# Matrix 3 Troubleshooting & How-To Guide
# Installing Matrix Software

## General Overview

Matrix 3 is a software-based Fluid Management System that runs on one or more of your facilities computers (PC's). This guide only applies to the Graco Matrix 3 Fluid Management System and walks you through issues and the solutions to remedy them.

Throughout this guide, there will be colored text entries, they are:

Links – These are links to other support resources that may be needed to accomplish the task you are working on.
Green Text – These are navigational commands directing you to skip to or reference another section in the guide. If the command is underlined, clicking it will direct you to the location it describes.
Red Text – These are STOP points where you will need assistance from IT, Graco or your Graco distributor.

Specific troubleshooting topics can be found in the instruction manuals below. This guide will provide more theory of operation and detail on addressing specific issues. Click the links or type the numbers into the Graco.com search box.

313046 - Meters
313008 - Transceivers
312964 - Tank Level Monitors
312417 - Pump Air Controls
313013 - Matrix 3 Oil Bars
313104 - Basic Software
313106 - Professional Software (includes 3rd Party Interface capability)
313108 - Premier Software (includes 3rd Party Interface capability)
313112 - Premier Software with CDK Interface
313114 - Premier Software with Reynolds & Reynolds Interface
334786 - Premier Software with Procede/Excede Interface
3A4999 - Premier Software with DealerTrack Interface (As an addendum to the Premier Software Manual)

Notes:

- All PC related references used in this guide are based on the Microsoft Windows 10 Operating System conventions, other versions of Windows operating systems may vary.
- Troubleshooting efforts may require help from your IT/IS staff or vendor. Having them available is highly recommended.
- If you need Matrix software, contact Graco and they will get you a direct download link. All PC's must be running the same version of Matrix software, delete or discard any different versions you have.
- Check for new and updated content by visiting graco.com/matrixsupport, scroll down to the "Guides" section.
- If you find you still need help, contact a Graco Tech Assistance Agent by using the information found at the bottom of each page of this guide.

# Installing Matrix Software

## Overview

Matrix 3 Software has evolved over the years, the most recent 3.9.x versions have added security protocols and thus have slightly different installation procedures. They are also able to update existing Matrix software versus having Graco perform manual database updates, do **NOT** attempt an update before going through this guide. For versions up to 3.7.9, instructions can be found in the manuals listed above. Matrix is now obsolete and the latest released version is 3.9.40 (al levels).

## Security Certificates

The new 3.9.x Matrix versions have new security protocols and will be setup automatically when Matrix is installed on the Matrix Server and nothing else needs to be done. Additional Matrix Clients (if used), need the certificate manually transported as described in the guide below. If your Matrix software version (3.9.x or newer) includes a DMS integration (CDK, Reynolds, Dealertrack or Procede), installing Matrix automatically sets up these security certificates as well. The exception is for Procede sites where they have a local Procede server, in these cases, no security certificate is needed.

## PC Requirements

Most all new PC's today are capable of running Matrix, it is recommended to use a new PC for your Matrix system. It is also good practice for the Matrix "Server" to be a "stand alone" PC that doesn't have other resource heavy applications running on it, however most Matrix systems are installed on regular user's PC's. As of the obsolescence of Matrix, it is known to run on all Microsoft Operating systems from Windows XP to Windows 11. No further support will be provided for newer systems if Matrix is found not to work, so keeping a PC running a lesser operating system may be required should newer versions fail. Matrix versions 3.9.x do not run on Windows XP.

## Before Getting Started

Make sure to read the "Notes" section under the installation links listed below before clicking one of them. Failure to do so may result in a broken system and cause unnecessary downtime and inconvenience.

Matrix has two different installation types and both are run from the same installer – "Typical" (Server) or "Custom" (Clients). Additionally, there are different scenarios and you will first need to determine the type of installation this is, if you are:
- Doing a "Fresh" installation where you are starting from the beginning, skip to "Fresh Installation of Matrix".
- Adding another PC to your existing Matrix system, skip to "Adding a Matrix PC".
- Upgrading a PC, and want to update the software as well, skip to "Upgrading a PC and Matrix Software".
- Upgrading a PC, and want to keep the same version, stop here and visit graco.com/matrixsupport and find the "Windows Upgrade Guide for Matrix" guide for help instead.

