AMOS Business Suite

Version 10.3.00

Installation Guide



Revision 1, November 2019

Copyright

Copyright © 2019 SpecTec Group Holdings Ltd., Limassol, Cyprus World rights reserved. No part of this publication may be stored in a retrieval system, transmitted or reproduced in any way, including but not limited to photocopy, photography, magnetic or other record, without the prior agreement and written permission from SpecTec Group Holdings Ltd. Documentation office.

Furthermore, unless specifically stated in the Software Purchase Agreement duly signed by both SpecTec Group Holdings Ltd. and the user, the user will not distribute, reproduce, or allow access to by a third party this documentation, without the prior, written approval from SpecTec Group Holdings Ltd. Documentation office.

Whenever an authorised copy is made of all or any part of the documentation, all titles, copyright notices, patent notices or other proprietary markings must also be reproduced in full and included with the copied product. The User shall not alter or remove any copyright notices, patent notices or other proprietary markings affixed to or distributed throughout the documentation.

Disclaimer

SpecTec Group Holdings Ltd. makes every effort to ensure the information contained in this document is correct at the time of printing. However, as products of SpecTec Group Holdings Ltd. are constantly being updated and maintained, discrepancies may arise from time to time between this documentation and the Product to which it applies. SpecTec Group Holdings Ltd. makes no representations or warranties regarding the content or accuracy of the documentation, and specifically disclaims any implied warranties of merchantability of fitness for any particular purpose. Information in this documentation may change at any time and does not represent a commitment on the part of SpecTec Group Holdings Ltd. SpecTec Group Holdings Ltd. reserves the right to make documentation changes from time to time in regards to style, layout, and content without any obligation by SpecTec Group Holdings Ltd. to notify any person of such changes or provide users with updated documentation revisions. Furthermore, the product described in this documentation may change without notice.

Trademarks

All brand and product names to be found in this document or the product to which it applies are trademarks of their respective companies.

CONTENTS

CHAPTER 1 Introduction

The Installation Procedure 2
In This Guide 2
Minimum System Requirements 2
Related Documentation 3

CHAPTER 2 Installing AMOS Business Suite

Introduction 6
Server or Standalone 6
Client 8
Installation Using a Script File (Silent Installation) 9
Generating the Setup.iss File 9
Performing a Silent Installation 11
Uninstalling AMOS Business Suite 12

CHAPTER 3 Setting Up Your DBMS

Introduction 14
Sybase SQL Anywhere 14
Creating an AMOS Database for SQL Anywhere 14
Configuring the Network Server/Client Setup 17
Configuring the Standalone Server/Client Setup 25
Sybase SQL Anywhere Authentication Support 27
Microsoft SQL 28
Compatibility - ODBC & Driver Manager 28
Creating an ODBC Data Source 29
Creating an AMOS Database for Microsoft SQL Server 33
Reconfiguring the ODBC Source 35
Oracle 37
Creating and Configuring an Oracle Database 37
Creating an AMOS Database for Oracle 38
Modifying the amosw.ini File 40
Sybase SQL Anywhere 40
MS SQL 41
Oracle 42
Defining the Installation Directory in AMOS 42

SpecTec

CHAPTER 4 Upgrading a Database

When You Upgrade AMOS 44
Silent Database Upgrade 45
AMOSDBUtil and Customised Triggers 47

CHAPTER 5 Other Considerations

Scrambling the Database Connection Password 50
Copying Data - Configuring DBCopy 52
Sending Email: Installing Ghostscript 53
Custom Login Screen 57
Auto Login 58
Trouble-Shooting 60

APPENDIX A AMOS Unicode Compliance

Introduction 62
Why Are We Going To Support Unicode? 62
Overview 62
Limitations 62
The Situation Today 62
Advantages of Unicode 63
What Does This Mean to Existing Customers? 63
Database Schema Changes 63
Data Truncation 63
Database Upgrade 63
Database Unicode Field Length Compliance Check 63
Database Requirement for Unicode 63
Heterogeneous Fleet Environments 64
Unicode Collation: Upgrading and Migrating Databases 65
Terminology 65
What Does This Mean to Our New Customers? 65
What About Database Replication? 65
General Note 65
Native Import/Export 65
AMOS Replication 65
AMOS Replicator 65
What Else is Important? 66
Questions or Concerns 66

Your AMOS Support Network

An up-to-date list of email addresses and telephone numbers is available on the Contact Support page of our website, at www.spectec.net

Americas (US)

Email : support.us@spectec.net

Phone : USA +1 (754) 273-9131

Asia-Pacific (APAC)

Email : support.ap@spectec.net

Phone : Singapore +65 622 071 16

Northern Europe (NEMEA)

Email : support.nemea@spectec.net

Phone : United Kingdom +44 161 888 2299

Southern Europe, Middle-East and Africa (SEMEA)

Email : support.semea@spectec.net

Phone : Italy +39 077 351 0205

Russia (CIS)

Email: support.russia@spectec.net

Phone: Russia +7 812 324 5110

CHAPTER 1

Introduction

This User Guide describes the installation procedure for the AMOS Business Suite program.

AMOS Business Suite is a client/server application, which may be run on several different Database Management Systems (DBMS). The system setups are described in this manual.

This chapter includes the following topics:

The Installation Procedure 2
In This Guide 2
Minimum System Requirements 2
Related Documentation 3

SpecTec

The Installation Procedure

You can select to install one of the following database engines:

- **Sybase SQL Anywhere**, on which you may choose between a stand-alone and a client/server installation.
- **Microsoft SQL Server**
- **Oracle Enterprise Server**

AMOS Business Suite supports these platforms within their own boundaries.

When installing AMOS Business Suite, the procedure you follow will vary according to which DBMS you install. In general:

1. Start by making sure the selected Database Management System (DBMS) has been installed. Refer to the documentation for the relevant DBMS.
2. Install the AMOS Business Suite application. See Chapter 2.
3. Configure the settings needed to allow AMOS to run against your DBMS, and create an empty AMOS database using the AMOSDBUtil. See Chapter 3.

In This Guide

Other topics which may be useful during installation and afterwards are documented in Chapters 4 and 5. These include:

- upgrading your AMOS database;
- scrambling the database connection password;
- using the DBCopy utility program to copy data from one database to another;
- installing Ghostscript to send e-mail;
- tips for trouble-shooting.

As of version 10.2.00, AMOS Business Suite supports entry of Unicode data. See Appendix A at the back of this guide, for more information about unicode data and what this entails for both new and existing SpecTec customers.

Minimum System Requirements

To run AMOS Business Suite satisfactorily it is important that your system meets or exceeds the following minimum specifications:

Server	Client
50 GB hard drive space 4 GB of RAM memory 100 Mbit/s LAN network connection CPU @ 2.66 GHz Using a high-speed hard drive (15.000 rpm) is recommended in a RAID system	500 MB free hard drive space 2 GB of RAM memory 100 Mbit/s LAN network connection CPU @ 1.66 GHz An SSD hard drive makes the system faster, but is not mandatory. Minimum screen resolution is 1024 x 768.

Refer to the Release Notes for the AMOS Business Suite version to be installed for the supported versions of Operating Systems and Database Management Systems.

Refer to DBMS and Server OS specifications for the client and server system requirements.

Related Documentation

- The *AMOS Business Suite User Guides* are written for regular users of the application, and are task oriented. A separate manual is available for each Business Suite module.
- The *AMOS Business Suite Reference Manual* describes contains general topics relating to the configuration and administration of your AMOS Business Suite installation.

CHAPTER 2

Installing AMOS Business Suite

This chapter includes the following topics:

Introduction 6
Server or Standalone 6
Client 8
Installation Using a Script File (Silent Installation) 9
Uninstalling AMOS Business Suite 12

SpecTec

Introduction

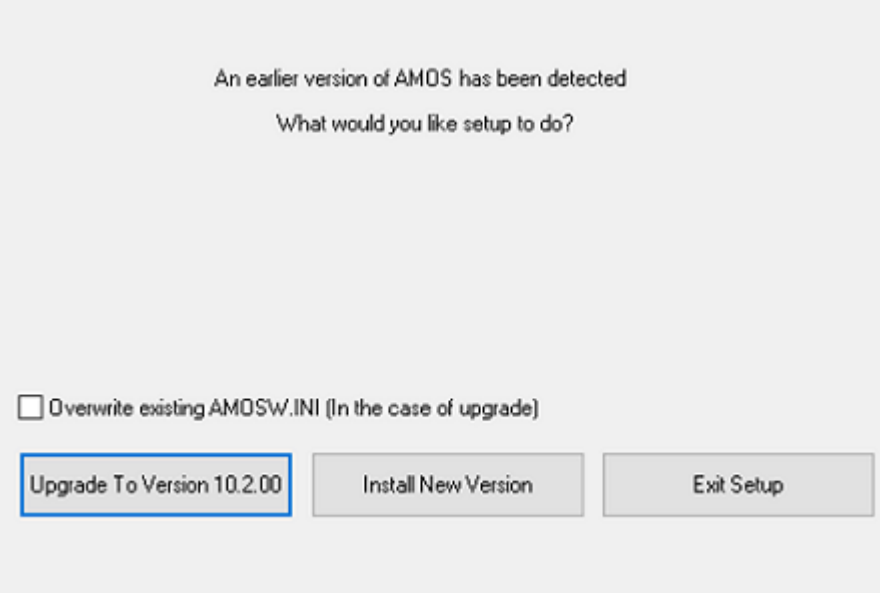
This Chapter describes how to install the AMOS Business Suite program.

- To use a network server/client setup, install the server version first and then install AMOS on each client machine. See "Server or Standalone" below and then "Client" on page 8.
- Otherwise, follow the instructions in "Server or Standalone" below to install the standalone version.
- (Optional) See "Installation Using a Script File (Silent Installation)" on page 9 about how to perform a silent installation.

Once you have completed the installation, turn to the section in Chapter 3 which describes how to create an empty AMOS Business Suite database on your selected database platform and configure your DBMS.

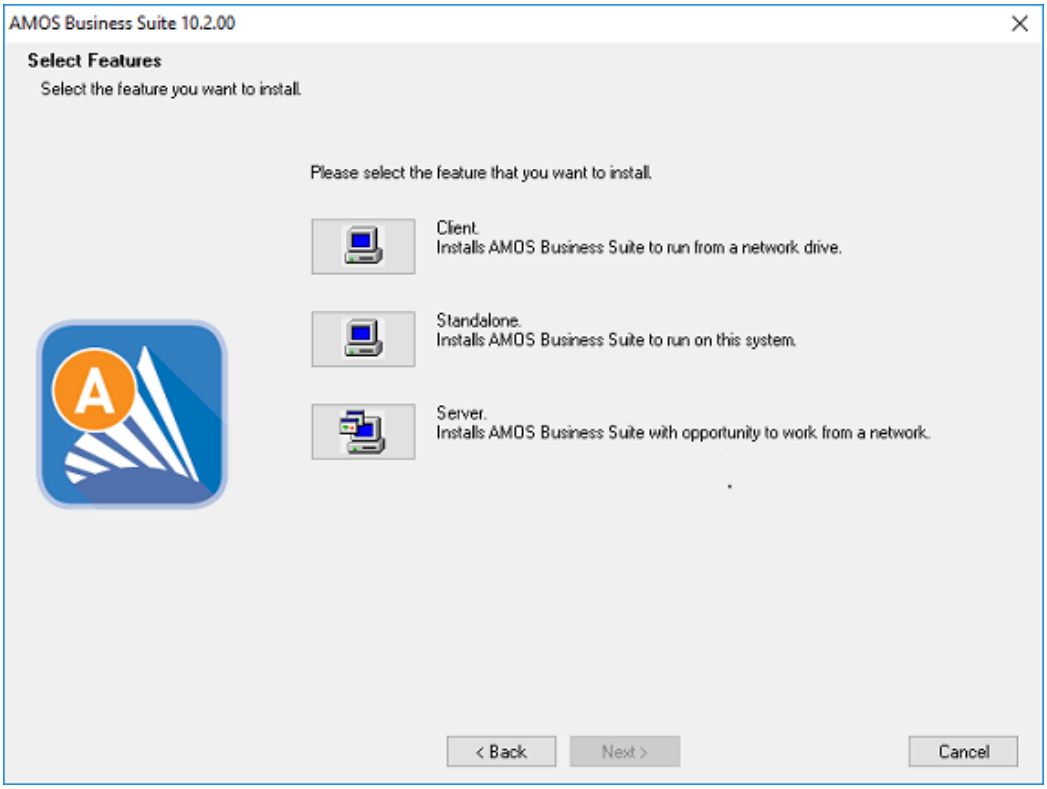
Server or Standalone

1. Start Windows Explorer and locate the AMOS Business Suite program installation set.
2. Right-click on the Setup.exe file and click Run as Administrator. Read the Welcome text and click **Next>** to continue.
3. If the install wizard detects an existing AMOS installation you can choose whether to upgrade it or create a new installation:

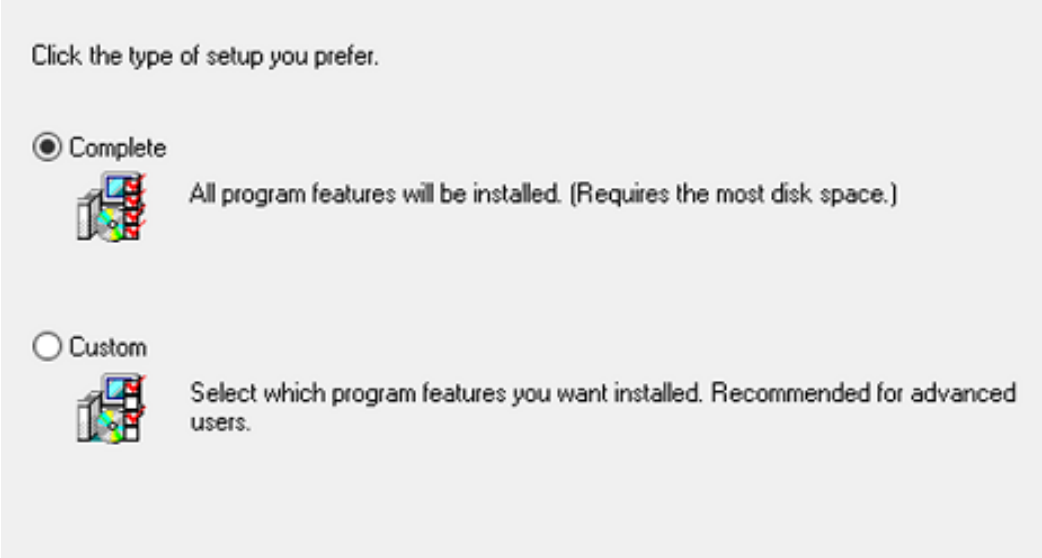


4. During upgrade of an existing installation, you can **Overwrite** the amosw.ini file. Click the **Upgrade** button and the process is automatic, with the option to restart upon completion.
5. Otherwise, click **Install New Version**.
6. Choose:
   - **Server** to install the server version in a network server/client setup. The program folder will be shared on the network automatically.

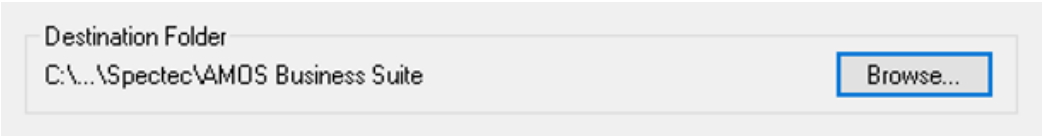
     Or
   - **Standalone** to install the standalone version where the personal server/client system runs on your local machine.



7. Choose a **Complete** or **Custom** installation:



8. You can leave the default **Destination Folder** or **Browse** to an alternate location to install AMOS:

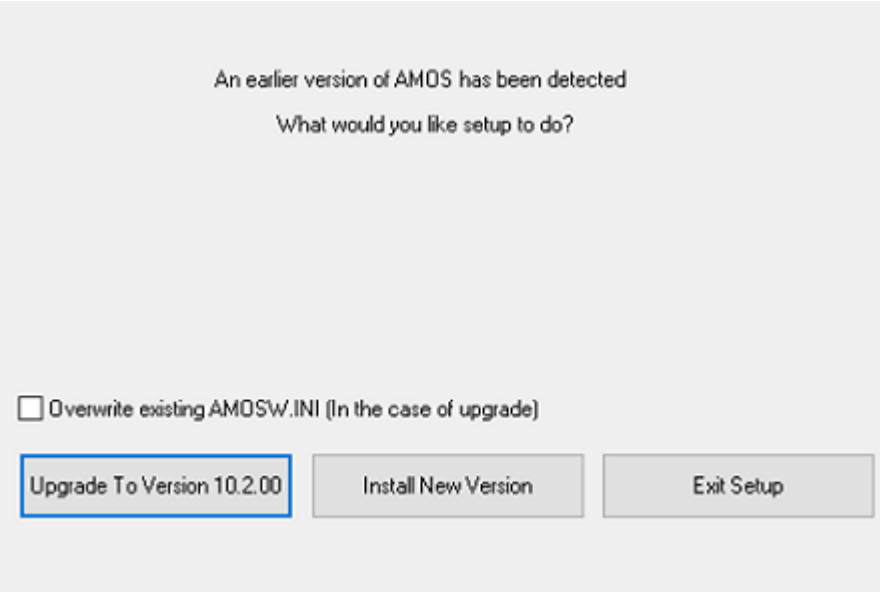


9. Click **Next**. If you chose a custom installation, select the features you want to install. Otherwise, review the current settings.
10. Click **Next** to start the installation.
11. When it is complete, you have the option to restart the computer now or later. Click **Finish** to exit the setup.

The AMOS Business Suite is now installed.

Client

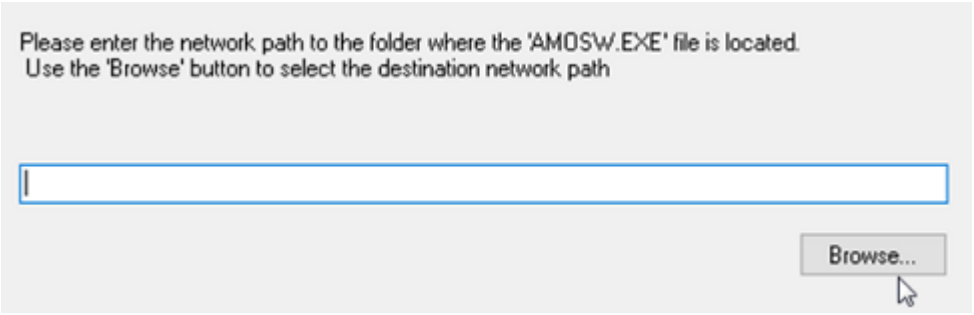
1. Start Windows Explorer and locate the AMOS Business Suite program installation set.
2. Right-click on the Setup.exe file and click Run as Administrator.
3. Read the Welcome text and click **Next >** to continue.
4. If the install wizard detects an existing AMOS installation you can choose whether to upgrade it or create a new installation:



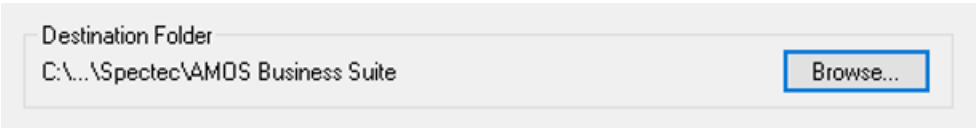
   During upgrade of an existing installation, you can **Overwrite** the amosw.ini file. Click the **Upgrade** button and the process is automatic, with the option to restart upon completion.

   Otherwise, click **Install New Version**.

5. Choose **Client** to install the client version on client machines[1].
6. Enter the network path to the amosw.exe file on the server:



7. You can leave the default **Destination Folder** or **Browse** to an alternate location to install AMOS:



8. Click **Next** to start the installation.
9. When it is complete, you have the option to restart the computer now or later. Click **Finish** to exit the setup.

[1] Make sure to install AMOS on the server first.

The AMOS Business Suite is now installed.

Installation Using a Script File (Silent Installation)

If you plan to install the AMOS Business Suite with an identical setup into many PCs - for example on a number of workstations in the head office - then during the first installation you can create a setup.iss script file. This script file can then be used during subsequent installations to tell the installation wizard what settings to input. You therefore only need to start the setup.exe file, and the remainder of the installation and setup will proceed without you needing to interact with the PC.

If you copy the script file and the installation set and send them to another site, someone at that site will be able to install the AMOS Business Suite onto their PC with the identical setup.

Generating the Setup.iss File

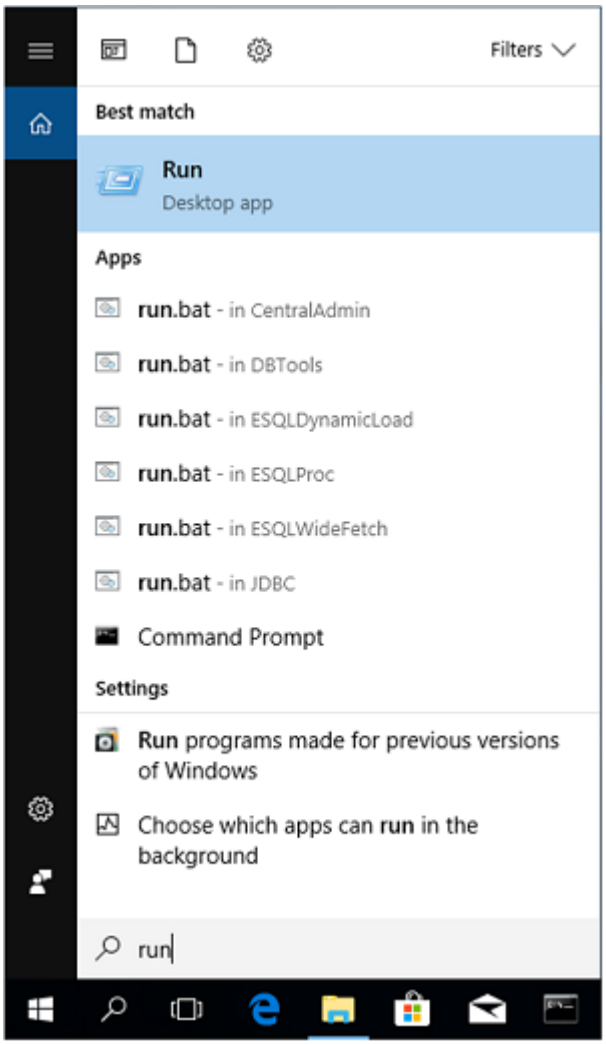
The first step in a silent installation is generating the setup.iss file. To do this you need a standard AMOS Business Suite installation set.

