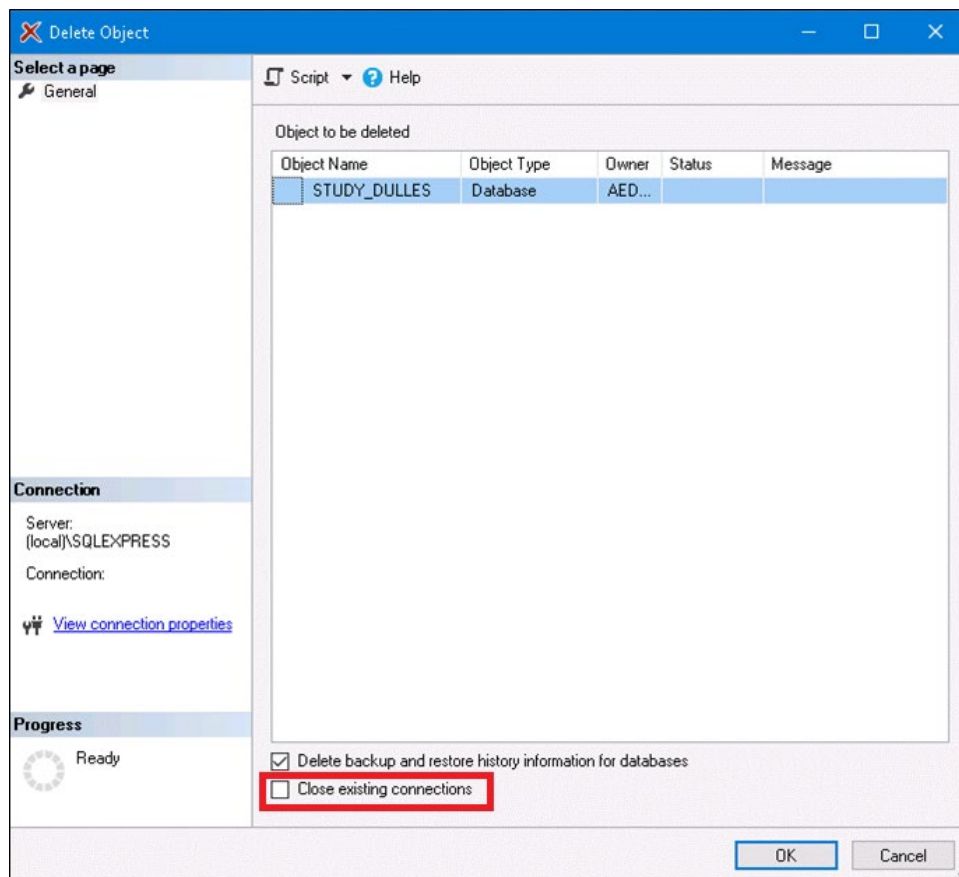6. Click *OK* to delete the database and close the dialog box.

Figure 5-51 Microsoft SQL Server Management Studio – Delete Object Dialog Box

5.6   Steps to Uninstall AEDT

> ⚠️ Uninstalling AEDT will also remove the system databases and sample study databases listed below. If you want to preserve any changes you made to the sample studies, create a backup of the database before uninstalling AEDT.
> - AIRPORT
> - FLEET
> - STUDY
> - STUDY_DULLES
> - STUDY_IFSET
> - STUDY_INM
> - STUDY_NIRS
> - STUDY_PVD
> - STUDY_WXYZ

> 📝 Before uninstalling AEDT, save desired files from the AEDT data folder (e.g., *C:\AEDT4a*) and from the study output directories – *C:\AEDT4a\DATA\[User name]\[Study name]@[SQL Server Instance Name]\Output_Files* in a different location.

To uninstall AEDT:

1. Navigate to *Start*, *Control Panel*, and select *Programs and Features*.

2. Select *AEDT 4a* from the program list and click *Uninstall*.

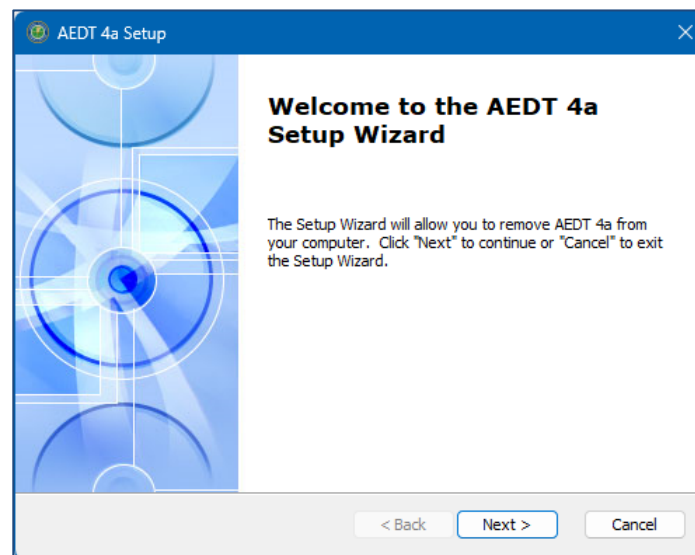3. The Setup Wizard will open. Click *Next* to continue.

