Installation Guide for Release 2014.2

Table of Contents

ntroduction	1
Before You Begin Installation	3
System Requirements	5
System Requirements - Workstation: Discovery	5
Additional Requirements and Recommendations	6
System Requirements: Discovery Server	7
Additional Requirements and Recommendations	7
Networking	7
Database Cache	7
Storage	7
Network Attached Storage (NAS), Storage Area Networks (SAN), and Other Non-Windows Storage Solutions	8
Prerequisites	8
Microsoft .NET Framework 4.0	8
ESRI ArcGIS 10.1 Runtime Engine	8
Microsoft DirectX 11 End-User Runtimes	9
nstallation	11
End User Installation	11
Typical	19
Custom	21
Network Administrator Installation	28
Network License Server	28
Workstation Installation	28
Network Administrator Installation	28
Using LMKR Download or Release DVD	28
Using Application Distribution Site	29
Discovery Project Server (Optional)	36
LMKR Licensing	47
LMKR License Management Tool	47
Client License	48
Network License	49
Landmark Connectivity Installation	50
OpenWorks for Windows 5000.8.3.01	50
Preparing the SeisXchange Environment	51
Jtilities	53
Utilities - Install PRIZM Chart Utility	54
Utilities - Install SeisVision SEG-Y Trace Viewer	55
Uninstalling Discovery 2014.2 in Windows 7	57
Contacting Technical Support	61



Introduction

Welcome to the 2014.2 release of the GeoGraphix, Discovery™, Landmark® Connectivity, and Seismic Modeling software.

- Discovery includes the Discovery[™] 2014.2 version of PRIZM [™], the 2014.2 version of smartSECTION®, and the 2014.2 version of SeisVision[™]
- Landmark Connectivity includes the WellXchange™, GridXchange and SeisXchange™ software.
- Seismic Modeling includes the 2014.2 version of the LogM™ and STRUCT™ software.

Discovery software is available through the LMKR Support Portal - Downloads page or, on request, on a DVD.

Caution:

General Installation Requirements

- please refer to the <u>System</u> <u>Requirements</u> for a complete list The following conditions must be met before you can install the Discovery, Landmark Connectivity, and Seismic Modeling software:

- You must have Administrative Rights to the local computer that will run the install.
- Must have Internet Explorer 6.0 or higher installed.
- Microsoft .NET4.0 must be installed.
- Must have networking installed including the TCP/IP protocol.
- This software should only be installed on Windows ® 7 Enterprise 64 bit, Windows ® 7 Ultimate 64 bit, Windows ® Server 2008 R2 Standard 64 bit, or Windows ® Server 2008 R2 Enterprise 64 bit operating systems.
- If using Discovery on OpenWorks, OpenWorks for Windows 5000.8.0.0 must be installed. OpenWorks for Windows have two install options; you can use either the Full install option (recommended) or the Basic install option.
- If working in a network environment, do not forget that for all computers to continue to
 work together in shared projects, ALL computers (clients and servers alike) must be
 updated to the same version of Discovery if any of them are updated. It is intentional
 that computers with different versions of the Discovery software cannot (in normal
 circumstances) and should not (in any case) be connected with each other.

The Welcome Guide document included with the download from LMKR or on your DVD contains information on exciting new enhancements and features in the Discovery 2014.2 release.

This document includes very important information that you should read before installation:

- Before You Begin Installation
- System Requirements
- Installation Overview and Step-by-Step Instructions
- <u>Utilities</u>
- Uninstalling Discovery Software

If you have any questions or issues with installation, don't hesitate to contact Technical Support.

Before You Begin Installation

Before you start the installation process, GeoGraphix recommends that you follow these guidelines.

- If you are working in a network environment, install the LMKR license server on one computer to be used by all client computers.
- 2. Obtain your new license file. In almost all cases, a new release requires a new/updated license file.
- 3. Make sure you have the current install obtained from LMKR or on the DVD and the most recent software update files (if applicable) at the time of install.
- Make complete backups or archives of all your projects. This is a very important step, **DO NOT SKIP THIS** STEP. Remember, a backup (such as from a tape) is only as good as the last time it was tested.
- 5. Backup any customized files from the **Data** directory such as custom libraries, symbols, and coordinate system files. Do this only if there is ANY chance of going back to the previous version.
- 6. Test any project updates or functionality if desired in a non-production environment.
- 7. Make sure that the <u>prerequisites</u> have been installed.