Before you begin:

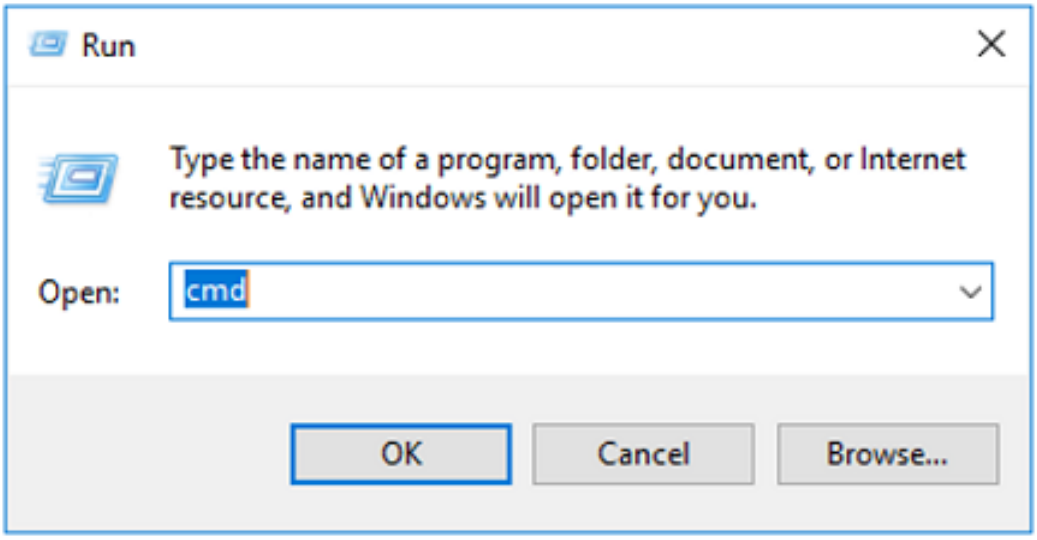
- Check that AMOS is not already installed on the PC. If it is, remove it.
- Ensure there are no other programs running on your PC.

In the following example, the AMOS installation set is located in the folder C:\My Installation Sets.

1. Click the Windows **Start** button and select **Run**.

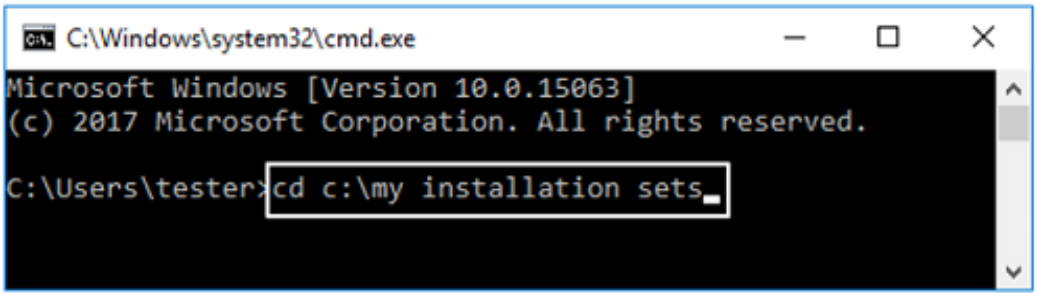


2. Type cmd into the **Open** field in the Run dialog, and click **OK**. Be sure to create the task with administrative privileges.

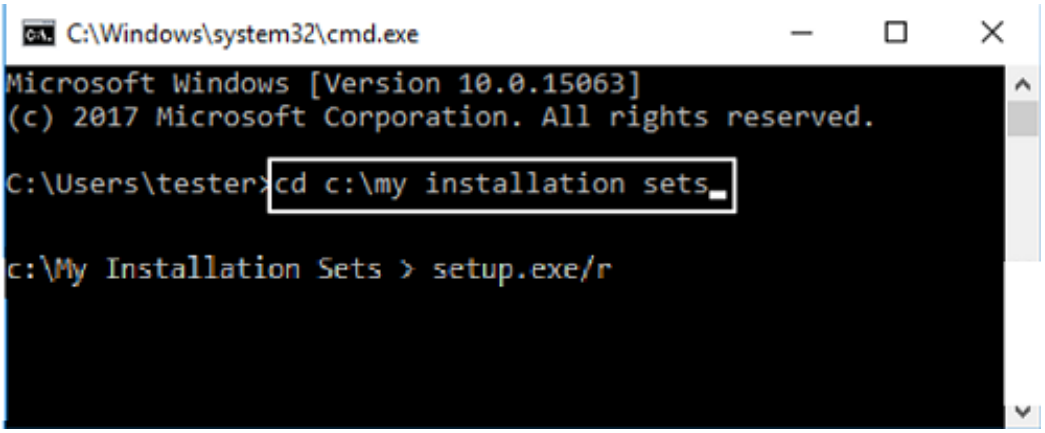


3. The command prompt opens. Type cd, and the location of the directory containing the installation set on the command line:

   cd c:\my installation sets



4. Press **Return**.
5. Type the following command on the next line: setup.exe /r



6. The setup.exe command starts the installation wizard; the /r command instructs the system to record the inputs you make to the system while the installation progresses.
8. Press **Return**. This starts up the AMOS installation wizard.
9. Follow the instructions and complete the AMOS installation.
10. Re-start your computer upon completion.
11. After re-starting, you will find the setup.iss file in the Windows directory (C:\Windows\).

13. Copy the setup.iss file into the same directory as contains the setup.exe file - in this example, C:\My Installation Sets.
14. You can now copy the files in this directory and use them to perform the same installation on other computers.

Performing a Silent Installation

Note: To perform a silent installation on the same computer that you used to generate the setup.iss file, you have to un-install the existing AMOS Business Suite installation first.

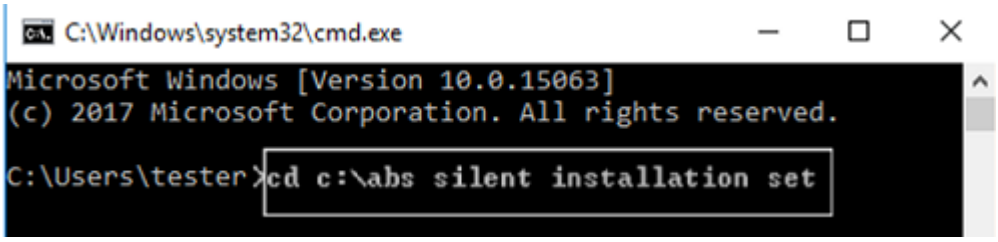
When you run a silent installation no sign will be given onscreen to indicate that anything is happening. All settings, file path selections etc. will be made automatically by the setup.iss file, and the resulting installation will be identical to the one on the PC where you created the setup.iss file.

In the following example, the AMOS installation set with the setup.iss file, is located in the folder C:\ABS Silent Installation Set.

To perform the silent installation on another computer:

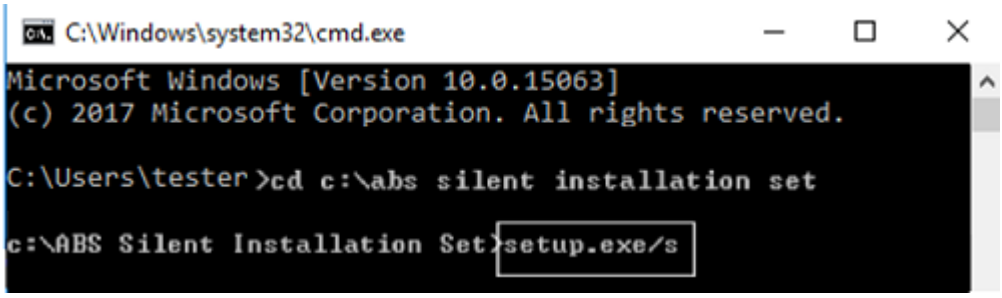
1. Download/copy the installation set and the setup.iss file into an appropriate folder on that computer.
2. Click the **Start** button and select **Run**.
3. Type cmd into the **Open** field on the Run dialog and click **OK**. Be sure to create the task with administrative privileges.
4. The command prompt opens. Type cd, and the location of the directory containing the installation set on the command line:

   cd c:\abs silent installation set



5. Press **Return**.
6. Type the following command on the next line:

   setup.exe /s

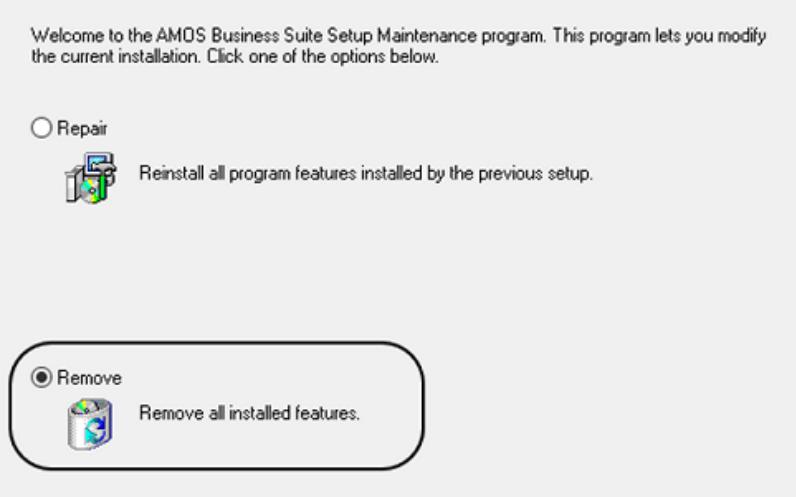


7. The setup.exe command starts the installation; the /s command instructs the system to run the installation in silent mode.
8. Press **Return**. The installation will proceed without indication that anything is happening. On completion, the computer will restart.

Uninstalling AMOS Business Suite

There are two ways to uninstall AMOS:

1. Locate and double-click the Setup.exe file in the installation set.



2. Select **Remove** and confirm by clicking on **OK** - the program does the rest.

Or, open the Control Panel and use the Add/Remove Programs utility.

Note: Do not attempt to remove the program by simply deleting the folder containing the AMOS files as this may adversely affect your system.

CHAPTER 3

Setting Up Your DBMS

This chapter includes the following topics:

Introduction 14
Sybase SQL Anywhere 14
Microsoft SQL 28
Oracle 37
Modifying the amosw.ini File 40
Defining the Installation Directory in AMOS 42

SpecTec

Introduction

AMOS Business Suite supports three DBMSs:

- Sybase SQL Anywhere
- Microsoft SQL Server
- Oracle

This Chapter covers the procedures you need to follow to setup your DBMS, create a new AMOS database, and run AMOS successfully on the selected DBMS.

Database Isolation Levels

The required database isolation level for AMOS Business Suite on all platforms is 'Read Committed'. SpecTec does not support any other isolation levels.

Note: For newer versions of MS SQL there is another isolation level 'Read Committed Snapshot'. This performs the same [= row locking] as 'Read Committed' on the other platforms, but as stated by Microsoft it will impact performance. Therefore SpecTec does not recommend using 'Read Committed Snapshot' by default on MS SQL. It should only be selected in unusual circumstances, such as deadlocks with custom interfaces.

The AMOS database utility tool does not manage isolation levels. These must be managed on the database server level. The AMOS Business Suite application does not set the isolation level at connection level but uses the database server settings.

Sybase SQL Anywhere

You can run AMOS on SQL Anywhere in either a network server/client setup, or a stand-alone configuration.

1. Install SQL Anywhere.

   To run AMOS on a network you install SQL Anywhere components on both the server, and on the clients - each workstation on which AMOS will be run.

   To run with the stand-alone configuration, you install the SQL Anywhere Personal Server and Client Interfaces on the workstation on which AMOS will be run.

   See the *Sybase SQL Anywhere* documentation for instructions.

2. Create an empty AMOS database using the AMOS DBUtil. See "Creating an AMOS Database for SQL Anywhere" below.
3. Configure SQL Anywhere according to the type of setup you have chosen:

   See "Configuring the Network Server/Client Setup" on page 17 for network server/client.

   See "Configuring the Standalone Server/Client Setup" on page 25 for standalone.

4. Modify the amosw.ini file if necessary. See "Modifying the amosw.ini File" on page 40.
5. Define the installation directory in AMOS, if you installed the program to a folder other than the default. See "Defining the Installation Directory in AMOS" on page 42.

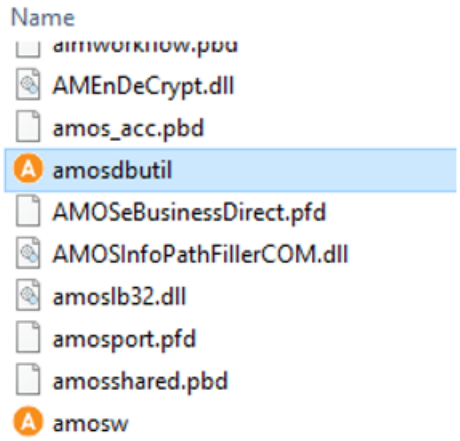
(Optional) See section "Sybase SQL Anywhere Authentication Support" on page 27 about Sybase OEM Authentication, if this applies to you.

Creating an AMOS Database for SQL Anywhere

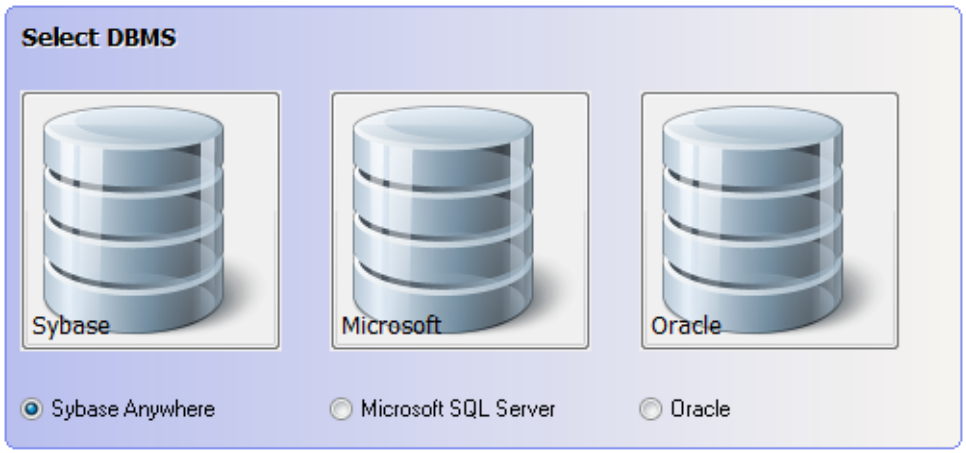
When you install AMOS for the first time, use the AMOSDBUtil to create an empty database file. The AMOSDBUtil program is located in the program folder where AMOS is installed.

To create a new, empty database file:

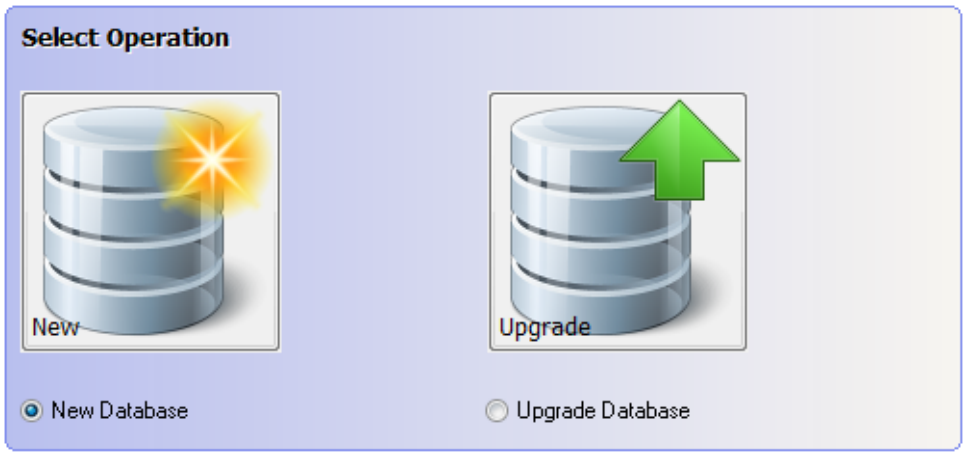
1. Open Windows Explorer and then the AMOS Business Suite installation folder. Run as Administrator on AMOSDBUtil.exe:



2. The Database Utility opens. Select Sybase Anywhere:



3. Click **Next**.
4. Select **New Database**:



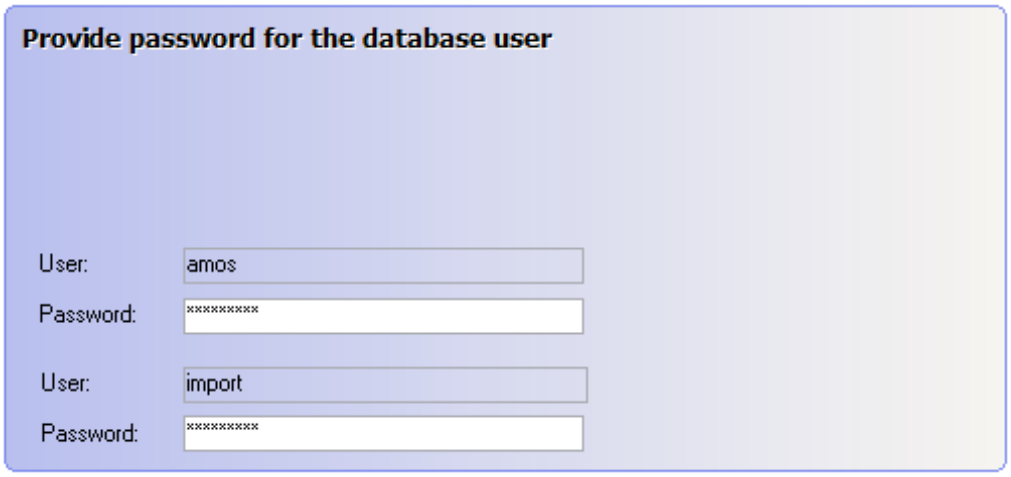
5. Click **Next**.
6. Enter **Passwords** for the 'amos' and 'import' **Users** to connect to the AMOS database. The (optional) defaults[1] are:

[1] You can use the defaults or create your own passwords. If you create your own, you will need to modify the amosw.ini file later.

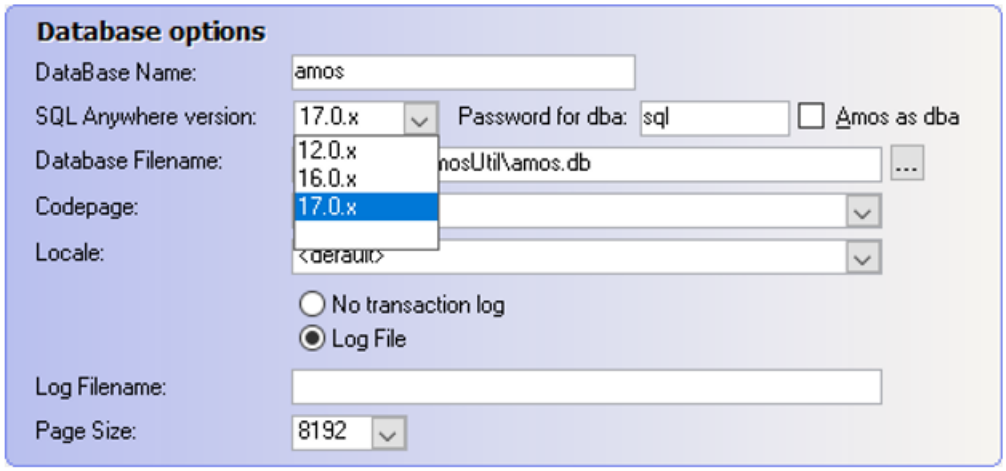
amos/voyager

and

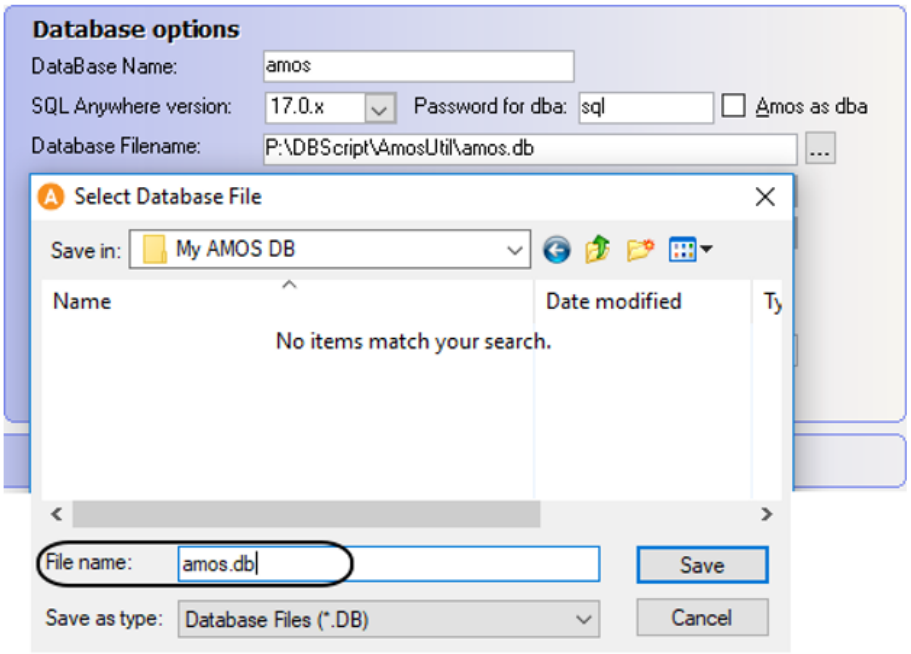
import/tropmi:



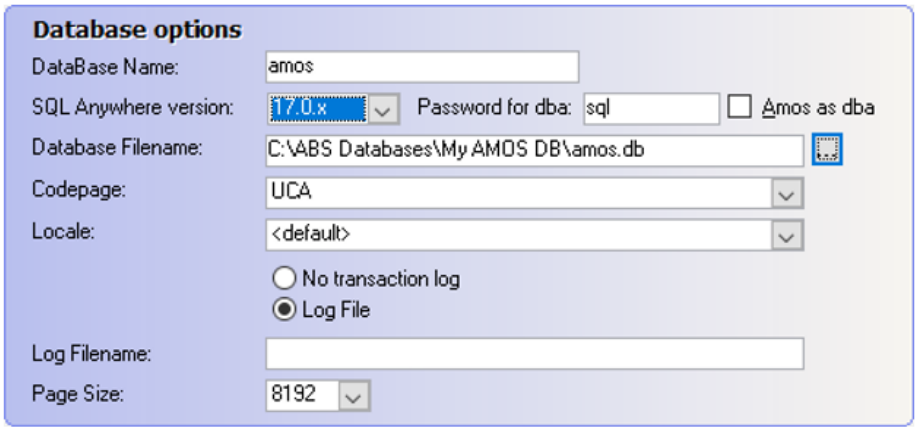
7. Click **Next**.
8. By default the new **Database Name** is amos - you can use that name or change it. Select the **SQL Anywhere Version**:



9. Browse to the folder where you want to store the new database. Enter the name of the database there:



10. Click **Save** to add it to the **Database Filename** field:



11. You can leave the other options set to default; or change them if required.
12. Click **Finish**. AMOSDBUtil will display progress bars to keep you informed of the database creation status.
13. When the confirmation dialog appears click **OK**.