Notes:
- Whatever path you follow, keep in mind that all Matrix computers MUST be running the same software version.
    - Keeping the same software version may be less time consuming if you have many PCs with Matrix. You will NOT have to reinstall all of them unless you choose to update the software also.
- If you already have Matrix installation media on a CD, USB or network drive, make sure it is the same version as what is installed on the current system, or if installing a fresh installation, use the current version, destroy old media if different.
- If you need help identifying the version, visit graco.com/matrixsupport and find the "Identifying Matrix 3 Software" guide.
- If you need a copy of Matrix software, visit software.gracomatrix.com when/if instructed to do so in this guide.
- Having a USB drive handy during all installations is highly recommended. An accessible network drive will also work.

**Contact Graco LED Tech Assistance at 800-533-9655, option 2 or LEDtech@graco.com**

- If you experience any problems during the course of updating, try restarting the Matrix Services before contacting Graco, visit graco.com/matrixsupport and find the "Matrix Services" guide for additional help.

## "Fresh" Installation of Matrix

When installing Matrix "from scratch" or if you are unable to recover a Matrix database from a PC crash for instance, always use the newest version available. When you run the installation program, it will inform you about the two types of installations and the next click will have you choose which one you want. Always start with the Server (Typical) if installing on more than one PC.

### Installing the Server – "Typical"

This is the main PC that will hold the Matrix database and is known as the "Server". Typically there is only 1 Server on a network.
1. If you downloaded the Matrix software directly onto the new "Server" PC skip to step 6.
2. If you previously downloaded the Matrix software to a USB drive (or network drive), continue.
3. Log into the PC as an Administrator.
4. Insert the USB drive (or access the network drive) that has the installer on it.
5. Copy the installer to the Desktop.
6. Start the installation and simply choose ALL defaults (you will need to agree to the End User License Agreement).
7. Near the end, you may get a "Silicon Laboratories Inc." (Transceiver) driver failure message, ignore it and continue.
8. Reboot when prompted.
9. Log back into the PC.
10. Open Matrix and you can now start building the database or continue and come back to this step.
11. If it does not start, try restarting the Matrix Services, visit graco.com/matrixsupport and find the "Matrix Services" guide for additional help.
12. Will you be installing Matrix Clients?
    a. If no, skip to "Post Installation Tasks".
    b. If yes, continue.
13. Look on the Desktop for a file named "server" or server.cer".
    a. If it is not there, go to:
        i. 32 bit PC – "C:\Program Files\Graco\Matrix 3\Common".
        ii. 64 bit PC – "C:\Program Files (x86)\Graco\Matrix 3\Common".
14. Copy the "server.cer" file to a USB drive (or network drive).
15. Copy the Matrix installer file to the same drive also (if not there already).
16. Move to the first Matrix Client PC and continue.

### Installing Client(s) – "Custom"

These are secondary Matrix "Client" PCs that access the Matrix Server across your network. Clients are not required, but you can install as many of them as needed.
1. Log into the PC as an Administrator.
2. Insert the USB drive (or access the network drive) with the installer and "server.cer" file.
3. Create a folder on the "C" drive and name it "Graco".
4. Copy the installer AND the "server.cer" file to the Graco folder and start the installation from there, (NOT the USB or network drive).
5. A few clicks into it, change the setting from "Typical" to "Custom" and continue.
6. Next there will be additional choices, DO NOT change any of them and just proceed through the installation.
7. You will be prompted for the location of the "server.cer" file.
8. Click the "Browse" button and find the "server.cer" file location (Graco folder) and continue.
9. After a few more clicks you will be prompted for the Name (preferred) or IP Address of the Server.
    a. To find the name of the Matrix Server PC, open the "server.cer" file (Example: Issued to: PC123).