Note: If working in a network environment, do not forget that for all computers to continue to work together in shared projects, ALL computers (clients and servers alike) must be updated to the same version of Discovery if any of them are updated. It is intentional that computers with different versions of the GeoGraphix software cannot (in normal circumstances) and should not (in any case) be connected with each other.

System Requirements

System requirements for all Discovery applications are provided as general guidelines. Hardware requirements will vary considerably depending on types of projects, project sizes, number of users, and network infrastructure/traffic. Contact your technical sales representative or technical support to discuss your requirements.

- Workstation: Discovery
 - Geologic Suite (DataManager, GeoGraphix, and PRIZM)
 - Geophysical Suite (SeisVision, pStaX, and SCAN)

<u>Caution</u>: Landmark Connectivity or using Discovery version 2014.2 with Discovery OpenWorks projects requires the 50000.8.3.01 version of OpenWorks for Windows.

- Project Server: Discovery
 - Geologic Suite (DataManager, GeoGraphix, and PRIZM)
 - Geophysical Suite (SeisVision, pStaX, and SCAN)

System Requirements - Workstation: Discovery

Supported Operating system	RAM	CPU	
Windows® 7 Professional x64			
Or	4.05.45		
Windows® 7 Enterprise x64	4 GB Minimum	Pentium i5/i7 or any Qua Core Processor	
Or	8+ GB Recommended	0010 1 10000001	
Windows® 7 Ultimate x64			
	Notes		

Note 1 – We recommend using the latest Microsoft service packs and security patches.	

Graphics Hardware Requirements			
Application Support Level	Required Operating System	Required Graphics Hardware	
All Discovery Applications including Discovery 3D and advanced 3D visualization	Windows 7 and above	DirectX 11capable hardware. (see note 2)	
Discovery Applications except for Discovery 3D and advanced 3D visualization	All Supported	All Supported	

Notes

Note 1 – Microsoft DirectX End-User Runtime (June 2010) is required to run Discovery 3D and Pro 3D.

Note 2 - To run Discovery 3D, and advanced 3D visualization it is recommended that an NVIDIA DirectX 11 compatible card be used. We recommend using the latest video drivers and MS updates for your system.

Additional Requirements and Recommendations

- DVD ROM required for media install. Download install available through Electronic Software Delivery at http://Support.lmkr.com.
- DCOM/Firewalls configured to allow remote access. Only necessary if sharing projects.
- Microsoft .NET Framework 4.0 (or 4.5) runtime is required.

	Optional Software Requirements
For spreadsheet Import Utility in WellBase, SeisBase, and LeaseMap	Excel 2007 or 2010 (32 or 64 bit)
For Selected Help Files	Adobe Reader
For Discovery on OpenWorks, GridXchange, SeisXchange	OpenWorks for Windows 5000.8.3.01 – Basic or Full (recommended) Install available on Landmark's LSM. (See Notes below) and SeisWorks 5000.8.0.2 (for seismic work-flows).
For Esri Geo-referenced images and Esri CAD file import in GeoAtlas	ESRI ArcGIS Runtime Engine 10.0 (SP4) or 10.1 (SP1) (included in the 3rd Party Installer).
For LogARC™ Version 3.2.1.00 access in smartSECTION	To use the LOGarc™ feature the LOGarc™ Version 3.2.1.00 soft-ware must be downloaded from IHS LogTech Canada, LTD and a valid account must be in place. You must have administrator rights to the computer on which you will load the software.
For TracPlanner Xpress for Discovery	WellPlanning for Discovery 2014.2 (contained within the Deci-sionSpace 5000.0.3.0 install, which is available on the Landmark LSM). Oracle Express Client or Oracle 10g Client 10.2.0.4 (32 bit).

Note: The OpenWorks Full install requires Hummingbird Exceed. The Oracle client installation in use with the OpenWorks Full installation requires that the "Administrator" option be selected. The "Administrator" option type includes the SQL Plus and the Oracle Database Utilities components, which are needed to run Discovery on OpenWorks, as part of the total OpenWorks package.