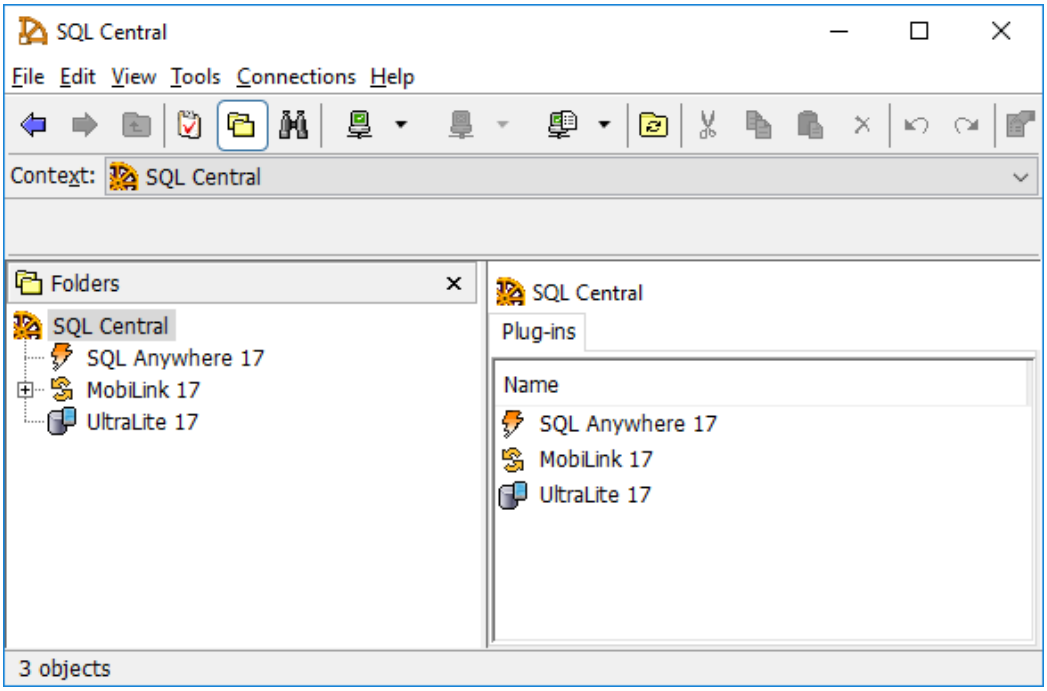
The database has now been created. Close the database utility.

Configuring the Network Server/Client Setup

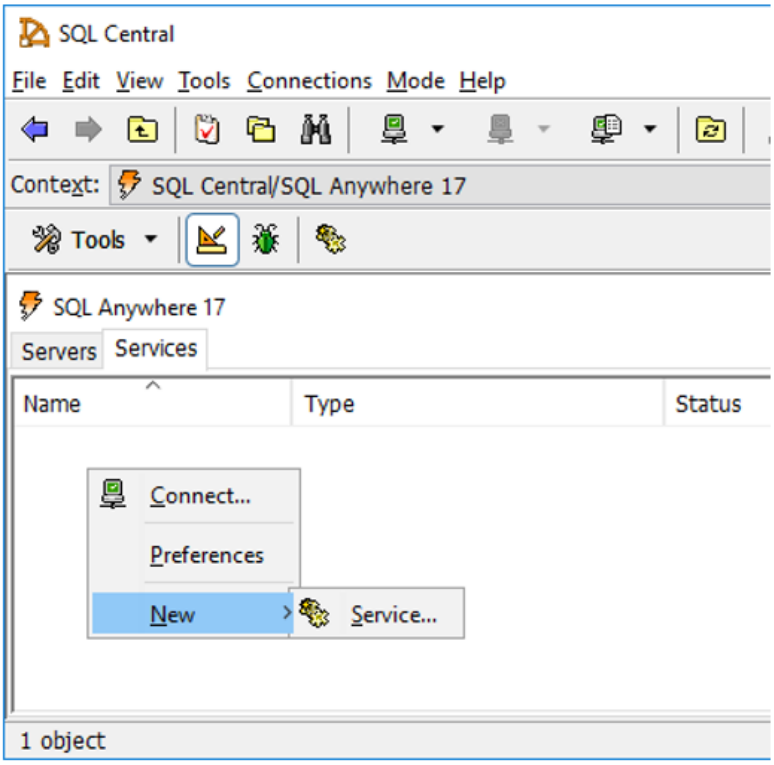
The SQL Anywhere Server

To configure the Sybase SQL Anywhere server for use with AMOS Business Suite:

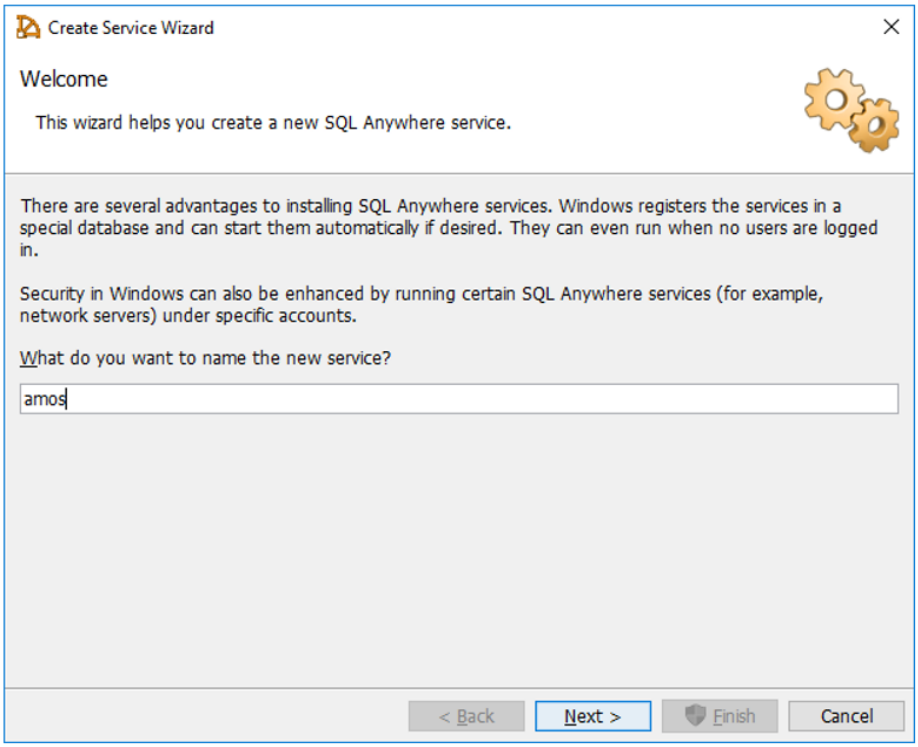
1. Go to **Start > Programs > SQL Anywhere 11/12/16/17 > Sybase Central** to open Sybase Central:



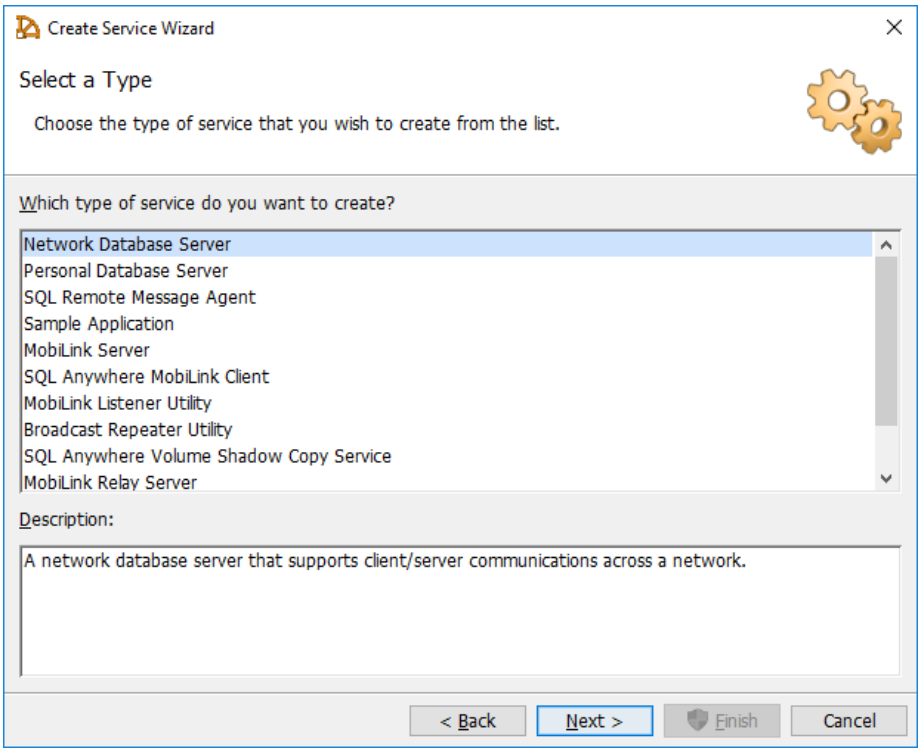
2. Double-click on the SQL Anywhere 11/12/16/17 option and open the Services tab.
3. Go to **File > New > Service** or right-click on the right pane and select **New > Service**:



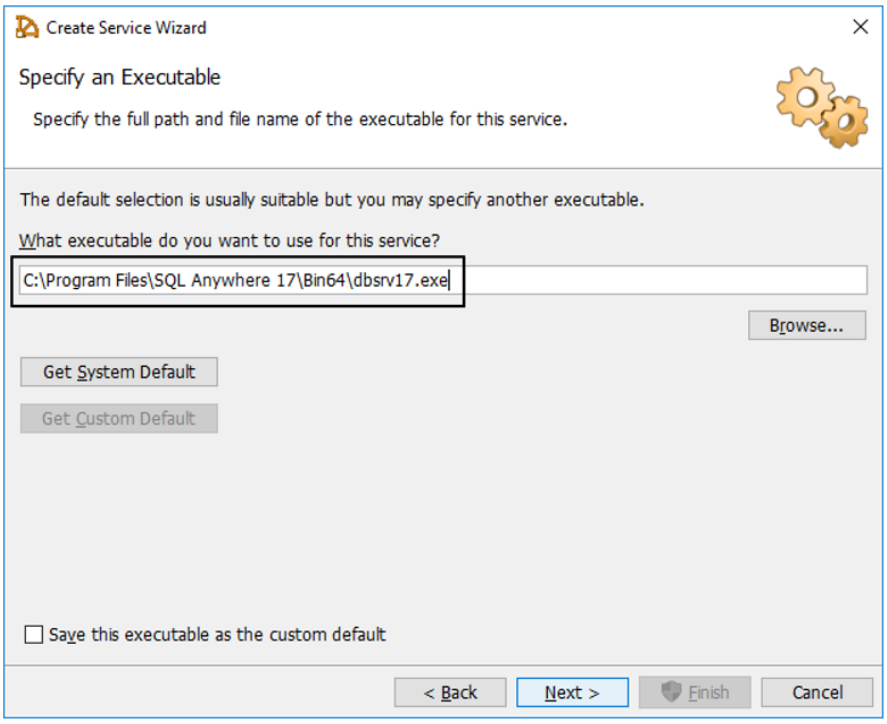
4. In the next dialog, enter a service name, such as 'amos':



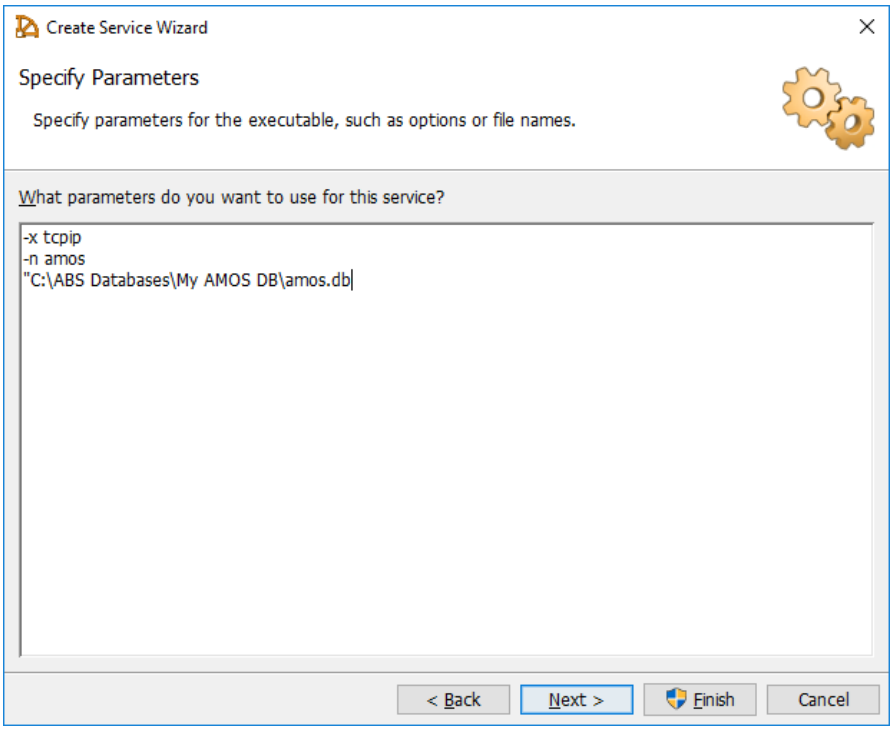
5. Click **Next**.
6. In the next dialog, select **Network Database Server**:



7. Click **Next**.
8. In the next dialog, you see the default installation path to the **dbsrvn<version>.exe** file. If you installed this file to another location, **Browse** to the alternate path:



9. Click **Next**.
10. Enter the first two parameters and the name and path to the new AMOS database you created in "Creating an AMOS Database for SQL Anywhere" on page 14:



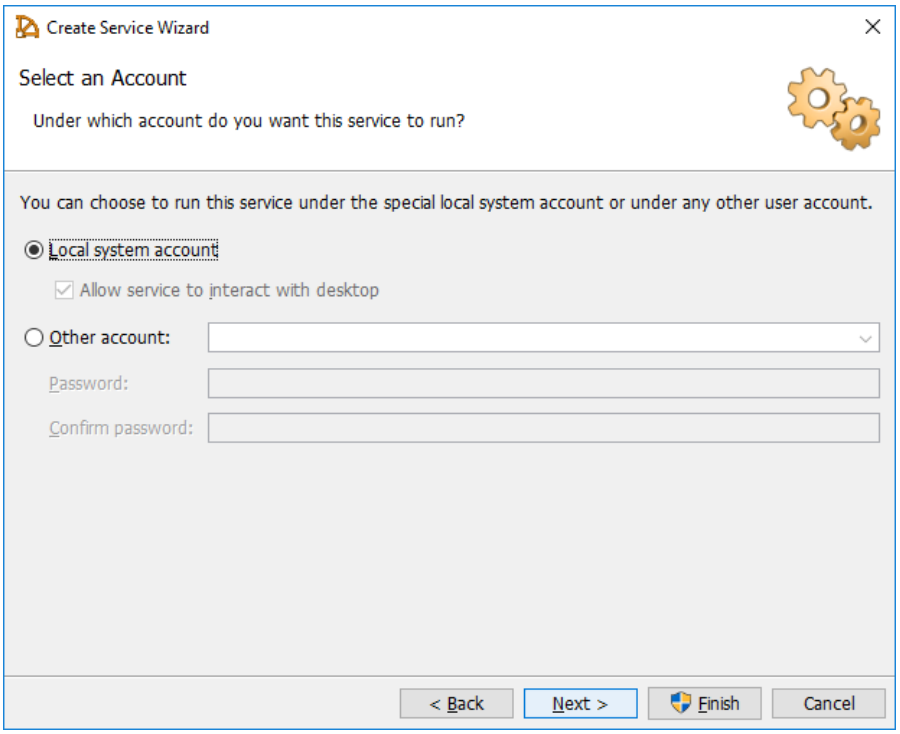
The first parameter is the type of communication protocol to be used.

The second is the server name.

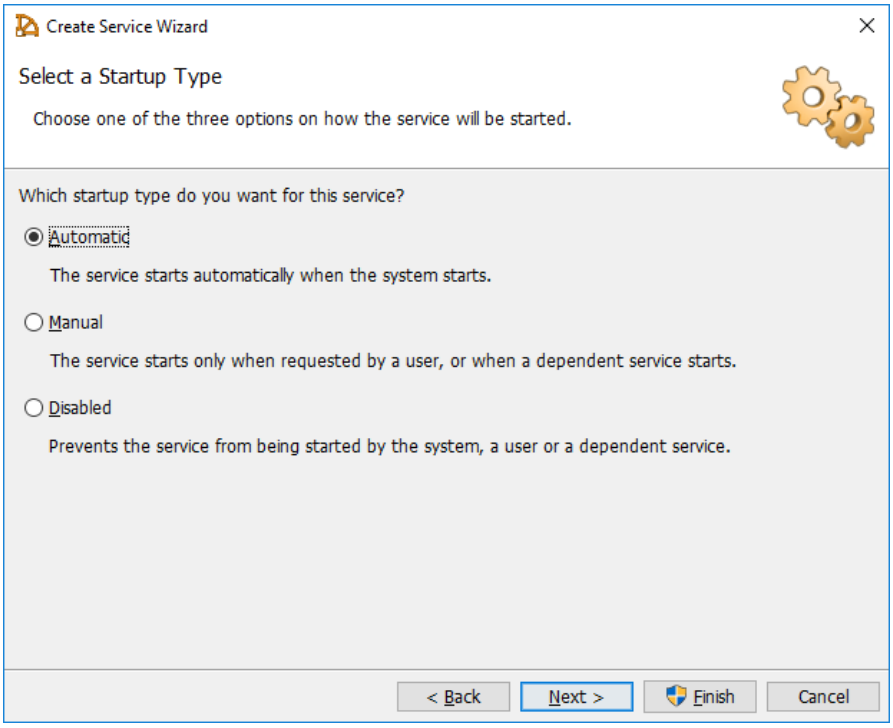
The third line is the path to your AMOS database location and the database file name. Use quotation marks and type in the exact path and database name.

11. Click **Next**.
12. (Optional) In the next dialog, you can select another account to run the service under or leave the

default:

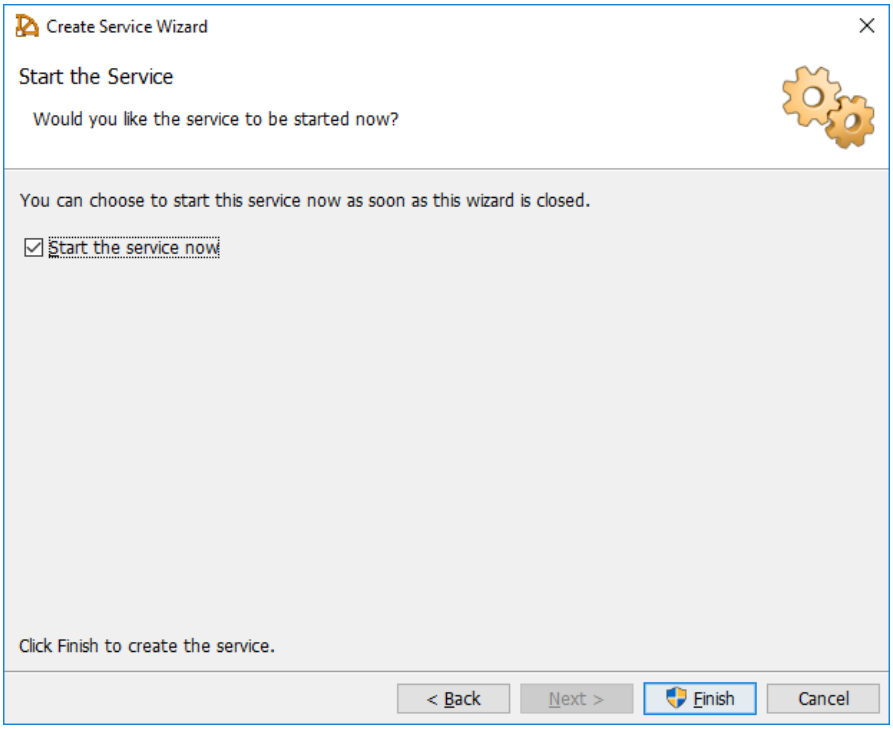


13. Click **Next**.
14. Choose a **Startup Type**:



SpecTec recommends the default start-up setting **Automatic** for a network server. This ensures that the service will always be available provided the host machine is running.

15. Click **Next**.
16. The final dialog contains the option to start the service immediately:



17. Check or clear the box and click **Finish** to complete the service creation.

You should see a screen showing that the service is created and running.

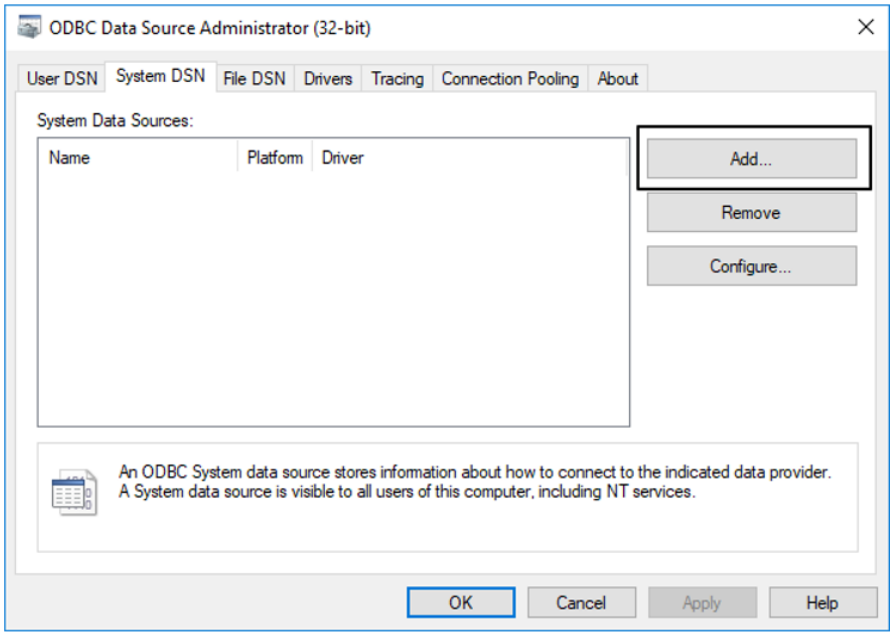
> **T i p**
>
> To alter the settings for this service at any time right-click on the name in the Sybase Central Services tab and select **Properties** from the popup menu.