10. Enter it and click next.
11. Enter it a second time when prompted.
12. Continue with the rest of the default choices.
13. You may get a "Silicon Laboratories Inc." (Transceiver) driver failure message, ignore it and continue.
14. Reboot when prompted.
15. Repeat on additional Clients if needed.
16. Once done, skip to "Post Installation Tasks".

## Adding a Matrix PC

Adding a Matrix PC means you already have a Matrix "Server" (and possibly other Clients), but want to give someone else access by installing Matrix on their PC also. Before you start, make sure you are installing the same version of software on the Client(s). If you are unsure of the version you have, visit graco.com/matrixsupport and find the "Identifying Matrix 3 Software" guide for help. Once you know the version of the existing Matrix system, you can begin installation on the new Client(s).If you already have the same Matrix software version/level on media (CD, USB or network drive), you can use that. If not, visit software.gracomatrix.com.

1. If the software version you are installing is 3.0.x to 3.7.9, skip to step 8.
2. If the software you are installing is 3.9.x or newer, continue.
3. Go to the Matrix Server PC.
4. Insert a USB drive or get access to a network drive.
5. Look on the Desktop for a file named "server" or server.cer".
   a. If it is not there, go to:
      i. 32 bit PC – "C:\Program Files\Graco\Matrix 3\Common".
      ii. 64 bit PC – "C:\Program Files (x86)\Graco\Matrix 3\Common".
6. Copy the "server.cer" file to the USB drive (or network drive).
7. Copy the Matrix installer file to the same drive also if needed.
8. Go to the new Matrix Client PC and log in as an Administrator.
9. Insert the USB drive or access the network drive with the installer.
   a. If installing 3.9.x, the "server.cer" file will be there also.
10. Create a folder on the "C" drive and name it "Graco".
11. Copy the installer to the Graco folder and start the installation from there, (NOT the USB or network drive).
    a. If installing 3.9.x, copy the "server.cer" file to the Graco folder also.
12. A few clicks into it, change the setting from "Typical" to "Custom" and continue.
13. Next there will be additional choices, DO NOT change any of them and just proceed through the installation.
    a. If installing 3.9.x, you will be prompted for the location of the "server.cer" file.
    b. Click the "Browse" button and find the "server.cer" file location and continue.
14. After a few more clicks you will be prompted for the Name (preferred) or IP Address of the Server.
    a. If you don't know the name of the Matrix Server PC:
       i. If installing 3.9.x software, find the name of the Matrix Server PC by opening the "server.cer" file (Example: Issued to: PC123).
       ii. If installing 3.0.x to 3.7.9 software, you will have to find the PC name from the Matrix Server itself.
15. Enter it and click next.
16. Enter it a second time when prompted.
17. Continue with the rest of the default choices.
18. You may get a "Silicon Laboratories Inc." (Transceiver) driver failure message, ignore it and continue.
19. Reboot when prompted.
20. Repeat on additional Clients if needed.
21. Once done, skip to "Post Installation Tasks".

**Contact Graco LED Tech Assistance at 800-533-9655, option 2 or LEDtech@graco.com**

## Upgrading a PC and Matrix Software

There are different processes for upgrading a Matrix PC depending on what type of role it plays - "Server" or "Client(s)".

**Note:** After successfully upgrading a running system to the newest version of Matrix, make sure to delete or discard any older versions you have to avoid confusion in the future.

### Matrix Server Update/Upgrade Prerequisites:

- On the running system, there must NOT be any "Unknown" Meters in the left side of the main operating screen (when you first open Matrix). If there are, stop here and contact Graco.
- Note the version and level of Matrix running on the existing Server. Visit graco.com/matrixsupport and find the "Identifying Matrix 3 Software" guide if you need help.
- Your current Matrix version MUST be 3.3.1 or newer and the same software level (Basic, Professional, Premier or Premier with Interface) for the update to work. If it is 3.2.1 or lower, stop here and contact Graco.
- To obtain the new software, visit software.gracomatrix.com to download new software.
- Graco recommends having a USB drive or network drive available for moving files between PCs when installing Matrix.
- Download the software directly to the existing Server or copy it to a USB or network drive.
- It is recommended to have all Windows updates applied on the new PC BEFORE you start the Matrix software update.
- Do NOT use any version other than the most current version, older versions may not be capable of updating and may result in a broken system and cause unnecessary downtime and inconvenience.