Note: Hummingbird Exceed is not required for the OpenWorks Basic install. If OpenWorks Basic installation is used, the Oracle client installation can use the "Administrator" option, which will include all of the needed components. Or, the Oracle client installation for the OpenWorks Basic installation can use the "Custom" installation type. However, with this install type the following components must be installed:

- Oracle Database Utilities 10.2.0.1.0, or Oracle client 11.2.0.2
- SQL *Plus 10.2.0.1.0, or Oracle client 11.2.0.2
- Oracle JDBC/THIN Interfaces 10.2.0.1.0, or Oracle client 11.2.0.2
- Oracle Net 10.2.0.1.0, or Oracle client 11.2.0.2

After these Oracle components are installed, run the upgrade patch to Oracle 10g 10.2.0.4 (32 bit).

System Requirements: Discovery Server

Supported Operating system	RAM	CPU		
Windows® Server 2008 R2 Standard x64 or Windows® Server 2008 R2 Enterprise x64 8 GB Minimum 16+ GB Recommended Quad 2.4GHz 64-bit or better				
Notes				

Additional Requirements and Recommendations

- DVD-ROM required for media install. Download install available.
- DCOM/Firewall must be configured to allow remote access.

Server performance is subject to a large number of variables. It is impossible to give specific recommendations here, but these are some guiding principles to use. In general, multi-user performance of a GeoGraphix Project Server is best when the server is dedicated to GeoGraphix and not shared with other applications, especially database applications. In addition, consideration should be made for the number of GeoGraphix users and the size and number of concurrently accessed projects. At some point having multiple project servers becomes a better solution than having all users on one server. Generally, somewhere between 10 and 20 users is when a second server might be suggested.

Networking

Networking performance depends on the number of users trying to access a server simultaneously as well as the bandwidth requirements for those users. Recommendations for server bandwidth typically specify server connectivity at a higher bandwidth than an individual user. For instance, users running at 100 Mbit should be accessing a server running on a 1 Gbit backbone. If users are at 1 Gbit, consider running multiple 1 Gbit connections on the server.

Database Cache

A large database cache is an important factor to consider when dealing with multiple users accessing large databases. The database engine is capable of addressing a practically unlimited amount of cache memory. The best way to size the memory is to estimate the memory requirements for other running applications and allow the database cache to dynamically allocate any remaining free memory. The engine will only allocate what it needs when using dynamic allocation up to the maximum specified. It is highly recommended that you let the database engine use as much cache memory as it requires on the host server. Increasing database cache memory is the quickest and most effective way to improve database related performance on large network projects. On a workstation it might be appropriate to reserve 1 to 2 GB for the OS and file system cache and 2 to 4 GB for other running applications. On a dedicated project server, not much memory needs to be reserved for other applications. The ideal maximum varies by project size, number of users, and other load consideration. But as a general rule, the higher you can set the maximum the better.

Storage

A great deal of Discovery's access patterns on a server deal with file I/O. Database access, raster images and seismic data are examples of files that benefit substantially from a fast disk sub-system. Server environments also place a high importance on data integrity and reliability. At a minimum, consider using a RAID 5 (striped with parity) array. As the size of disks increase, you may also want to consider a hot swap drive and/or RAID 6 (striped with dual parity). Using a controller card with its own cache can also help improve performance.

Network Attached Storage (NAS), Storage Area Networks (SAN), and Other Non-Windows Storage Solutions

There are two typical methods used for accessing external storage devices from a project server; iSCSI and CIFS.

- iSCSI allocates a block of storage on the external device and makes it appear to be a physical disk on the project server. This has the advantage of a 100% compliant file system. However since the external device sees the allocation as one big file, it makes backup and restore of individual files using the external device's capabilities more difficult. Standard backup and restore procedures from the server will still work.
- Using CIFS for external storage devices depends greatly on the vendor's implementation of the CIFS protocol used by the Windows platform. In general, a 100% compliant implementation of CIFS for a performant system is required. In particular, vendor's implementation of the "File Change/Notify" functionality has been problematic. Devices based on Windows Storage Server should be 100% compatible since it shares its components with Windows. Implementations based on UNIX/Linux are where problems occur due to the fact that the kernel level support is not present. Due to these uncertainties with CIFS implementations LMKR does not technically support CIFS.