The SQL Anywhere Client

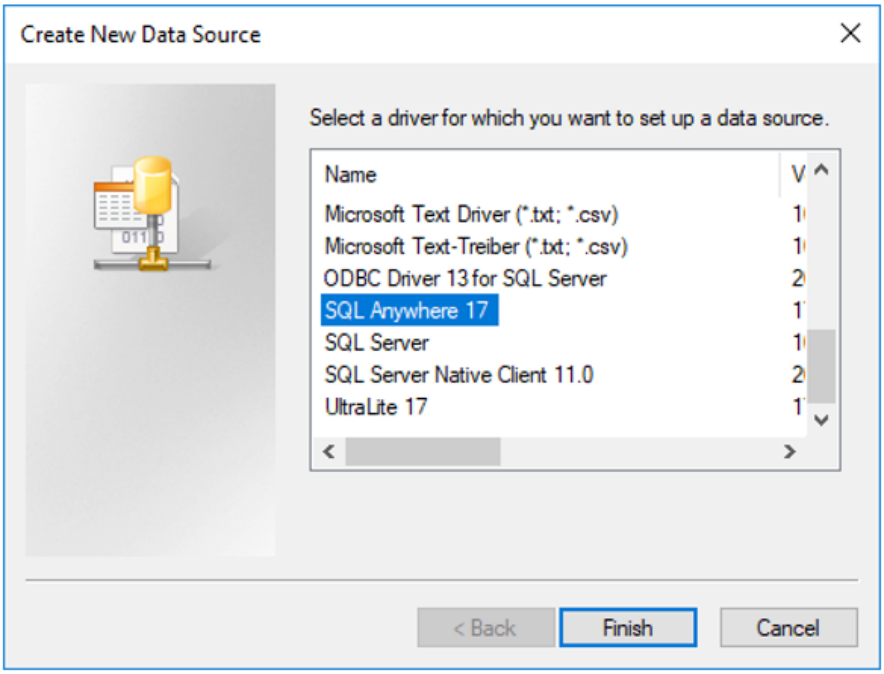
> **Note:** AMOS Business Suite is a 32 bit application. If you are running on a 64 bit version of Windows, make sure that you use the 32 bit ODBC Administrator to establish the connection to AMOS: go to C:\Windows\SysWOW64\odbcad32.exe.

To configure the ODBC connection on each client workstation for the network server/client setup:

1. Open the ODBC Administrator.
2. Open the System DSN tab:

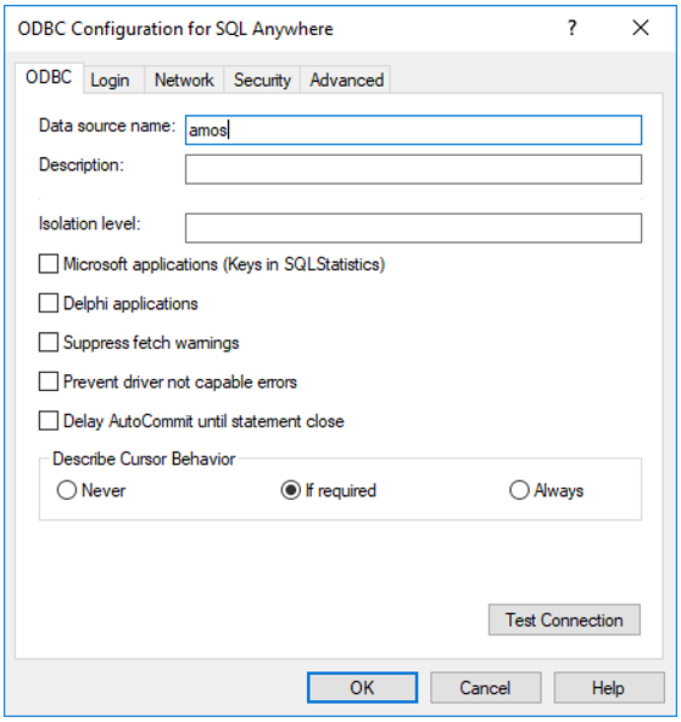


3. Click the **Add** button and select SQL Anywhere 11/12/16/17 from the pop-up dialog:

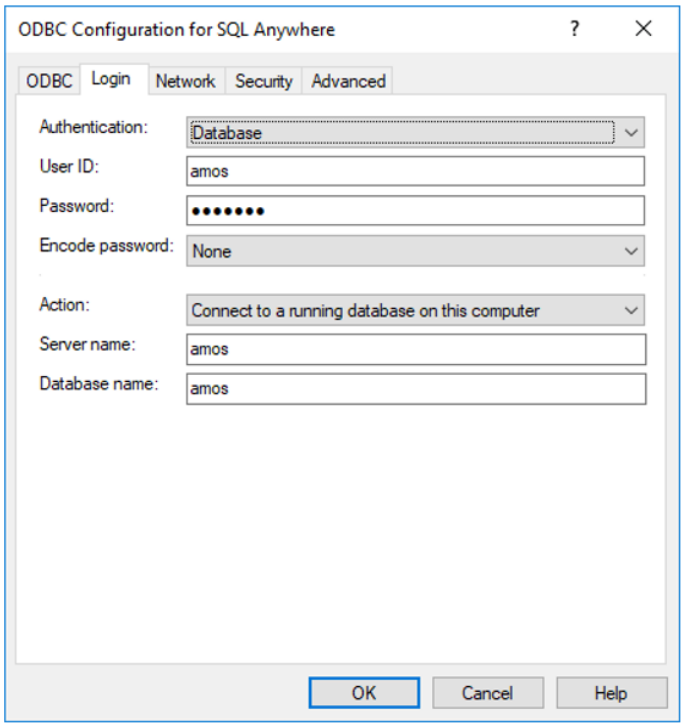


4. Click **Finish**.
5. Enter a **Data Source Name** in the ODBC tab to establish the connection to your database.
6. The (optional) default[1] DSN is amos:

[1] You can use the default or create your own DSN. If you create your own, you will need to modify the amosw.ini file later.



7. Open the Login tab[1] and enter the **User ID** 'amos'. Enter the 'amos' user **Password** you specified when you created the database[2] and in enter the name of the database you created in the **Server Name** and (optionally) **Database Name** fields:



8. Return to the ODBC tab. Click **Test Connection**. If the connection works, you will see a confirmation.
9. Click **OK** to complete the ODBC set-up.

---

[1]Depending on the version of Sybase you are running, you may need to select an 'Action' from a drop-down list first. In this case, you would select 'Connect to a running database on another computer'.

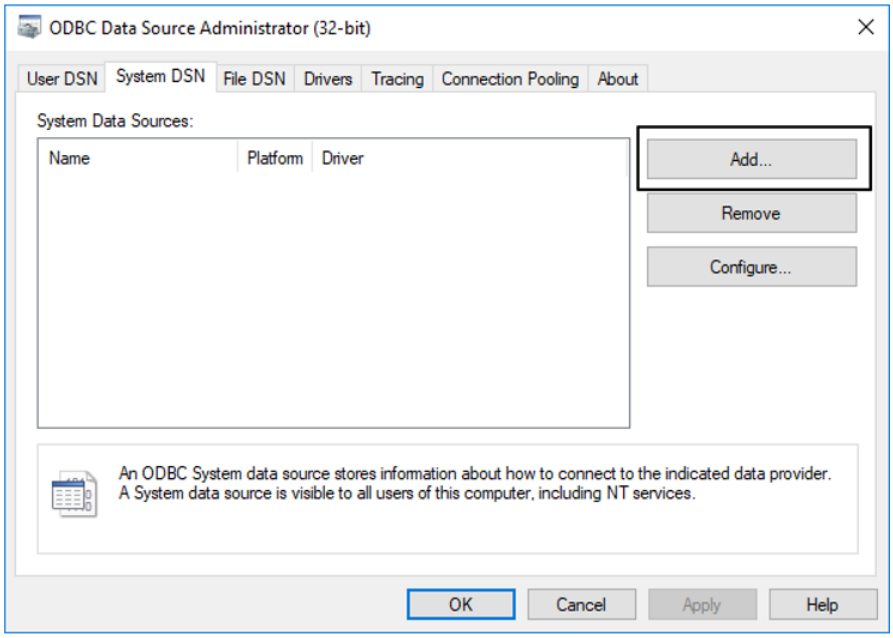
[2]If you used the default password 'voyager' when you created the database, enter it here. Otherwise, enter the password you created yourself. If you created your own password, you will need to modify the amosw.ini file later.

Configuring the Standalone Server/Client Setup

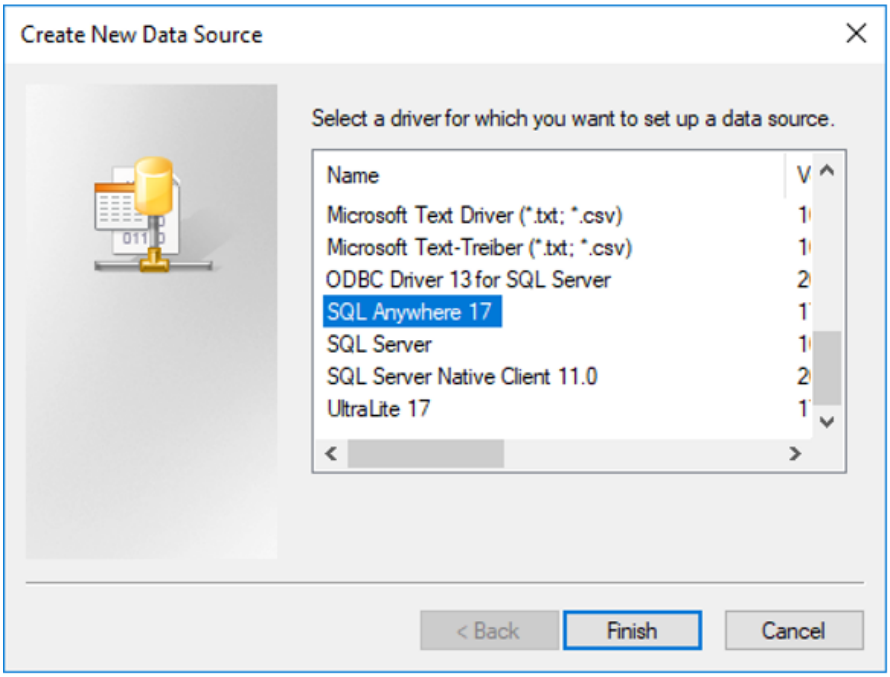
Note: AMOS Business Suite is a 32 bit application. If you are running on a 64 bit version of Windows, make sure that you use the 32 bit ODBC Administrator to establish the connection to AMOS: go to C:\Windows\SysWOW64\odbcad32.exe.

To configure the ODBC connection for a standalone server/client setup:

1. Open the ODBC Administrator.
2. Open the System DSN tab:

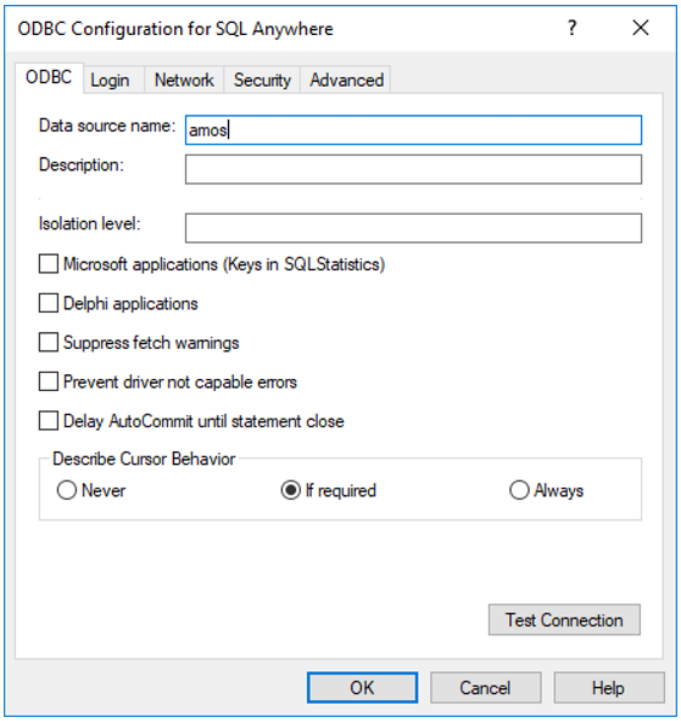


3. Click the **Add** button and select SQL Anywhere 11/12/16/17 from the popup dialog:



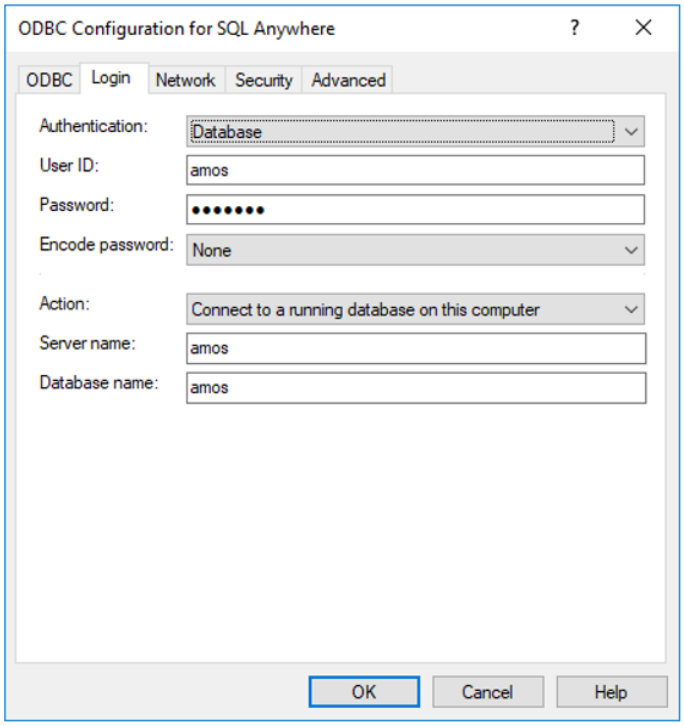
4. Click **Finish**.
5. Enter the **Data Source Name** in the ODBC tab to establish the connection to your database.

6. The (optional) default[1] DSN is amos:



7. Open the Login tab[2] and enter the **User ID** 'amos'. Enter the 'amos' user **Password** you specified when you created the database[3], in Server Name

   Enter the **Server Name** 'amos' you created in "Creating an AMOS Database for SQL Anywhere" on page 14 and enter **Database Name** field:



[1]You can use the default or create your own DSN. If you create your own, you will need to modify the amosw.ini file later.

[2]Depending on the version of Sybase you are running, you may need to select an 'Action' from a drop-down list first. In this case, you would select 'Connect to a running database on this computer'.

[3]If you used the default password 'voyager' when you created the database, enter it here. Otherwise, enter the password you created yourself. If you created your own password, you will need to modify the amosw.ini file later.

8. Return to the ODBC tab. Click **Test Connection**. If the connection works, you will see a confirmation.
9. Click **OK** to complete the ODBC setup.

Sybase SQL Anywhere Authentication Support

AMOS Business Suite supports Sybase SQL Anywhere OEM. Sybase authentication consists of a database key and a connection key:

- If you have obtained the SQL Anywhere OEM from SpecTec, see "Scenario 1" below, Scenario 1.
- If you have obtained another set of database and connection keys, see "Scenario 2" below, Scenario 2.

Scenario 1

When using the Sybase SQL Anywhere database engine requiring authentication:

1. Install SQL Anywhere OEM.
2. Create a file called 'authenticate.sql' in the Scripts subfolder of your Sybase installation folder, containing:

```
set option PUBLIC.database_authentication = '<Database authentication key>';
```

Note: SpecTec does NOT provide connection keys. To connect other developed applications, use your own database and connection keys, since the application/interface will otherwise be unable to connect.

Creating the authenticate.sql file is only necessary if you are creating a new database on the client computer.

Scenario 2

If database and connection keys are already available, perform the following steps:

1. Install SQL Anywhere OEM.
2. Create a file called 'authenticate.sql' in the Scripts subfolder of your Sybase installation folder, containing:

```
set option PUBLIC.database_authentication = '<Database authentication key>';
```

3. To create a new AMOS database with Sybase SQL Authentication update the Newdb.bat file in the AMOS installation folder as follows:

```
AMOSDBUtil.exe/CONNECTION_AUTHENTICATION='<Connection Authentication Key>'
```

4. Update the AMOSW.INI file's [Database] section to provide the Connection Authentication Key. Add the following line, replacing <Connection Authentication Key> with the actual key:

```
Connection_Authentication=SET TEMPORARY OPTION CONNECTION_AUTHENTICATION-
='<Connection Authentication Key>'
```

Note: Where reference is made to database and connection key, insert the full key (including the agreed company and application name), not just the signature.

Note: If SQL Anywhere OEM is running next to another version of Sybase SQL Anywhere, ensure that it is listed first in the search path of the operating system, to be able to create a new database. Use 'dbinit -v' from the command prompt to test whether the correct version of SQL Anywhere is first in the search path. A reboot of the Windows OS is recommended for the changes to the path to take effect.

Microsoft SQL

To setup and run AMOS on Microsoft SQL:

1. Check the ODBC and Driver Manager compatibility. See "Compatibility - ODBC & Driver Manager" below.
2. Then, install MS SQL. See the *Microsoft SQL* documentation for instructions.
3. Create an ODBC source. See "Creating an ODBC Data Source" on the facing page.
4. Create an empty AMOS database using the AMOS DBUtil. See "Creating an AMOS Database for Microsoft SQL Server" on page 33.
5. Reconfigure the ODBC source if necessary. See "Creating an ODBC Data Source" on the facing page.
6. Modify the ini file if necessary. See "Modifying the amosw.ini File" on page 40.
7. Define the installation directory in AMOS, if you installed the program to a folder other than the default. See "Defining the Installation Directory in AMOS" on page 42.

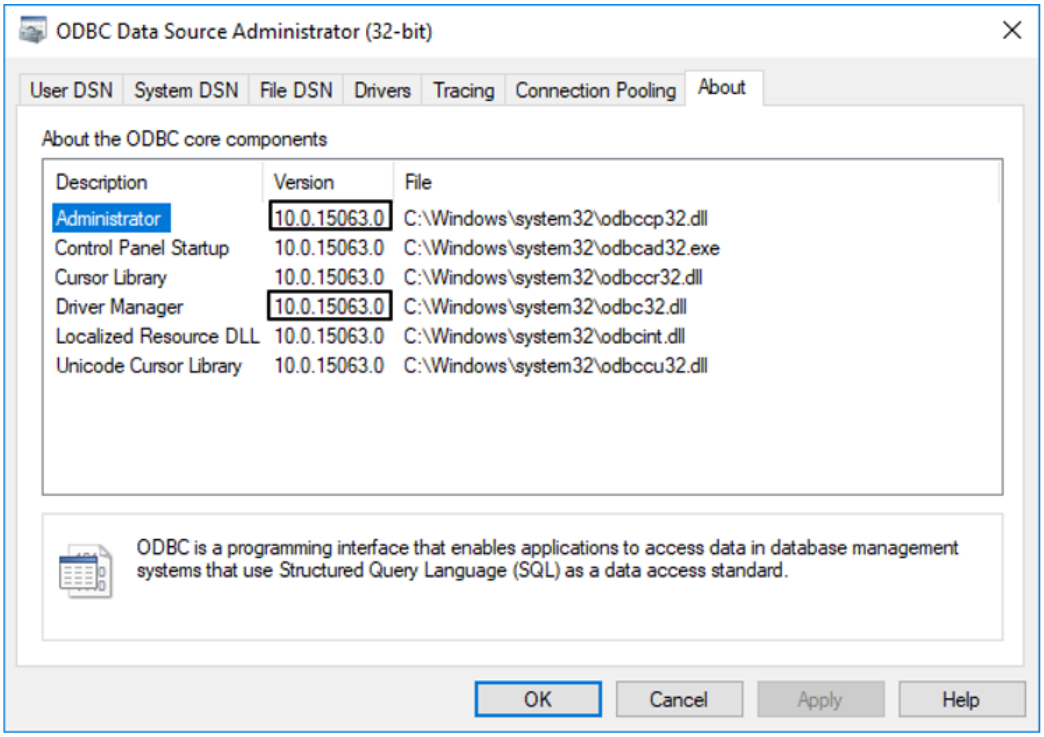
Note: SpecTec strongly recommends that case sensitivity is not enabled while setting up the MS-SQL server as this may cause unnecessary problems with future operation of the system. SpecTec **does not support** case sensitive setup on MS-SQL.

Compatibility - ODBC & Driver Manager

Note: AMOS Business Suite is a 32 bit application. If you are running on a 64 bit version of Windows, make sure that you use the 32 bit ODBC Administrator to establish the connection to AMOS: go to C:\Windows\SysWOW64\odbcad32.exe.