### Old Server

1. Visit the current running Matrix Server.
2. Inform users of downtime before starting the update.
3. Log into the PC as an Administrator.
4. Insert USB drive or connect to a network drive that has the Matrix installer on it or download it directly as stated above.
5. Copy or download the new Matrix installer to the existing "C:\MatrixDbBackups" folder.
6. Start the installation from there (NOT the USB or network drive).
7. Choose "Update" when prompted.
8. Next simply choose ALL defaults (you will need to agree to the End User License Agreement).
9. You may get a "Silicon Laboratories Inc." (Transceiver) driver failure message, ignore it and continue.
10. Reboot when prompted.
11. Log back into the PC.
12. Open Matrix to verify the update worked.
13. If it does not start, try restarting the Matrix Services, visit graco.com/matrixsupport and find the "Matrix Services" guide for help with that.
14. Look on the Desktop for a file named "server" or server.cer".
    a. If it is not there, go to:
        i. 32 bit PC – "C:\Program Files\Graco\Matrix 3\Common".
        ii. 64 bit PC – "C:\Program Files (x86)\Graco\Matrix 3\Common".
15. Copy the "server.cer" file to the USB drive or network drive.
16. Copy the Matrix installer to the USB or network drive if it is not there.
17. Click the PC "Start" button and type "Edit".
18. The PC should find "Edit Matrix Settings", click to open it.
19. This will bring up a window with the title "Matrix Properties File Editor".
20. Click "File>Database Utilities>Export Database" and log in.
21. Change the path to the USB or network drive and click "Export Database".
22. Once it is finished, shut down the PC and remove the USB drive if used.

New Server
1.  Set the new Server in place, connect all cables, turn on and log in as an Administrator.
2.  Insert the USB drive (or access the network drive) that has the installer and other files.
3.  Create a folder on the "C" drive and name it "Graco".
4.  Copy the Matrix installer, exported database and "server.cer" files to the new Graco folder.
5.  Start the installation from there (NOT the USB or network drive).
6.  Next simply choose ALL defaults (you will need to agree to the End User License Agreement).
7.  You may get a "Silicon Laboratories Inc." (Transceiver) driver failure message, ignore it and continue.
8.  Reboot when prompted.
9.  Log back into the PC.
10. Open Matrix to confirm it works:
    a.  If it does not open, restart the Matrix services, visit graco.com/matrixsupport and find the "Matrix Services" guide if you need help.
    b.  If it does open, close it.
11. Click the PC "Start" button and type "Edit".
12. The PC should find "Edit Matrix Settings", click to open it.
13. This will bring up a window with the title "Matrix Properties File Editor".
14. Click "File>Database Utilities>Import Database" and log in (new installations have a default username/password).
    a.  Username = matrix
    b.  Password = graco
15. Click the 3 dots (…) button and change the path to the Graco folder and then click "Open". (Example - manualBackup_20210504_152224.sql)
16. Click "Import Database".
17. Click "Yes" to the next prompt and "OK" to the following prompt.
18. When you see "Import Successful", click "Close and exit.
19. Open Matrix to confirm it works and has all your data:
    a.  If it does not open, restart the Matrix services, visit graco.com/matrixsupport and find the "Matrix Services" guide if you need help.
20. If you see all of your devices listed, the upgrade was successful!
21. Will you be installing Matrix Clients?
    a.  If no, skip to "Post Installation Tasks".
    b.  If yes, continue.

Matrix Client Update/Upgrade Notes:
•   It is recommended to have all Windows updates applied on new PCs BEFORE you start Matrix software updates.
•   If you have Matrix Transceivers connected to Clients, update them first, then proceed to other Clients.