Welcome to the AEDT 4a Setup Wizard

The Setup Wizard will allow you to remove AEDT 4a from your computer. Click "Next" to continue or "Cancel" to exit the Setup Wizard.

| < Back | Next > | Cancel |

Figure 5-52 AEDT Setup Wizard

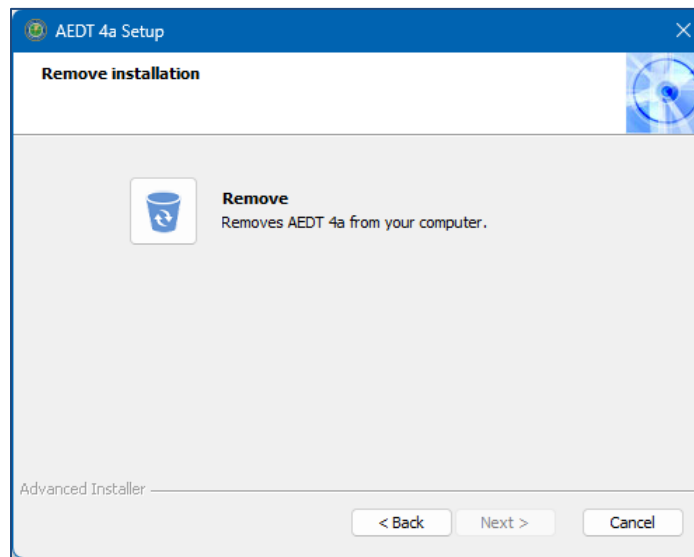4. Click the *Remove* button to continue.

Figure 5-53 AEDT Setup Wizard – Remove Installation

5. Click the *Remove* button to uninstall AEDT from the computer.
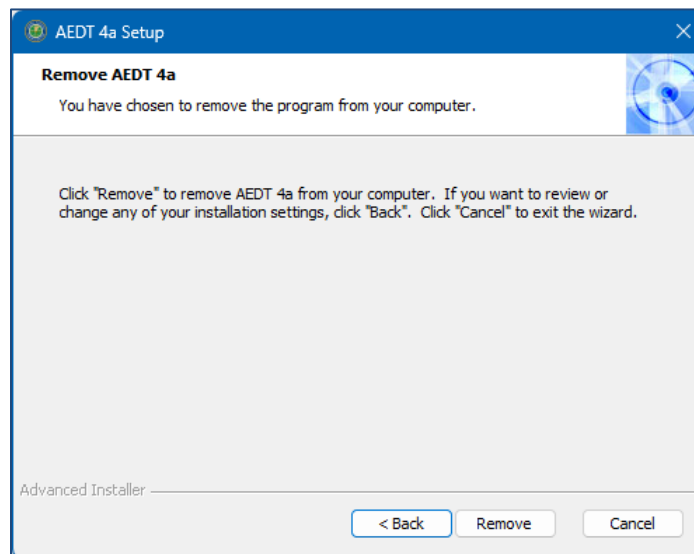

Figure 5-54 AEDT Setup Wizard – Remove

6. The installer will prompt to delete the Census data files. This refers to the Census data folder used for the Population Exposure Report (default location is C:\AEDT4a\demographics_module\source_data\Census_2020).
   - Click *Yes* to remove the Census data folder.
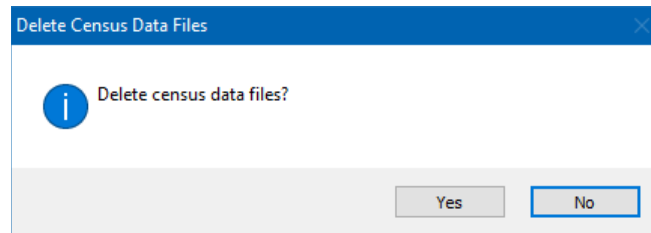   - Click *No* to preserve the Census data folder.

Figure 5-55 AEDT Setup Wizard – Delete Census Data Files Dialog

7. The status bar will display an estimated time to finish removing the program.

8. When the uninstallation is complete, click the *Finish* button to exit the Setup Wizard.
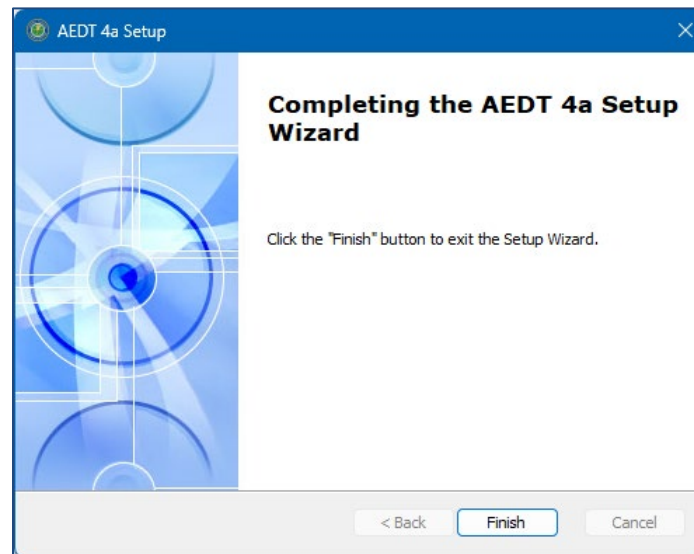

Figure 5-56 AEDT Setup Wizard – Finish

9. Check the following folders and manually delete them as necessary.
   - AEDT installation folder – e.g., C:\Program Files\FAA\AEDT4a
   - AEDT data folder – e.g., C:\AEDT4a

10. Check the SQL Server instance and verify that the AEDT system and sample databases were removed.
    a. Open SQL Server Management Studio and connect to the SQL Server instance where AEDT databases were installed.
    b. In the *Object Explorer*, expand the Databases folder and confirm that the AEDT system and sample databases are no longer listed. If the AEDT system databases remain, delete them.

> When another application is connected to AEDT databases, uninstalling AEDT will not remove any connected databases on the server. If this happens, delete the databases manually in Microsoft SQL Server Management Studio.