Before installing the MS SQL server, check that the correct version of the ODBC Data Source Administrator is installed:

1. Open the ODBC Administrator and then open the About tab:



2. Check that the version of the **Administrator** is at least as new as that of the **Driver Manager**.

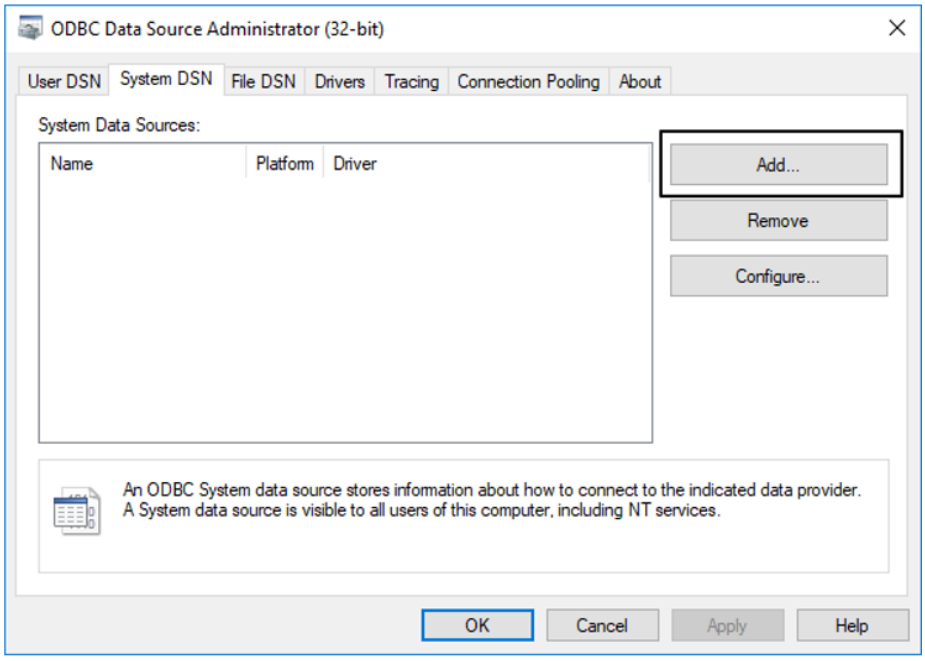
Note: SpecTec recommends that you use version 3.5.x or higher. If the Administrator version is older, this will cause problems during setup and you will need to install a later version.

Creating an ODBC Data Source

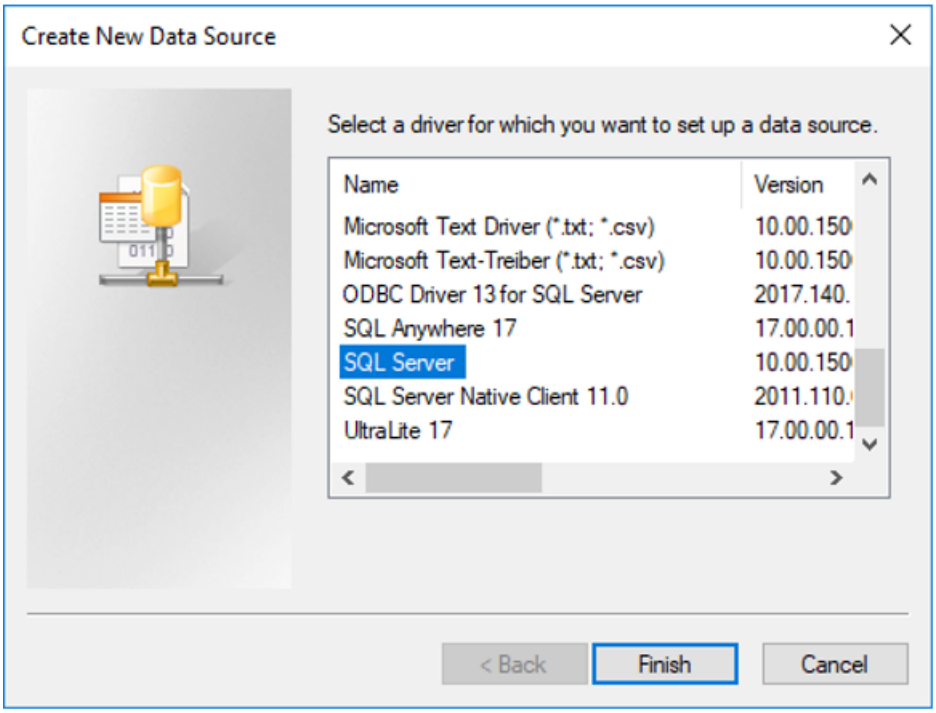
Note: AMOS Business Suite is a 32 bit application. If you are running on a 64 bit version of Windows, make sure that you use the 32 bit ODBC Administrator to establish the connection to AMOS: go to C:\Windows\SysWOW64\odbcad32.exe.

Enter the data that the ODBC will use to access the AMOS database:

1. Open the ODBC Administrator.
2. Open the System DSN tab:



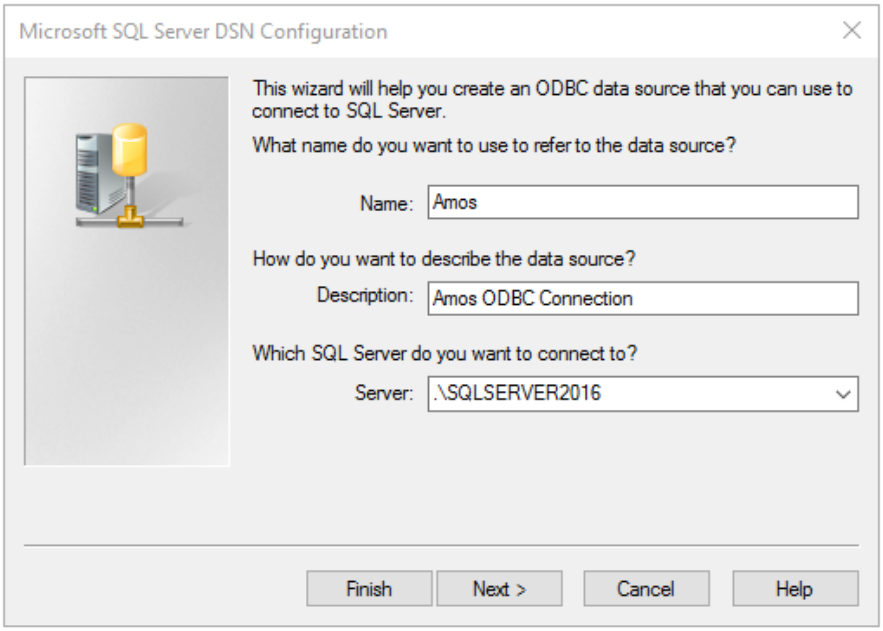
3. Click the **Add** button and select SQL Server from the pop-up dialog:



4. Click **Finish**.

> **Note:** As of AMOS Business Suite version 9.2.00, it is also possible to select SQL Native Client when creating the ODBC connection.

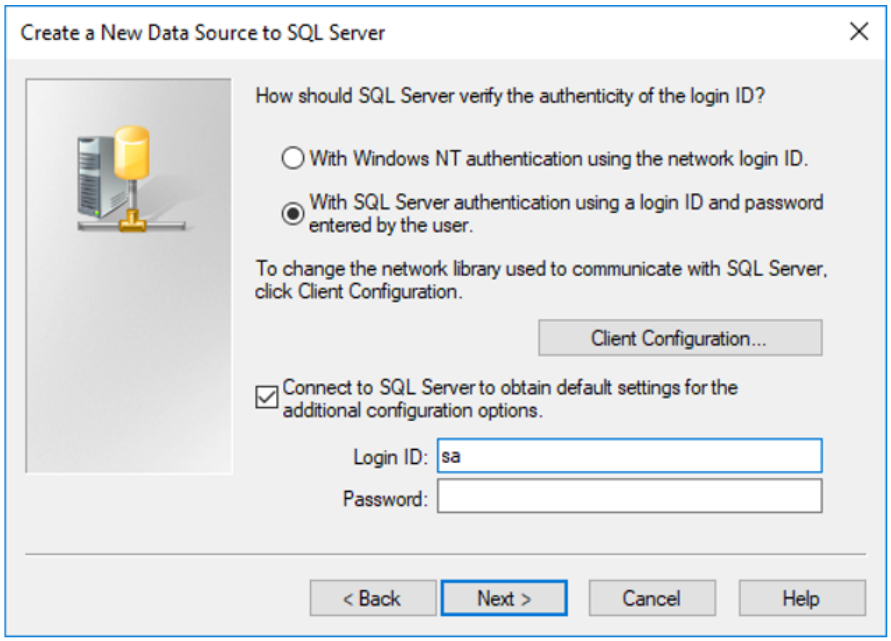
5. Enter the following information in the next dialog:
   - **Name**. Any recognisable name by which the service will be known to you.
   - **Description**. A more detailed description of the service and its function.
   - **Server**. Select the server you want to access[1].



6. Click **Next**.

[1] If you are unsure of the server name, contact your Network Administrator.

7. Ensure that **Login ID** is carried out by SQL server and not by Windows:



8. Check that the **Connect to SQL Server** box is flagged. As long as an empty AMOS database does not yet exist, temporarily use the system administrator login:

   Login ID - sa

   Password - <your password>

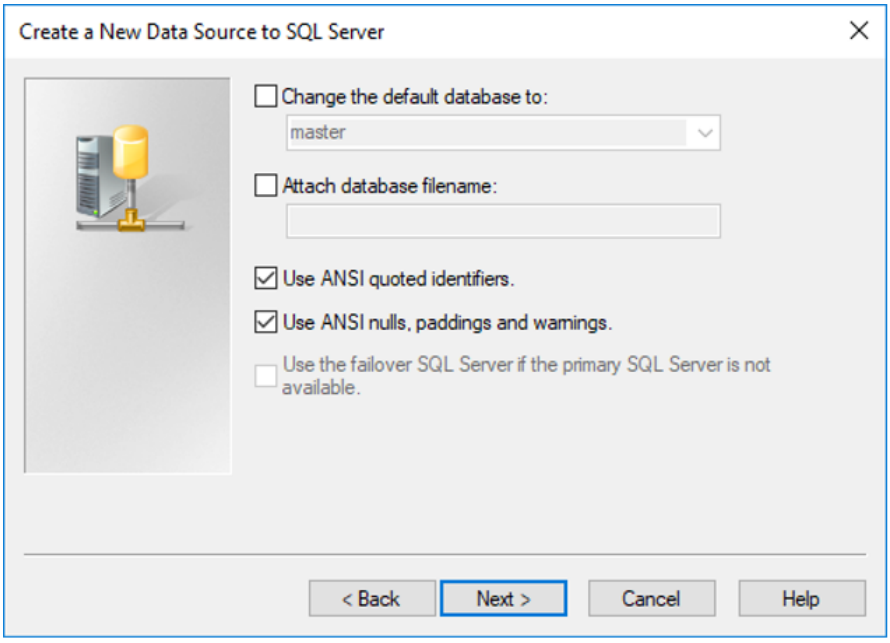
   > **Note:** This login and password applies only to the connection required to establish default server settings and not any subsequent connections using the data source.

9. In the case of a client installation, you can use the defaults:

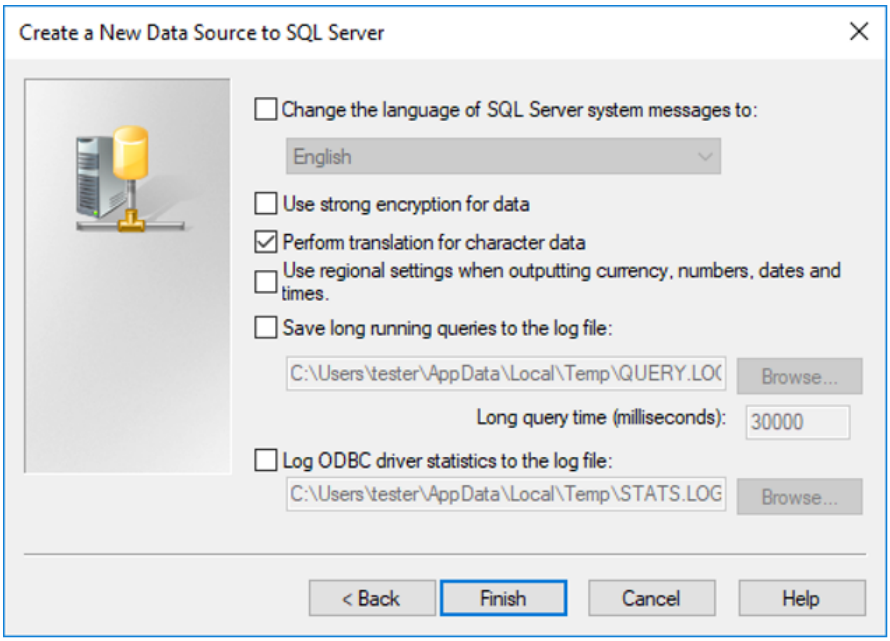
   Login ID - amos

   Password - voyager

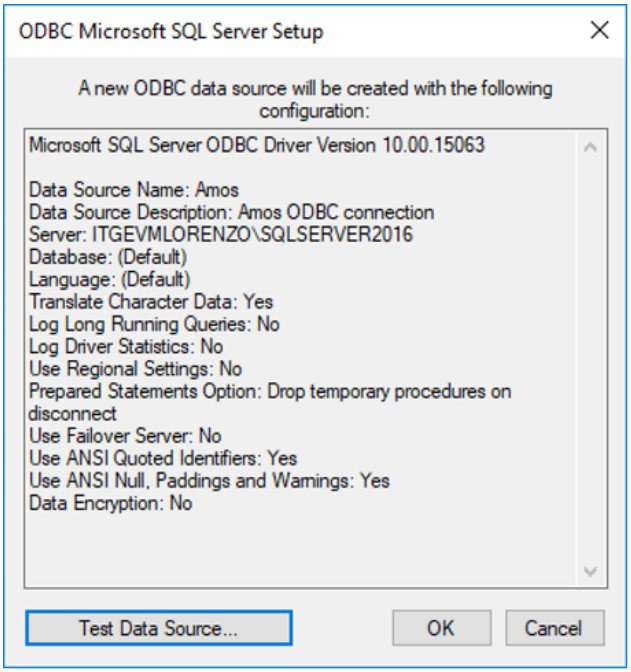
10. Click **Next**.
11. As long as the AMOS database does not yet exist, enter the default database name 'master' in the next dialog:



12. Leave all other settings in this dialog as default.
13. Click **Next**.
14. Select the language for system messages, character set translation and the use of regional settings. You can also control the creation of long-running queries and ODBC driver statistic logs.
15. **Keep the default settings during the setup process.**



16. Click **Finish**.
17. Review your choices and click **Test Data Source**. MS SQL will attempt to connect to the database using your data:



18. If the setup is correct the SQL Server Data Source Test dialog opens, displaying TESTS COMPLETED SUCCESSFULLY!
19. Click **OK** in the two windows to exit the ODBC setup process.

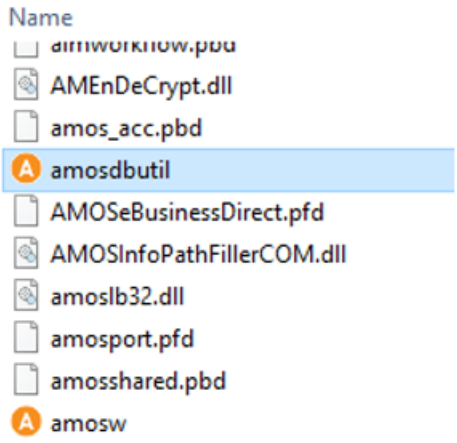
Next, create a new AMOS database. Then, re-configure the ODBC Data Source.

Creating an AMOS Database for Microsoft SQL Server

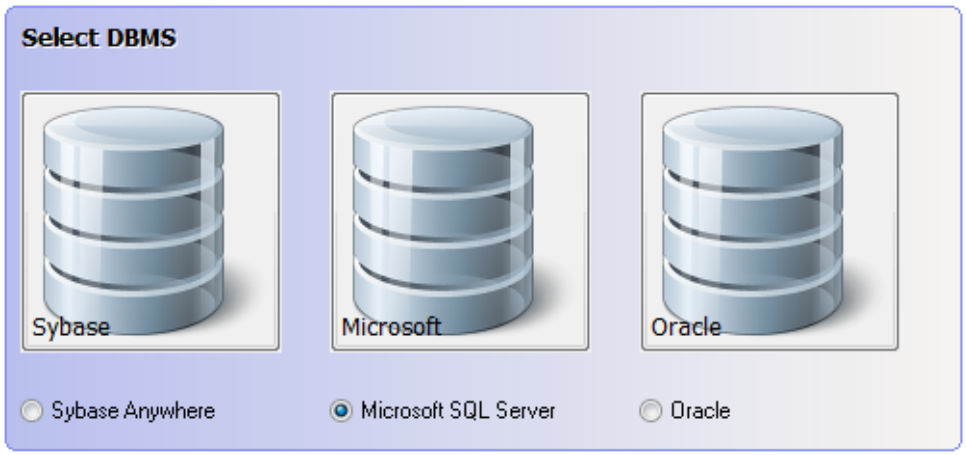
When you install AMOS for the first time, use the AMOSDBUtil to create an empty database file. The AMOSDBUtil program is located in the program folder where AMOS is installed.

To create a new, empty database file:

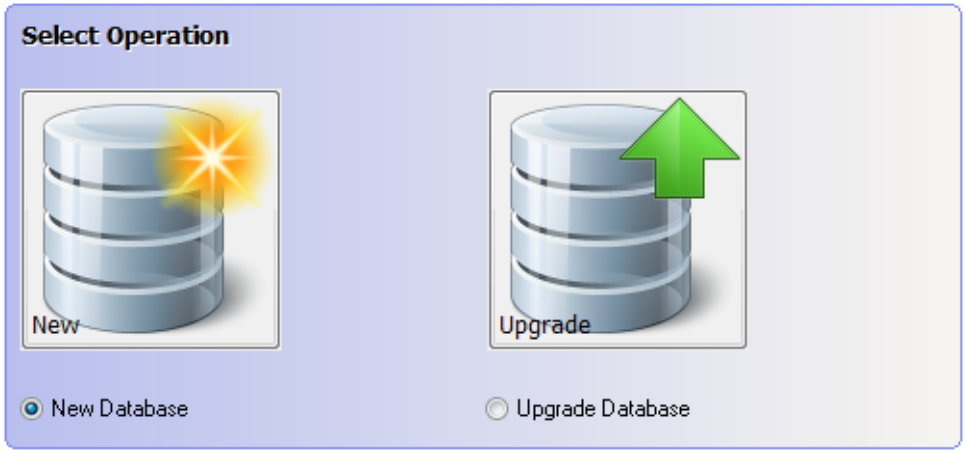
1. Open Windows Explorer and then the AMOS Business Suite installation folder. Double-click on AMOSDBUtil.exe:



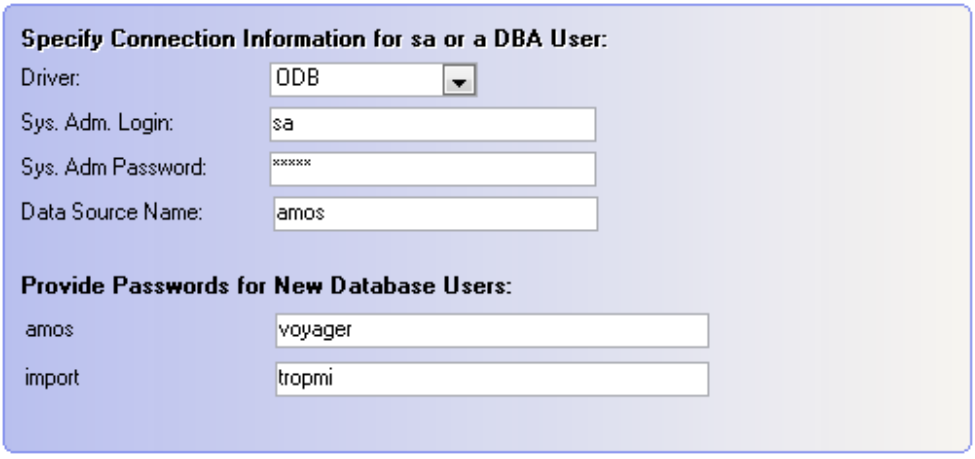
2. The Database Utility opens. Select Microsoft SQL Server:



3. Click **Next**.
4. Select **New Database**:



5. Click **Next**.
6. Select the **Driver**. Provide the **Sys. Adm. Login** name and **Password** you created during installation of MS SQL, and the **Data Source Name** also created during installation:



7. Enter **Passwords** for the 'amos' and 'import' **Users** to connect to the AMOS database. The (optional) defaults[1] are:

   amos/voyager

[1] You can use the defaults or create your own passwords. If you create your own, you will need to modify the amosw.ini file later.

and

import/tropmi:

For users of MS SQL 2012: use an 'Enforce' password[1] - MS SQL Server 2012 will not accept simple passwords such as the defaults. See the *Microsoft SQL* documentation for details.

8. Then, click **Next**.
9. Enter a name, path and size for the **Data** and **Log** files.
10. Click **Finish**.
11. Click **OK** and **Create DB**. AMOSDBUtil will display progress bars to keep you informed of the database creation status.
12. When the confirmation dialog appears click **OK**.

The database has now been created. Close the database utility.

Reconfiguring the ODBC Source

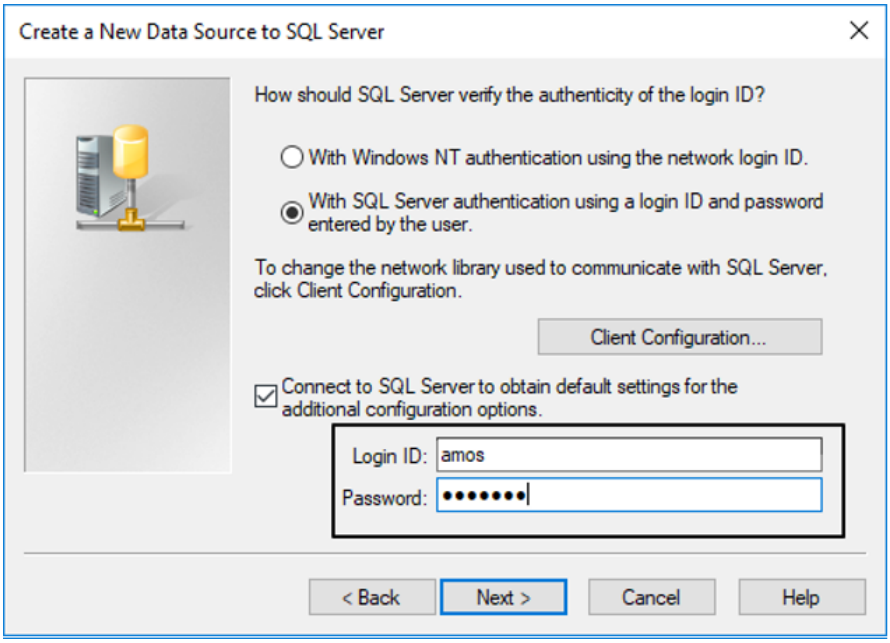
Note: AMOS Business Suite is a 32 bit application. If you are running on a 64 bit version of Windows, make sure that you use the 32 bit ODBC Administrator to establish the connection to AMOS: go to C:\Windows\SysWOW64\odbcad32.exe.