All Clients
1.  If the Matrix Client PC you are at does NOT have Matrix already installed on it, skip to step 4.
2.  If the Matrix Client PC you are at has a different version than what you are installing, continue.
3.  Uninstall Matrix
    a.  Click the PC "Start" button and type "add or remove".
    b.  The PC should find "Add or remove programs", click to open it.
    c.  This will bring up a window with the title "Apps & features".
    d.  Scroll down and click "Matrix 3", then choose "Uninstall".
    e.  Continue until it is complete.
    f.  Only reboot the PC if prompted.

4. Log into the PC s an Administrator
5. Insert the USB drive (or access the network drive) with the installer and "server.cer" file.
6. Create a folder on the "C" drive and name it "Graco".
7. Copy the installer AND the "server.cer" file to the Graco folder and start the installation from there, (NOT the USB or network drive).
8. A few clicks into it, change the setting from "Typical" to "Custom" and continue.
9. Next there will be additional choices, DO NOT change any of them and just proceed through the installation.
10. You will be prompted for the location of the "server.cer" file.
11. Click the "Browse" button and find the "server.cer" file location (Graco folder) and continue.
12. After a few more clicks you will be prompted for the Name (preferred) or IP Address of the Server.
    a. To find the name of the Matrix Server PC, open the "server.cer" file (Example: Issued to: PC123).
13. Enter it and click next.
14. Enter it a second time when prompted.
15. Continue with the rest of the default choices.
16. You may get a "Silicon Laboratories Inc." (Transceiver) driver failure message, ignore it and continue.
17. Reboot when prompted.
18. Repeat on additional clients if needed.

## Post Installation Tasks
Once done with your updates/upgrades, there are a few additional tasks to consider or perform.

### Server
Make sure Matrix opens before anything else. If the Server displays a "Cannot Send Message to MSE" message, restart the Matrix services, visit graco.com/matrixsupport and find the "Matrix Services" guide if you need help. Continue if Matrix now opens.

### Client(s)
- If a Client displays a "Cannot Send Message to MSE" message, first make sure the Server opens and if it does, confirm that the Client has:
  o The same software version installed as the Server.
  o The correct "Host Name" settings, visit graco.com/matrixsupport and find the "Edit Matrix Settings" guide if you need help.
- Open and make sure each Client displays the data from the Server when Matrix is opened.

### Transceiver check, test and driver update for Windows 10/11 PCs (if needed)
- Visit every PC that has a Transceiver connected to it and restart the Matrix Transceiver service (visit graco.com/matrixsupport and find the "Matrix Services" guide if you need help). Look for a "Transceiver Connected" message in the Matrix software event viewer (bottom of screen). There should be one entry for each Transceiver.
- Test for communication between a Transceiver and a Matrix device (Meter or Tank Level Monitor).
- Check the Transceiver driver to make sure it is up to date (Win 7 – any "6.x.x" version is good, Win 10 – version "10.1.3" or newer is good, Windows 11 – version "11.0.0" or newer is good. If an update is needed, visit graco.com/matrixsupport and find the "Windows Computer Settings" guide.

### Windows Settings for Matrix PCs
The Matrix Server and ANY Matrix Clients that have a Transceiver plugged into them need to have some Windows settings adjusted for trouble free Matrix operation. Visit graco.com/matrixsupport and find the "Windows Computer Settings" guide to get them set up.

## Primary Clients

For users to access the "Setup & Reports" (administrative) features, the PC they are using must be setup as a Primary Client. They must also have an Admin level user account to log in with. If you had any Primary Clients setup before the software update, they should still be set up correctly. Any added Matrix Clients that need to have this access to the Matrix Server will need to be setup as "Primary Clients" manually. Reference any of the Matrix software manual links at the top of this guide and search for "Primary Clients".

## Final Testing

It is now time to test to make sure everything works. You can attempt to perform a fluid dispense as you normally would. If you have Tank Level Monitors, you can perform a single button push on each one to see if an "Unscheduled Reading" shows up in Matrix. If assistance is needed, visit graco.com/matrixsupport and search the Matrix 3 Troubleshooting & How-To Guides listed.