Prerequisites

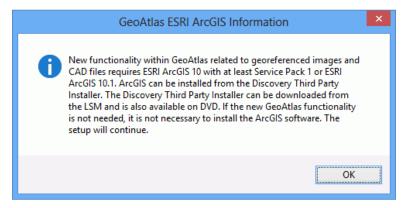
Discovery 2014.2 has several prerequisites that are required to run the software as well as prerequisites that are used to enhance the software.

Microsoft .NET Framework 4.0

Discovery 2014.2 must have Microsoft's .NET 4.0 installed. The Microsoft .NET 4.0 can be downloaded from Microsoft's website and then installed.

ESRI ArcGIS 10.1 Runtime Engine

New functionality within GeoAtlas related to georeferenced images and CAD files requires Esri ArcGIS 10 Engine with at least Service Pack 1 or EsriArcGIS10.1. ArcGIS can be installed by downloading the Discovery Third Party Installer. If the ArcGIS Engine is not installed this message box will appear but the setup will continue:



Microsoft DirectX 11 End-User Runtimes

Discovery 3D requires Microsoft's DirectX 11 June 2010 End-User Runtimes to work properly. The Discovery 3D application works only on Windows 7 (64-bit) or higher operating system. Discovery 3D is not installed unless the computer has Windows 7 64 or higher. Further Discovery 3D requires a DirectX 11 compatible display card. DirectX 11 June 2010 End-User Runtimes can be installed by downloading the Discovery Third Party Installer. If Discovery 3D is going to be installed but the DirectX 11 June 2010 End-User Runtimes are not installed then this message box will appear but the setup will continue:



Installation

Discovery utilizes Microsoft Windows ® Installer technology for installing the Discovery applications. Windows ® Installer technology provides powerful features for installation and component configuration, network installations (distribution\deployment) and software removal\uninstall.

Note: Have you read System Requirements?

This installation guide provides step-by-step instructions for End User or Network Administrator installations:

- End User Installation
 - Install Discovery Applications to a Single Workstation.
- Network Administrator Installation
 - Create LAM License Service Server for Multiple Workstations.
 - Install the Discovery Applications to Multiple Workstations.
 - Create a Discovery Project Server (optional).

End User Installation

This installation will add the Discovery Applications to a Single Workstation.

Caution:

General Installation Requirements

- please refer to the <u>System</u> <u>Requirements</u> for a complete list The following conditions must be met before you can install the Discovery 2014.2 software:

- You must have Administrative Rights to the local computer that will run the install.
- Must have Internet Explorer 6.0 or higher installed.
- Microsoft .NET 4.0 must be installed.
- Must have networking installed including the *TCP/IP* protocol.
- This software should only be installed on Windows® 7 or Windows® Server 2008 operating systems.

There are 8 or 10 installation steps depending upon whether you perform a typical or custom install:

- STEP 1 <u>Getting Started with the Discovery 2014.2 Release</u>
- STEP 2 InstallShield Wizard Startup
- STEP 3 <u>License Agreement</u>
- STEP 4 Customer Information
- STEP 5 Setup Type (Typical vs. Custom)
- Typical STEP 6 <u>Select Log Units of Measurement</u>
- Typical STEP 7 Ready to Install the Program
- Typical STEP 8 <u>InstallShield Wizard Completed</u>
- Custom STEP 6 Custom Setup
- Custom STEP 7 Local Projects Folder
- Custom STEP 8 Log Units of Measurement
- Custom STEP 9 Ready to Install the Program
- Typical STEP 10 InstallShield Wizard Completed

Note: LMKR licensing is now installed before or after the above Discovery master installation steps. When Discovery applications are started through the Desktop shortcuts or Start Menu Programs, a licensing check is performed on the workstation. Please refer to the Product Licensing topic for further details.

End User Installation STEP 1- Getting Started with LMKR Download or Release DVD

Before starting installation, make sure that all open applications are closed.

If you have downloaded Discovery 2014.2 from LMKR, go to the **Download** folder and double click on the **Discovery2014Setup.exe** file to begin. You will proceed directly to <u>STEP 2 - InstallShield Wizard Setup.</u>

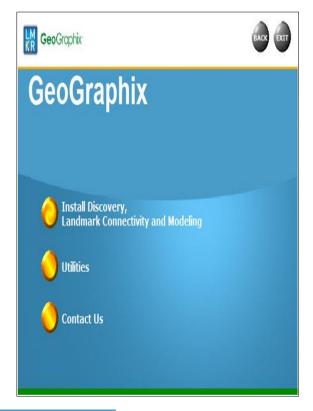
If you have ordered the Discovery 2014.2 DVD, continue through this step.