After creating the AMOS database:

1. Re-open the ODBC Administrator.
2. Select the data source you created in "Creating an ODBC Data Source" on page 29 and click **Configure**.
3. Click **Next**.
4. In the next dialog, enter the user ID and password you created for the AMOS database. The (optional) defaults are:

   Login ID - amos

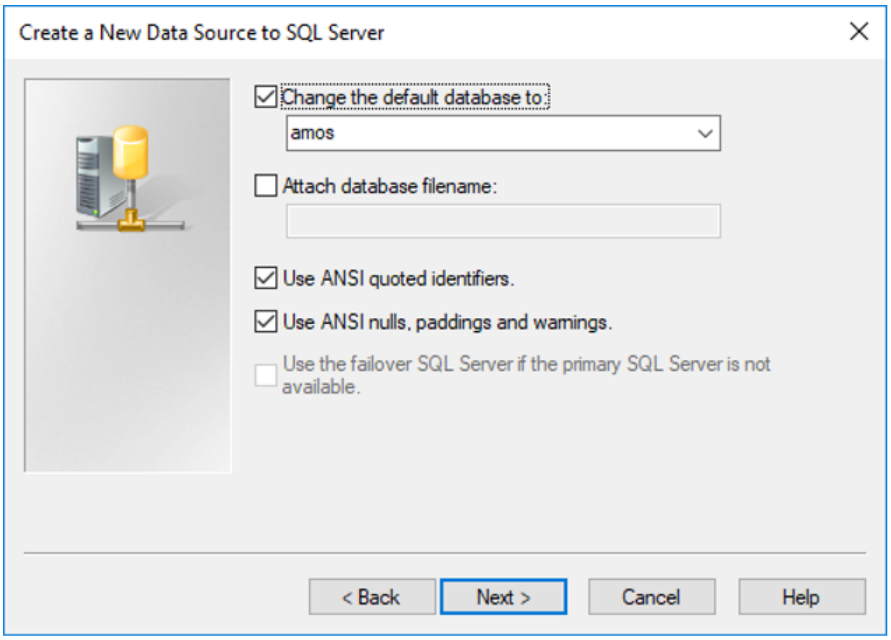
   Password - voyager



5. Click **Next**.

[1] Example 'Enforce' passwords: Voyager123, VOYager123, etc.

6. Now that you have created an AMOS database, flag the 'Change the default database to:' check-box and then select amos from the drop-down list:



7. Click **Next**.
8. **Test** the datasource connection. When successful, exit the ODBC.

Oracle

To setup and run AMOS on Oracle:

1. Install Oracle. See the *Oracle* documentation for instructions.
2. Create and configure an Oracle database. See "Creating and Configuring an Oracle Database" below.
3. Create an empty AMOS database using the AMOS DBUtil. See "Creating an AMOS Database for Oracle" on the next page.
4. Modify the ini file if necessary. See "Oracle" on page 42.
5. Define the installation directory in AMOS, if you installed the program to a folder other than the default. See "Defining the Installation Directory in AMOS" on page 42.

Creating and Configuring an Oracle Database

After installing Oracle, create the Oracle database and configure the net manager:

1. Create three table spaces: one for the AMOS database, one for indexes and one for temporary storage.

Suggested Table, File and Log Names	
Default tablespace	AMOSTBLSPC
Index tablespace	AMOSINXSPC
Temporary tablespace	AMOSTMPSPC
AMOS Data file	AMOS.DAT
AMOS Rollback log	AMOSROLL

2. Create a user called 'amos' and assign a password. You can use the default password[1] 'voyager'.
3. Attach the default and temporary tablespaces.
4. Assign the **CONNECT** and **DBA** roles to the user amos.
5. Using the NET8 Config utility, choose **Local Net Service Name Configuration** and create the service name amos. Then set the network protocol to **TCP/IP.**
6. Select the protocol and enter the network name of the server where the database is located and the port number (the default port is usually 1521).
7. Enter the database name - amos - in the **Net Service Name** field (formerly called System Identifier).
8. Test the service to make sure everything works correctly.

Once the database has been created, you can use various Oracle tools such as `Oracle Enterprise Manager' or `DBA Studio' to improve the set-up and performance of the database.

As an alternative, there are two database tools available within the Amos\Cry sub-directory:

- Use Mvindex.dba after initial database creation to improve performance.
- Use Analyze.dba when performance seems to have declined.

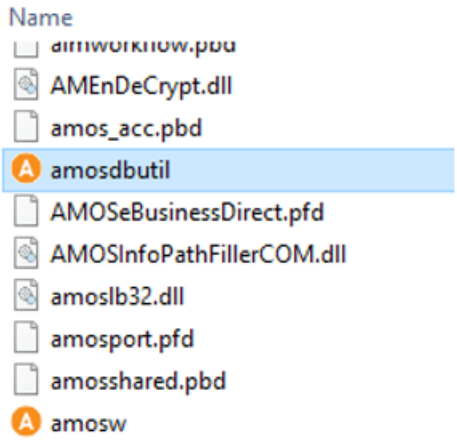
[1] If you do not use the default password, you will need to modify the amosw.ini file later on.

Creating an AMOS Database for Oracle

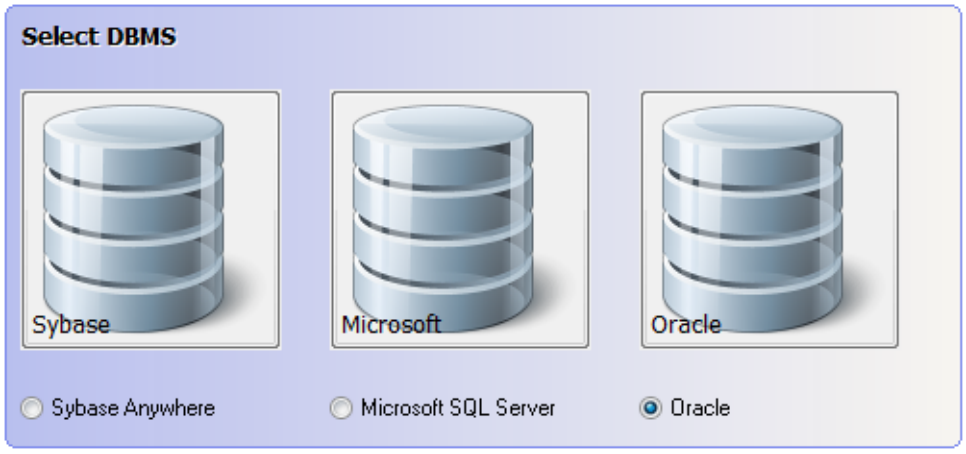
When you install AMOS for the first time, use the AMOSDBUtil to create an empty database file. The AMOSDBUtil program is located in the program folder where AMOS is installed.

To create a new, empty database file:

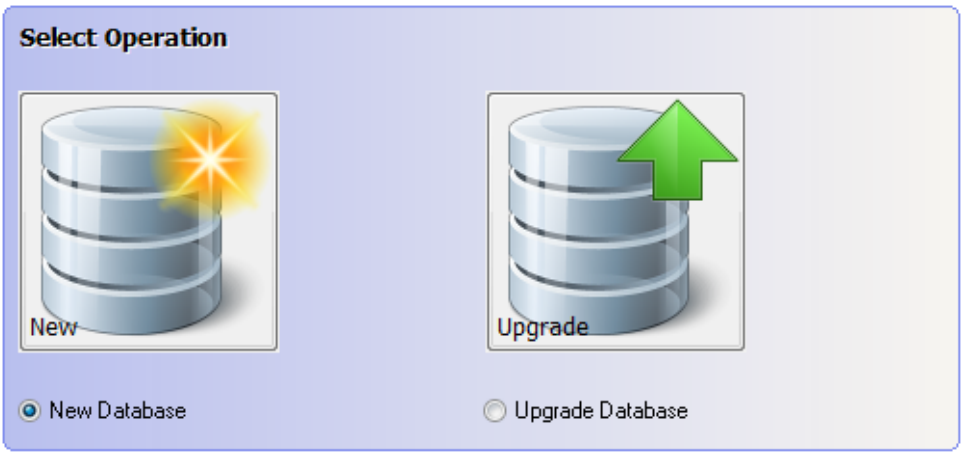
1. Open Windows Explorer and then the AMOS Business Suite installation folder. Double-click on AMOSDBUtil.exe:



2. The Database Utility opens. Select Oracle:

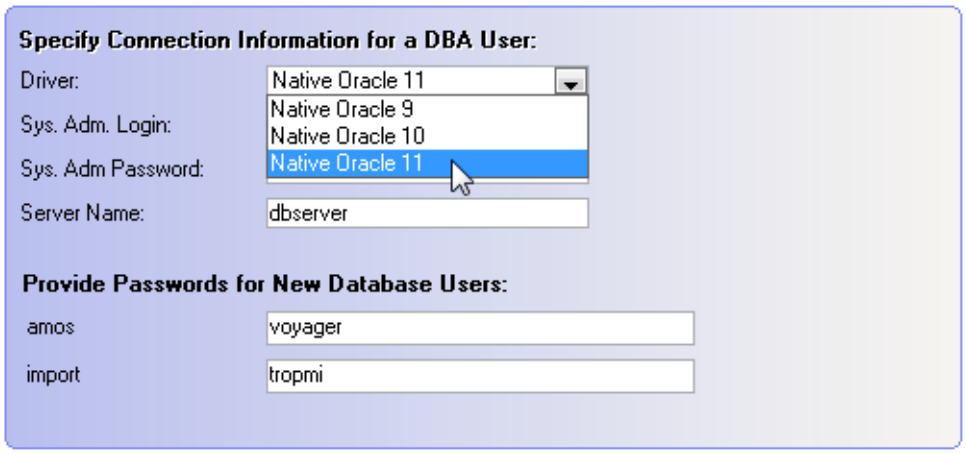


3. Click **Next**.
4. Select **New Database**:

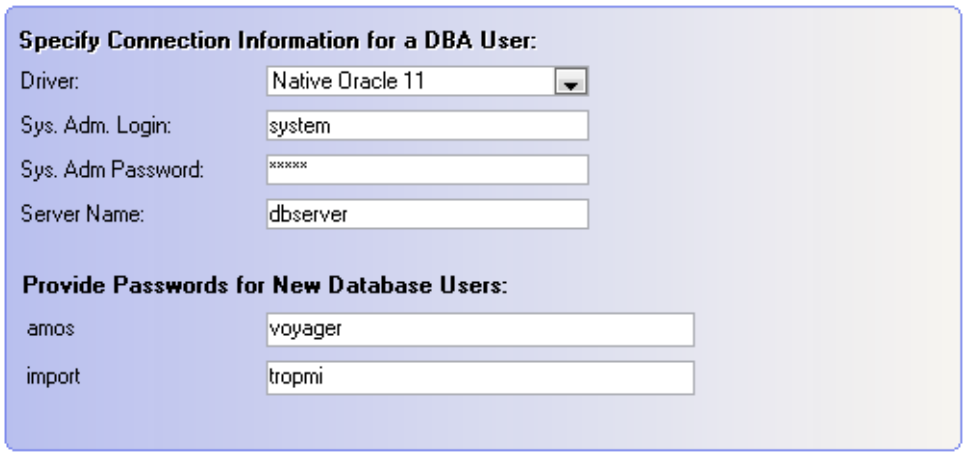


5. Click **Next**.

6. Select the **Driver** version:



7. Enter the **Sys. Adm. Login** name, **Sys. Adm. Password** and **Server Name**:



8. Enter **Passwords** for the 'amos' and 'import' **Users** to connect to the AMOS database. The (optional) defaults[1] are:

   amos/voyager

   and

   import/tropmi

9. Click **Next**.
10. Select Oracle table spaces for **Default** space and **Index Table** space, as created in "Creating and Configuring an Oracle Database" on page 37.

    Note: For security reasons, select different values from the drop-down lists to keep the indexes on a different table space. SpecTec also recommends that you check the box **Build Index on Foreign Key** for better performance.

11. Click **Finish**. AMOSDBUtil will display progress bars to keep you informed of the database creation status.
12. When the confirmation dialog appears click **OK**.

The database has now been created. Close the database utility.

[1] You can use the defaults or create your own passwords. If you create your own, you will need to modify the amosw.ini file later.

Modifying the amosw.ini File

The amosw.ini file is located in the AMOS installation folder. It contains the default connection settings. You may need to modify the settings in the file to allow AMOS to access the database, if the DSN in the .ini file differs from the one you defined in the ODBC Administrator or if you used passwords other than the defaults.

Correct access rights might be needed to modify settings in the amosw.ini file. Refer to the documentation for the version of Windows you are running, for more information about this access.

After modifying the amosw.ini file, you are ready to start AMOS.

Note: Do not change the **DelimitIdentifier** setting in the Amosw.ini file. DelimitIdentifier='no' is the default and changing it to 'yes' is not supported by the system on any DBMS.

Sybase SQL Anywhere

To modify the amosw.ini file for Sybase SQL Anywhere:

1. Open Windows Explorer and then open your AMOS installation folder.
2. Locate the file named amosw.ini. Double-click the file to open it in your text editor.
3. Find the section called 'SQL Anywhere example'.
4. Scroll to the header [Database]. In the line beginning with DBParm=, make sure the DSN name matches the DSN you specified in the ODBC. Check the PWD setting: if you did not use the default password 'voyager', enter the password you created instead.
5. Scroll to the header [Import]. Check the DSN name here again. Check the PWD setting: if you did not use the default password 'tropmi', enter the password you created instead.

```
;;;
```

MS SQL

To modify the amosw.ini file for MS SQL:

1. Open Windows Explorer and then open your AMOS installation folder.
2. Locate the file named amosw.ini. Double-click the file to open it in your text editor.
3. Find the section called 'Microsoft SQLServer example using ODBC'.
4. If you are installing with the **SQL Server driver**:
5. Scroll to the header [Database].
6. In the line beginning with DBParm= , make sure that the DSN name matches the DSN you specified in the ODBC. Also ensure that UID and pwd are set to the ID and password you created[1] , if you did not use the defaults:

```
;;;
```

Oracle

To modify the amosw.ini file for Oracle:

1. Open Windows Explorer and then open your AMOS installation folder.
2. Locate the file named amosw.ini. Double-click the file to open it in your text editor.
3. Find the section called 'Oracle example'.
4. Scroll to the header [Database]. In the line beginning with ServerName, change the ServerName <yourDBserver> to the name specified when the database was created.
5. Scroll to the header [Import]. Change the ServerName here again.
6. **Save** your changes.

You may need to deactivate the SQL Anywhere and MS SQL sections by adding a semicolon in front of these entries:

[;Database]

[;Import]

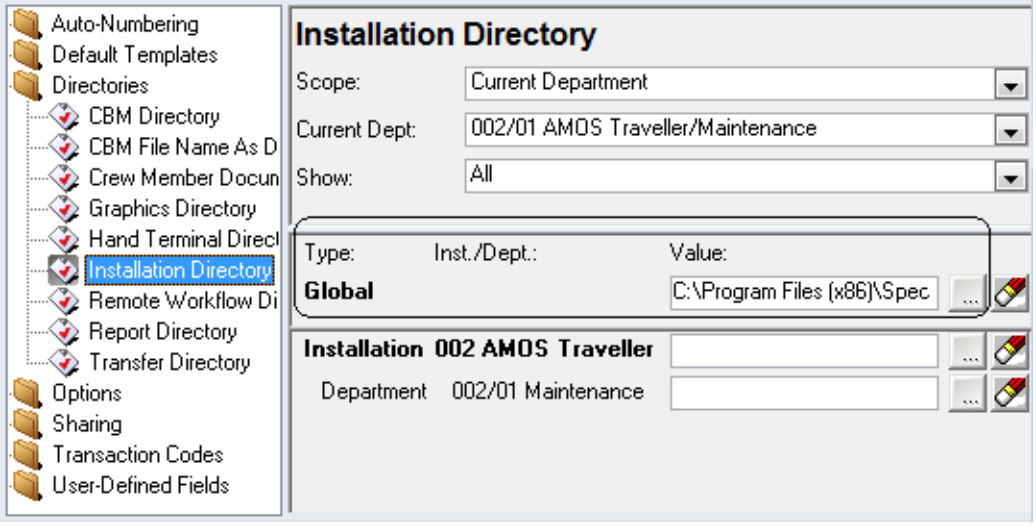
Defining the Installation Directory in AMOS

By default, AMOS is installed into the following location:

```
c:\Program Files\AMOS\AMOS Business Suite.
```

If you installed AMOS Business Suite in any folder other than this default, make sure you update the installation directory setting in AMOS:

1. Start AMOS.
2. Go **Tools > Configuration > Parameters**.
3. Expand the Directories folder.
4. Select **Installation Directory**.
5. Use the **Global** lookup to enter the path to the AMOS installation:



6. **Save** the setting.

CHAPTER 4

Upgrading a Database

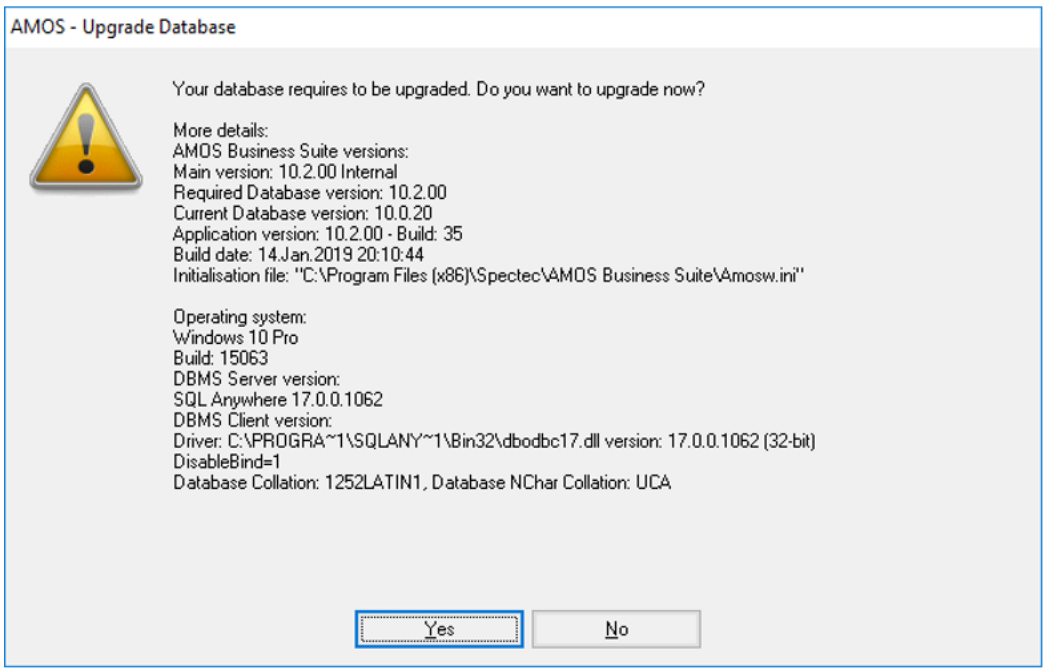
This chapter includes the following topics:

When You Upgrade AMOS 44
Silent Database Upgrade 45

SpecTec

When You Upgrade AMOS

When you upgrade your AMOS installation to the next version, the first time you start this newly installed version the AMOSDBUtil will start automatically and notify you that you need to upgrade your database:



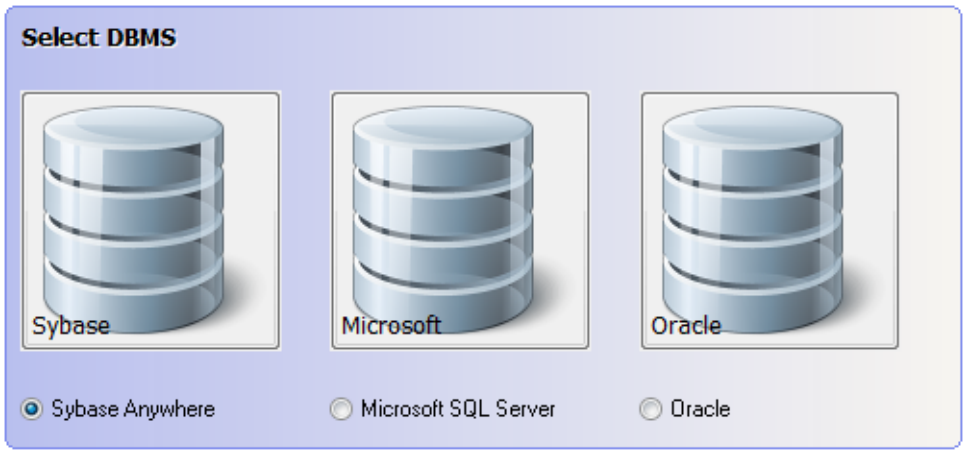
Note: Before upgrading to a new version of AMOS Business Suite, make a back-up copy of your database and log files.

To carry out an upgrade:

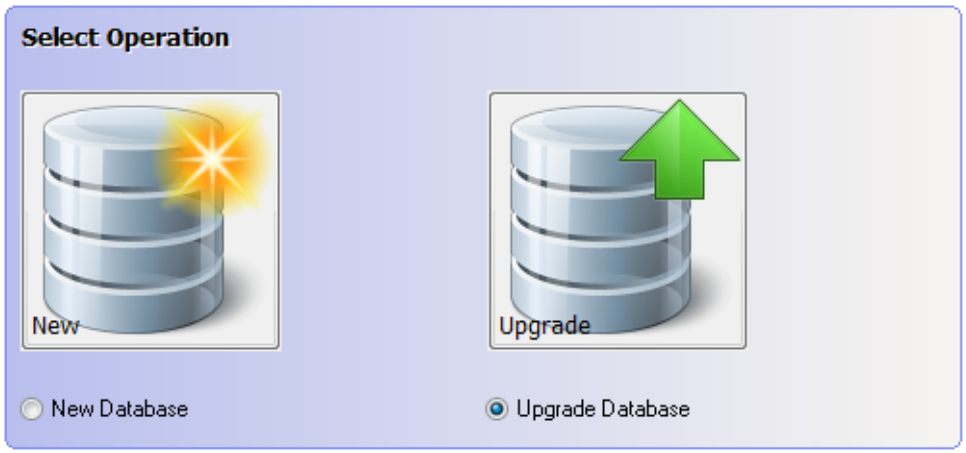
1. When you are notificed to upgrade, click **Yes**.

   Or, you can locate the AMOSDBUtil.exe in the AMOS installation folder, and start it up.

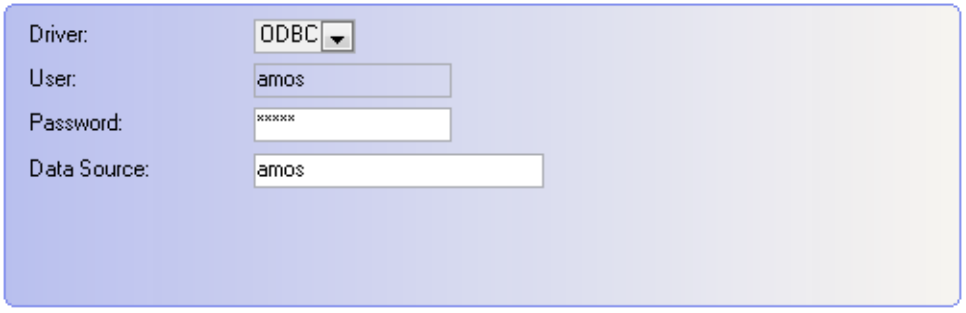
2. Choose your **DBMS**:



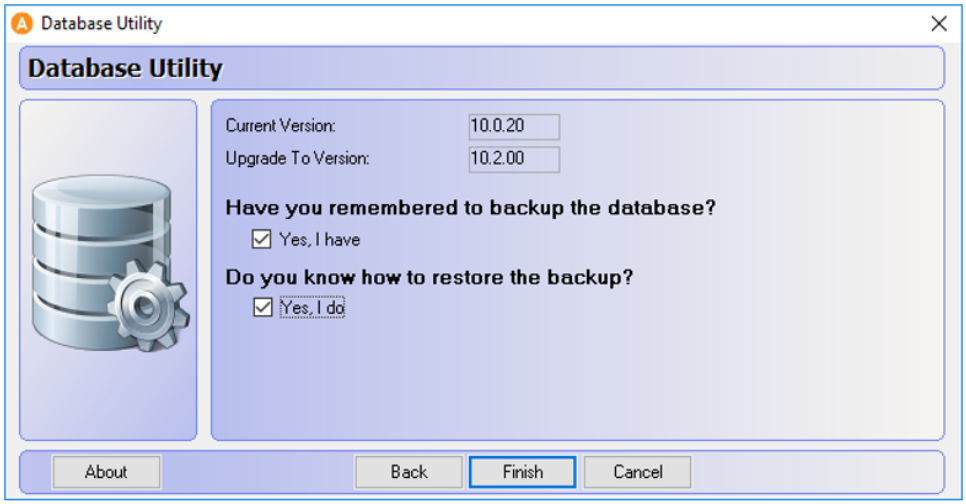
3. Click **Next**.
4. Choose **Upgrade Database**:



5. Click **Next**.
6. Your default settings are already there:



7. Click **Next**.
8. Before you can proceed, the utility will remind you to backup your existing database:



9. Click **Finish** to run the upgrade. AMOSDBUtil will display progress bars to keep you informed of the database upgrade status.
10. When the confirmation dialog appears, click **OK**.

Silent Database Upgrade

The AMOSDBUtil application can also be run in *silent mode* - that is, without any user interaction.

From the command line interface, you can specify arguments to the application such as AMOSDBUtil.exe/upgrade. Adding '/silent=TRUE to this argument indicates that there will be no user interactions: presuming all necessary command line parameters are provided.

```
amosdbutil.exe /silent=TRUE /upgrade=TRUE /dbms=AY /driver=ODBC /DSN=<dsn>
```

Any resulting errors will be logged in the /logfile[1], but not shown on-screen. If any errors occur, AMOSDBUtil will return 1; if the operation is successful AMOSDBUtil returns 0. The error level can be retrieved by the calling application. Below is a sample CMD file:

```
echo off
echo This will upgrade your database
pause
AMOSDBUtil.exe /silent=TRUE/upgrade=TRUE/DBMS=AY/driver=ODBC/DSN=amos
if not errorlevel 1 goto end
echo An error occurred during database upgrade
:end
echo End of batch program
```

The table below contains the valid parameters:

Parameter	Setting	Note
/silent=	[TRUE/FALSE]	
/upgrade=	[TRUE/FALSE]	Silent mode is supported on database upgrade only; not on creation of new database.
/DBMS=	[AY|MS|OR]	The DBMS in use.
/driver=	<driver>	ODBC for SQL Anywhere; ODBC or SNC for MS SQL; O10 or ORA for Oracle.
/user=	amos	This parameter is not used: the default for ABS is always 'amos'.
/logid=	amos	This parameter is not used: the default for ABS is always 'amos'.
/password=	<pwd>	If the database password differs from the standard ABS default password: either /password or /logpass must be provided.
/logpass=	<pwd>	If the database password differs from the standard ABS default password: either /password or /logpass must be provided.
/servername=	<server name>	Must be provided for Oracle and for MS SQL with SNC.
/crydir	<Location of the cry files>	<AMOSDBUtil directory> + "\cry"

[1] error.txt file, located in the AMOS installation directory.

AMOSDBUtil and Customised Triggers

Complex solutions built around AMOS often involve the installation of customised database triggers, procedures and functions. Such customisations are however deleted by AMOSDBUtil before upgrading the database. Rather than requiring the user to reinstall these customisations manually, AMOSDBUtil allows re-installation to be performed as part of the upgrading process.

AMOSDBUtil behaves as described below when upgrading or creating a database.

During Database Upgrade

1. All database triggers, procedures and functions are deleted.
2. Script file <DBMS>USINIT.SQL is executed before the upgrade starts.
3. Script file <DBMS>USFIN.SQL is executed after the upgrade completes.

During Database Creation

Script file <DBMS>USFIN.SQL is executed once the database has been created.

Where <DBMS> must be one of the following:

- 'AY' - representing Sybase SQL Anywhere
- 'MS' - representing Microsoft SQL Server
- 'OR' - representing Oracle

For example, AYUSINIT.SQL is the initial user-defined script for SQL Anywhere.

> **Note:** All script file commands must be separated by the ¤ symbol.

CHAPTER 5

Other Considerations

This chapter includes the following topics:

Scrambling the Database Connection Password 50
Copying Data - Configuring DBCopy 52
Sending Email: Installing Ghostscript 53
Custom Login Screen 57
Auto Login 58
Trouble-Shooting 60

SpecTec

Scrambling the Database Connection Password

SpecTec recommends that you always store the database connection password in a non-readable format: you can use the Password Scrambling tool in AMOS to render the password shown in the Amosw.ini file non-readable.

1. Go to **Tools > Utilities > Password Scrambling**.
2. Type in the database connection **Password**.
3. Click the **Scramble** button. This creates some random text for you:



   The scrambled text is also now on the clipboard.

4. You can either **Close** the dialog and then browse to and open the Amosw.ini file, or just click the **INI File** button in the Scrambler dialog.
5. Scroll to your DBMS in the .ini file.

   Oracle

   Paste the text from the clipboard right over top of the "Logpassword=" parameter in the [Database] and [Import] sections:

```
;;;
```

MSSQL, SQL Anywhere

Paste the text from the clipboard underneath the "DBMS=ODBC" parameter in the [Database] and [Import] sections. Then, change the "pwd=" setting in the [Database] and [Import] sections to '%password%':

```
;;;
```

The last folder contains the DLLs to be used for the connection to MSS using the ODBC driver. This is set up during installation of DBInstall.

If everything is set up correctly in DBCopy.ini and the ODBC drivers are available for SQL Anywhere and MS SQL Server database types, you will be able to start DBCopy. If some parameters are set incorrectly, you will not be able to start DBCopy.

Sending Email: Installing Ghostscript

You will need to install Ghostscript if:

- you want to send order forms from AMOS with multiple pages of items as emails with attachments, and/or
- you want to include PDF files in AMOS maintenance project specifications.

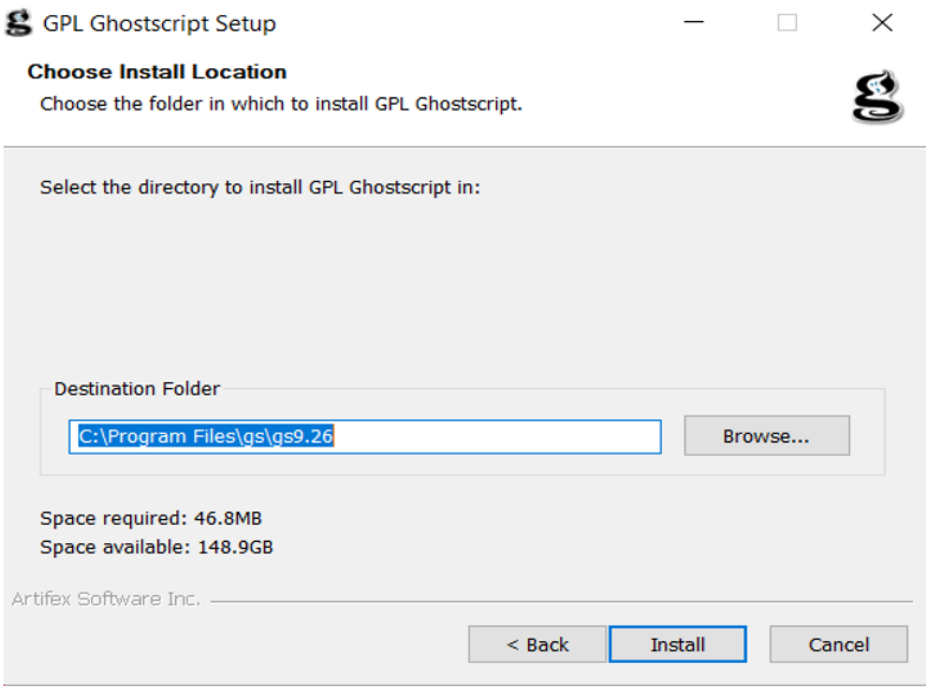
AMOS supports both the 32 bit and 64 bit versions of Ghostscript. However, you should only install the 64 bit version if you intend it for use just as a printer driver. To *also* allow adding PDFs to project specifications (in addition to use as a printer driver), you require the 32 bit version. See the **Note** at the bottom of this section about Ghostscript and adding PDF files to project specifications.

After installing the driver set the parameter 'Mail Attachment Type' to PDF Ghostscript. If you set this parameter before installing the driver, when a user attempts to print a form to email AMOS will inform the user to download and install Ghostscript.

```
Ghostscript is available at: http://www.ghostscript.com/
```

The following instructions apply to users running on Windows 7. If you are running on a different version of Windows, some steps will differ slightly.

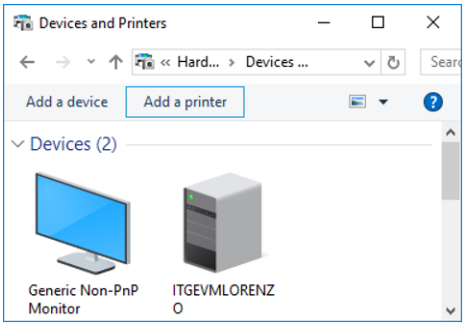
1. Double-click on the downloaded .exe file. Click **Next** in the Welcome dialog and **I Agree** in the License dialog.
2. The GPL Ghostscript Setup dialog appears. Choose the directory where you want to install Ghostscript:



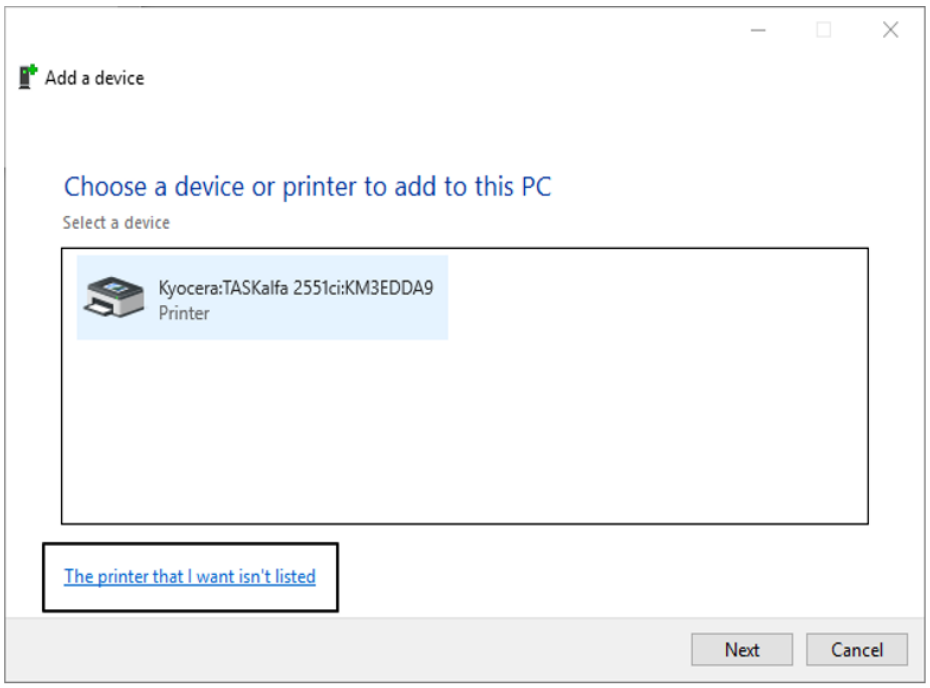
3. Click **Install**. A dialog will inform you when the installation is complete. Click **Finish**.

Configure the PDF printer:

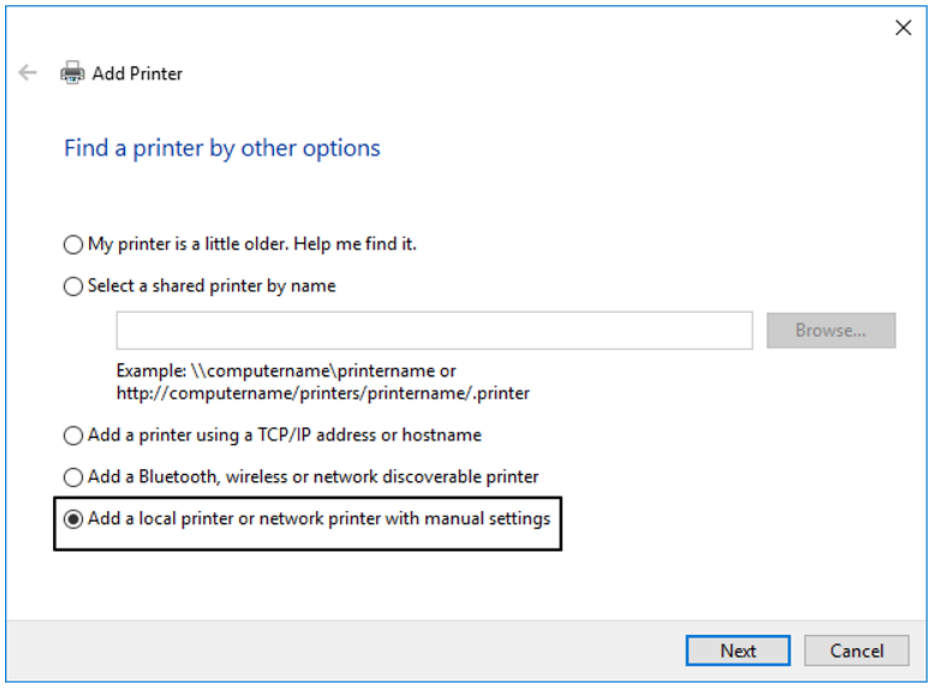
1. Go to **Start > Control Panel** and under 'Hardware and Sound' click on **View Devices and Printers**.
2. Click **Add a Printer**.



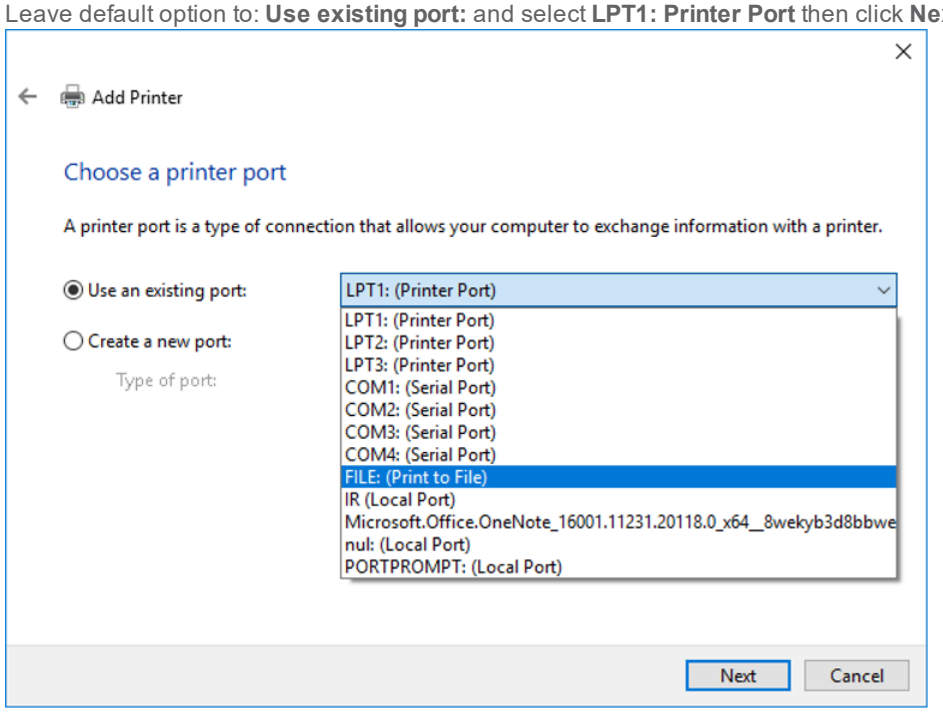
3. The Add Printer Wizard opens. Choose **Add a local printer** and click on **The printer that I want isn't listed**.



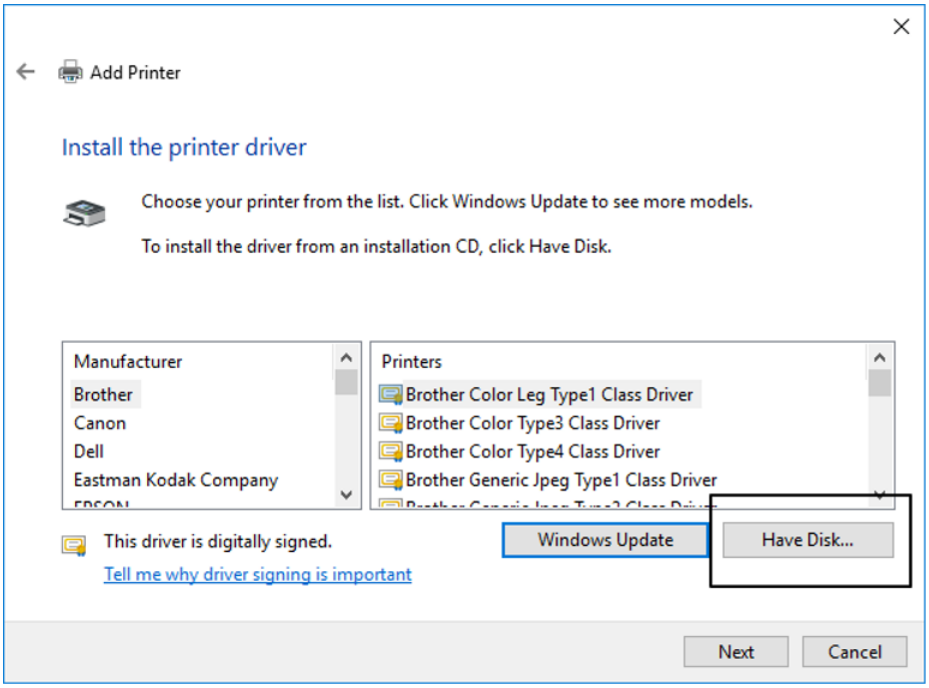
4. Select **Add a local printer or network printer with manual settings** option.



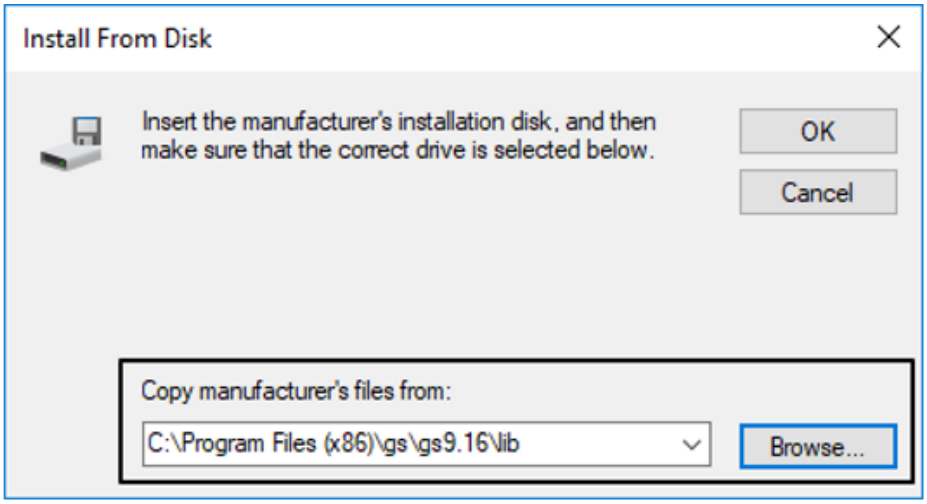
5. Click **Next**.
6. Leave default option to: **Use existing port:** and select **LPT1: Printer Port** then click **Next**.



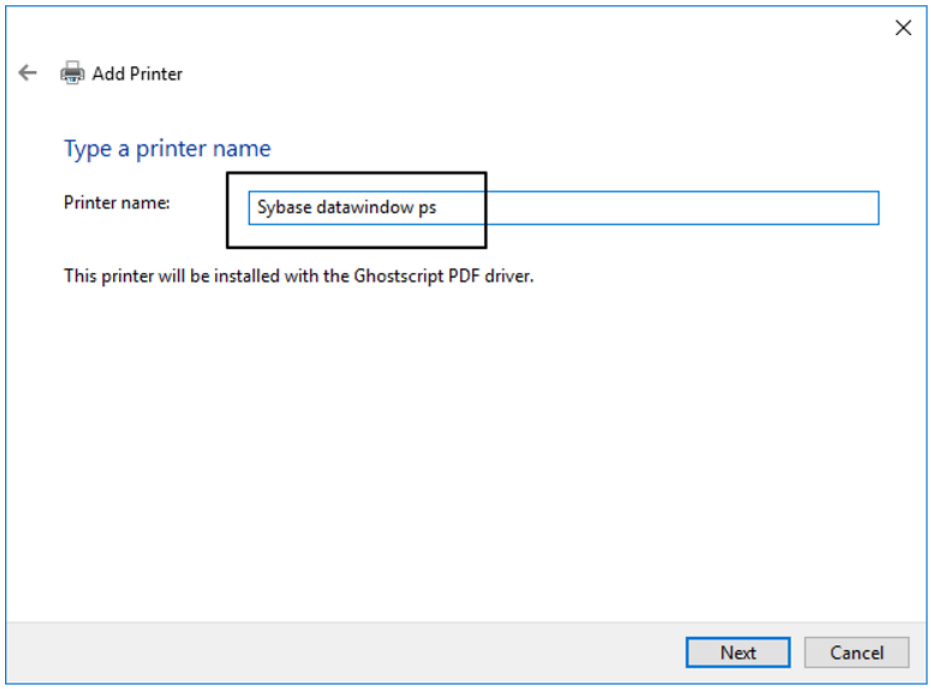
7. In the following dialog click **Have Disk...**



8. In the Install From Disk dialog, **Browse** to the ghostpdf.inf. This file is located in the path where you installed Ghostscript, in the folder \lib.



9. Click **Open** and then **OK**. You return to the Add Printer dialog; click **Next**.
10. In the next dialog, specify sybase datawindow ps in the **Printer Name** field.



11. Click **Next**. Then in the final dialog, click **Finish**.

After installing and configuring Ghostscript:

1. Open AMOS Business Suite.
2. Go to **Tools > Configuration > Parameters**.
3. Expand **Options > Purchase > Output** and select the 'Mail Attachment Type' parameter.
4. Set the parameter Globally to 'PDF Ghostscript'.
5. **Save** the window.

Note: About Project Specification PDFs and Ghostscript

Generating a project specification that includes any PDFs can sometimes return a message that attaching PDFs to a specification is only possible if GhostScript is installed - even when GhostScript is correctly installed. This happens if your system is missing the gsdll32.dll file - a 32 bit GhostScript dll file required to attach PDFs to specifications.

If you see this message, first determine if the dll is available to AMOS: go to **Help > About > System Info** and click the **Version** button. If the **Status** column contains a valid version number, the file is accessible. If not, to make the dll file accessible to AMOS either:

- add the folder where the file is located to the Windows path environment string (recommended). Or,
- copy it into the AMOS installation folder.

Custom Login Screen

It is possible to customise the Login and About screens to display pre-defined bitmaps. Your licence file needs to be adjusted to support this functionality and it is only activated on a case-by-case basis under a special distribution agreement.

Custom Login and About images can only be changed if the value for SystemType in the license file is >=10.

Option A

The files should be stored in the folder defined as the InstallationDirectory in the parameters. The file-names are logon##.TYP and about##.TYP, where ## is the SystemType as registered in the license file (SystemInfo.SystemType), and TYP is either the extension gif, jpg or bmp (they will be scanned for in that order).

Option B

As the Login and About windows contain some controls such as username and password fields, ok and cancel buttons, and text, there is an additional solution to define the login image and the position of the controls within the window.

The positions are relative to the left top hand corner of the Login and About windows (coordinates 0,0) and the positions of the controls are relative to each other and cannot be influenced.

Register the following in the AMOSW.INI file to use this solution:

```
[Customisation]
LoginControl_x=
LoginControl_y=
LoginPicture=
AboutControl_x=
AboutControl_y=
AboutPicture=
```

Where LoginControl_x, LoginControl_y, AboutControl_x and AboutControl_y define the coordinates to place the controls in the respective windows. The LoginPicture and AboutPicture parameters allow you to define the folder and name of the image for use in the Login and About windows.

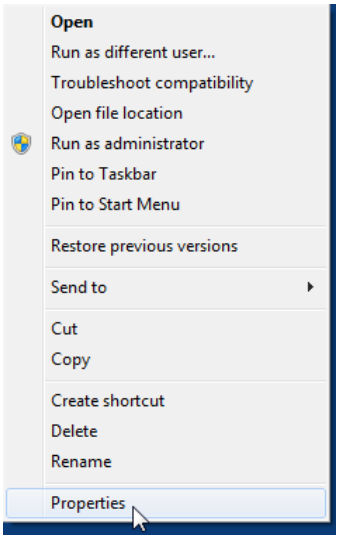
Auto Login

It is possible to pass a login ID and password as parameters on startup of AMOS Business Suite, thereby logging on 'automatically' and preventing that user from having to enter their user name and password each time they start the application.

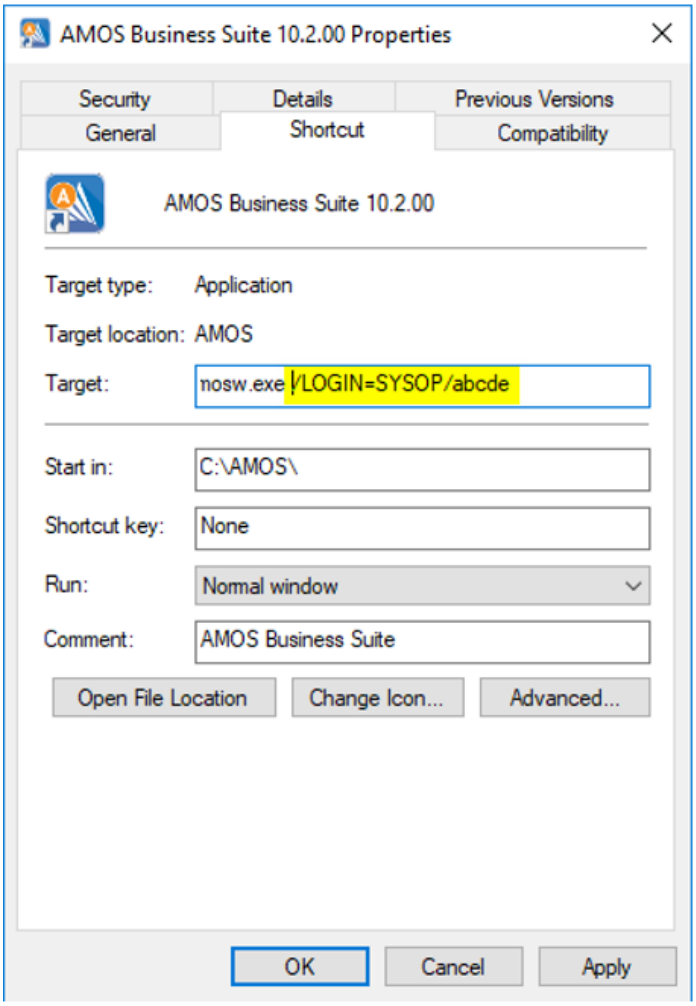
1. Right-click on the AMOS Business Suite shortcut icon on the desktop:



2. Select Properties from the popup menu:



3. Notice the **Target** field on the Properties dialog Shortcut tab:



It contains the path to the amosw.exe file. For example:

```
"C:\Program Files (x86)\SpecTec\ABS\ABS 10.2.00\amosw.exe"
```

4. Assume for this example the user name is sysop and their password is abcde. Add the following:

```
-user=sysop -password=abcde -autologin=true
```

Now the text in the **Target** field looks like this:

```
"C:\Program Files (x86)\SpecTec\ABS\ABS 10.2.00\amosw.exe" -user-
r=sysop -password=abcde -autologin=true
```

5. Click **OK** to exit the dialog.

While autologin=true, double-clicking the icon opens AMOS directly without presenting the login screen. If it is set to false, the logon screen is presented first but with the **Login ID** and **Password** fields already filled in.

Trouble-Shooting

Problem: Data is truncated:

The user gets a message that the table or register he opens in AMOS Business Suite has been truncated.

Suggestion: In the amosw.ini file, set StaticBind=0. See the example below.

```
[Database]
DBMS=ODBC
DBParm=connectstring='DSN=alph;UID=amos;pwd=%password%',
DelimitIdentifier='no',DisableBind=1,StaticBind=0
```

Problem: On starting AMOS Business Suite, some DLLs are not found:

On new installations of AMOS Business Suite, you could get a message that some of the DLLs are missing. These will normally be MSVCIRT.DLL, OLEPRO32.DLL and MCVCRT40.DLL. These are system files that are to be used by the Windows operating system. They should normally be placed in the windows/system32/ directory.

Problem: Unable to view open objects containing templates:

An MSSQL user could be unable to open certain records (history, work orders, etc.) that contain complex templates. Instead the user receives an illogical syntax error in template definition but the same template worked before upgrade, or on Sybase.

And/Or:

Problem: Unable to insert large pictures or text when using the enhanced editor:

An MSSQL user could be unable to insert pictures when using the enhanced editor (even if the size is within the editor size parameter setting). The picture is not visible when the screen is re-opened, and after closing AMOS the system locks when trying to access the record.

Suggestion: Within the pbodb115.ini file located in the AMOS installation folder, amend the following:

In the [Microsoft SQL Server] section, scroll down to the following lines:

```
PBMaxBlobSize='32767'
PBMaxTextSize='32767'
Now change the lines to read:
PBMaxBlobSize='327670000'
PBMaxTextSize='327670000'
```

And **Save** the file.

APPENDIX A

AMOS Unicode Compliance

To meet the requirements of many customers and prospects SpecTec PD is proud to announce that as of version 10.0.00, AMOS Business Suite supports the entry of Unicode data.

This chapter includes the following topics:

Introduction 62
Why Are We Going To Support Unicode? 62
What Does This Mean to Existing Customers? 63
Unicode Collation: Upgrading and Migrating Databases 65
What Does This Mean to Our New Customers? 65
What About Database Replication? 65
What Else is Important? 66
Questions or Concerns 66

SpecTec

Introduction

This appendix contains important information for *ALL* local offices and customers, and addresses the following topics:

1. Why are we going to support Unicode?
2. What does this mean to existing customers?
3. Unicode Collation: Upgrading and Migrating Databases
4. What does this mean to our new customers?
5. What about database replication?
6. What else is important?

Why Are We Going To Support Unicode?

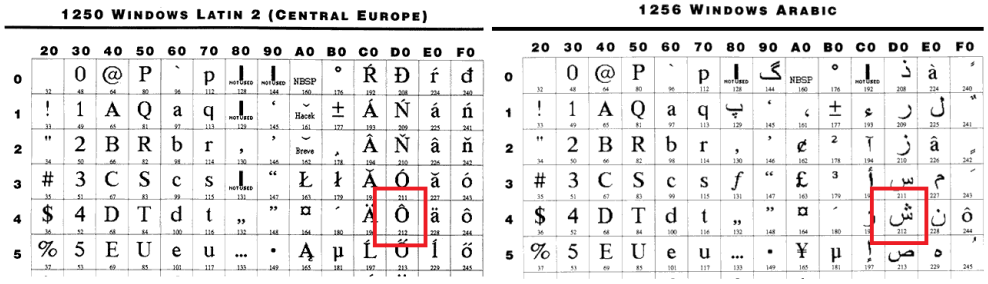
Overview

Characters entered into an AMOS database are translated into numbers. As of today, the amount of available numbers is limited (~256). A number is assigned to each character using a mapping table called a "code page". When you create an AMOS database, you select the code page - and this defines which characters are supported and so can be entered into the database text fields.

Limitations

You can only use the characters that are represented by your code page. Characters which are not included in the base code page cannot be used correctly in the database. Furthermore, it is dangerous to mix code pages.

For example, the number 212 in code page 1250 (Windows Latin 2) represents the character "Ô". But, in another code page such as 1256 (Windows Arabic), the number 212 represents character "ش".



If you are interested, you can compare both code pages here:

Code page 1250 (Windows Latin 2) - http://msdn.microsoft.com/en-us/library/cc195058.aspx

Code page 1256 (Windows Arabic) - http://msdn.microsoft.com/en-us/library/cc195058.aspx

The Situation Today

Depending on your code page, ANSI symbols can be presented in our AMOS applications as SBCS (Single Byte Character Set) or DBCS (Double Byte Character Set). This means you can:

1. Enter Latin (SBCS) symbols only.

   or

2. Enter a limited set of Asian symbols (DBCS), mixed with Latin symbols.

Advantages of Unicode

Unicode assigns one unique number to every character which exists in the world. So if your database is based on a Unicode code page you can enter any character you want and it will be correctly interpreted in any other Unicode database as well. This means you can blend languages as you want, entering Chinese, Korean, Arabic, Cyrillic, Latin and any other characters mixed together. Therefore, you can enter any character from any Unicode compliant language in your AMOS databases.

What Does This Mean to Existing Customers?

What does this mean to our existing customers, who upgrade to Unicode versions[1]?

Database Schema Changes

To achieve Unicode compliance, it is necessary to change the type of text fields to Unicode data types. Due to database backend limitations this means that the maximum field size needs to be reduced.

This applies to ALL existing AMOS installations - regardless of whether Unicode data is going to be entered or not.

Data Truncation

The aforementioned database schema change means that in certain cases you need to update the AMOS database PRIOR to migrating to the new version.

The varchar columns in the current AMOS versions support up to 4000 characters:

> varchar(4000) = 4000 bytes = depending on the character set, up to 4000 characters

Technically this means that all "varchar" columns will be converted to "nvarchar", with a maximum size of 2000 characters.

This applies to ALL existing AMOS installations - no matter if Unicode data is going to be entered or not.

Database Upgrade

During an automatic upgrade from an older version to a new version, if the routine identifies text data which would be truncated, the upgrade will be prevented.

This is why it is fundamental to carry out a compliance check BEFORE initiating the upgrade on a production environment.

Database Unicode Field Length Compliance Check

Please refer to the document *Unicode Compliance Verification* for an explanation of how to use the new Unicode Compliance Verification tool to perform a database field length compliance check.

Database Requirement for Unicode

Successfully completing the migration does NOT mean that you can automatically use Unicode characters. To enter Unicode data into your AMOS database, it must meet the requirements listed below.

If Unicode support is required but your database does NOT meet these requirements, re-create and reload the database. If no Unicode data will be entered, no action is required.

The supported database collations for Unicode are:

[1] Refer to the flowchart on the last page of this appendix, for a visual overview of the complete Unicode DB Update Process.

ASA

1. Collation Requirements

   ASA Database for AMOS with Unicode support should obtain following settings:

   CHAR collation UCA

   NCHAR collation UCA (default)

   Also, UTF8BIN is also acceptable for both.

2. DB Upgrade

   - Unicode data entry required: If CHAR collation is non-Unicode type, then a new database should be created with CHAR collation UCA (or UTF8BIN) and data should be reloaded with full export/import (Sybase Upload Utility).
   - Unicode data entry NOT required: CHAR collation could be any available on ASA.

ORA

1. Collation Requirements

   Oracle database for AMOS should obtain following NLS settings:

   Database Character Set AL32UTF8

   National Character Set AL16UTF16

2. DB Upgrade

   - Unicode data entry required: If Oracle database instance with different collation than Database Character Set AL32UTF8 and National Character Set AL16UTF16 then oracle database instance should be recreated. Data content should be reloaded with full export/import (Oracle Export/Import utility).
   - Unicode data entry NOT required: Database Character Set could be any available on Oracle.

MSS

1. Collation Requirements

   There are no requirements for collation. Any suitable collation for customer needs is acceptable.

2. DB Upgrade

   - No specific actions are required.

Heterogeneous Fleet Environments

Entering Unicode data may only begin when ALL vessels in the fleet have been updated to a Unicode compliant version. Customers can continue to enter data as they did before, using all of the characters they used prior to the upgrade.

Even when the office is upgraded to a newer version, they can only begin entering the Unicode characters after all databases have been updated as well (otherwise it will not be possible to interpret the entries).

Unicode Collation: Upgrading and Migrating Databases

There is a correct order in which to upgrade and migrate existing databases to Unicode collation. Refer to the flowchart on the last page of this appendix, for a visual overview of the complete Unicode DB Update Process.

Terminology

Upgrade.The standard process to update an AMOS database for a new version of AMOS. This is done using the standard AMOS database tool (AMOSDBUtil).

Migration. The process of recreating a database with a different collation, i.e. Unicode. This is done using the database backend tools.

When converting an existing database to **Unicode collation**, it is very important to carry out the upgrade and migration in the correct order:

1. Upgrade the database to the new version using the AMOS update tool AMOSDBUtil.
2. If necessary, migrate the database to a Unicode compliant collation.

To prevent loss of data it is crucial that the upgrade is carried out first, prior to the database migration.

What Does This Mean to Our New Customers?

We recommend that all new customer databases be created with Unicode compliant collation settings (see above). The AMOS database utilities will suggest the related settings as default.

What About Database Replication?

General Note

AMOS Business Suite < 10.0.00 databases do NOT support Unicode.

This means that before starting to enter Unicode data into AMOS, it is a mandatory that ALL vessels in the fleet have been updated to a Unicode compliant version of AMOS.

Native Import/Export

AMOS's native import/export engine supports replication of Unicode data, as of the Unicode compliant versions of AMOS.

In both AMOS suites there is a parameter available for switching the replication file format from "Non-Unicode" to "Unicode". The "Unicode" file format can only be understood by the Unicode compliant AMOS versions, so it must ONLY be activated when the entire environment is Unicode compliant.

AMOS Replication

AMOS Replication versions 6.4.00 and onwards, support replication of Unicode data.

We strongly recommend updating older installations of AMOS Replication to version 6.4.xx, even in the case that you are not going to enter Unicode strings.

Before installing a Unicode compliant version of AMOS, ensure that Replication 6.4.xx is installed on the site.

AMOS Replicator

All versions of AMOS Replicator support replication of Unicode data.

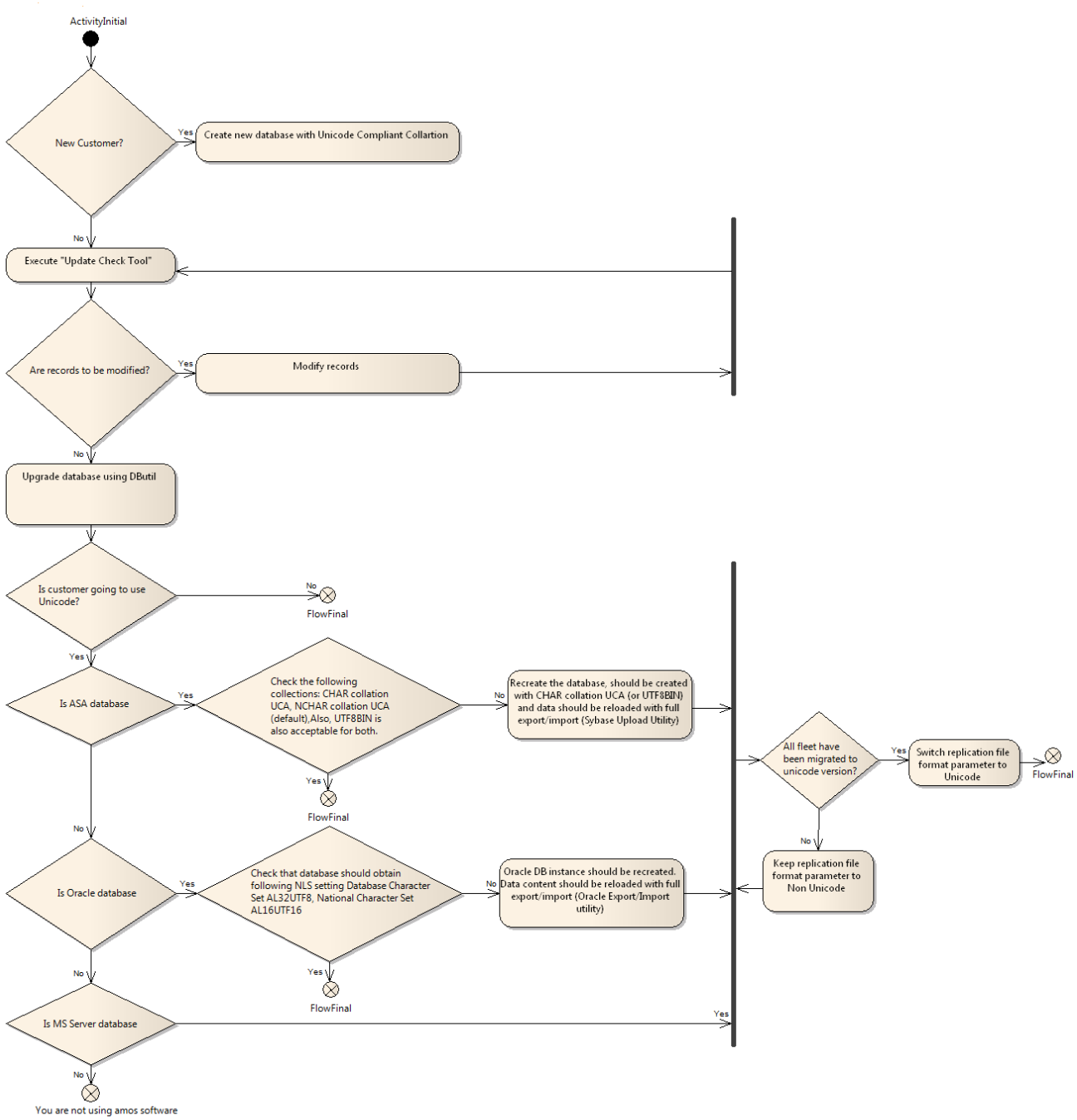
What Else is Important?

As usual any customization or interface work must be checked, and then moved to Unicode compliance. Do this before the update is carried out in a production environment.

Questions or Concerns

For any doubts, concerns, questions or comments related to the Unicode implementation please contact SpecTec Global Support.

Any questions or comments are welcome and much appreciated.



A representation of the Unicode DB Update process

INDEX

A

AMOSUtil 47

Authentication Support 27

Auto Login 58

C

Custom Login 57

Customised Triggers 47

D

Database

- MS SQL 33
- Oracle 38
- SQL Anywhere 14

DB

- Upgrade 44

Define Installation Directory 42

G

Generate a Setup.iss File 9

Ghostcript 53

I

Installation Directory 42

Installation Procedure 2

L

Login 58

- Custom 57

Login Automatically 58

M

MS SQL

- Create DB 33
- Create ODBC Data Source 29
- Installing 28
- New DB 33
- Reconfigure ODBC 35

O

Oracle

- Create DB 38
- Create DB Instance 37
- Installing 37
- Net Manager 37
- New DB 38

R

Reconfigure ODBC 35

SpecTec

S

Setup.iss File 9
Silent Installation 9
    Procedure 11
SQL Anywhere
    Authentication 27
    Configure Network Server Client 22
    Configure Personal Server Client 25
    New DB 14
SQL Anywhere Server
    Configure 17
Sybase
    Authentication 27
Sybase Central 17

U

Uninstall 12
Upgrade a DB 44