Insert the Discovery/Landmark Connectivity/Seismic Modeling DVD-ROM into the DVD-Drive.

The GeoGraphix splash screen appears for a few seconds.

Note: If the GeoGraphix splash screen does not appear automatically, go to the Start menu, and choose Run. In the Run dialog box, browse to the appropriate DVD-drive and select the Install.exe file. Click OK.

After the splash screen appears for a few seconds the GeoGraphix install window appears.



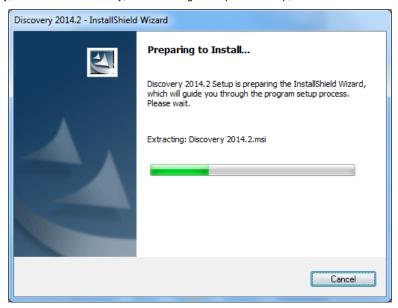
Click the first option,



to proceed to the next step in End User Installation.

End User Installation STEP 2 - InstallShield Wizard Startup

After clicking Install Discovery, Landmark Connectivity, and Modeling in the previous step, the InstallShield wizard is started.

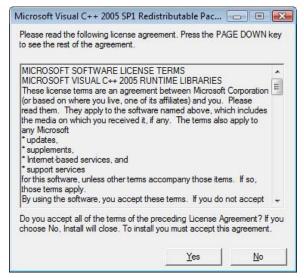


<u>Note</u>: Microsoft Visual C++ 2005 Redistributable -x86 8.050727.4053 and Microsoft Visual C++ 2008 Redistributable - x86 9.0.30729.4148 must be installed to use Discovery.

If Microsoft Visual C++ 2005 and Microsoft Visual C++ 2008 Redistributables have not been installed on your system, you will be prompted to install them.

Click the **Install** button to install the Microsoft Visual C++ Redistributables. The 2005 Redistributable (8.00.50727.4053) must be installed to use Discovery 2014.2. If the Redistributable has already been installed or will be installed later **No** can be selected and the setup will continue. Click **Yes** to install the 2005 Redistributable.

Click $\underline{Y}es$ to accept the Microsoft Visual C++ 2005 SP1 Redistributable Package License

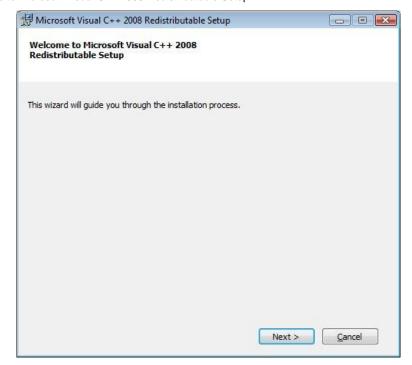


The 2005 Redistributable will install and finish.

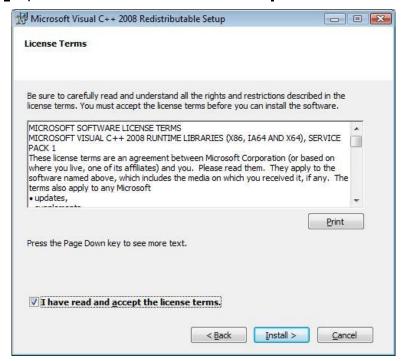


The 2008 Redistributable (9.0.30729.4148) must be installed to use Discovery 2014.2. If the Redistributable has already been installed or will be installed later $\underline{\mathbf{No}}$ can be selected and the setup will continue. Otherwise, click \mathbf{Yes} to install the 2008 Redistributable.

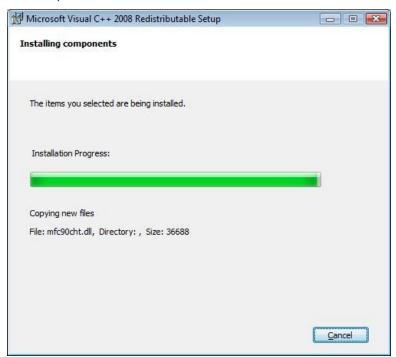
Click **Next** at the Welcome to Microsoft Visual C++ 2008 Redistributable Setup.



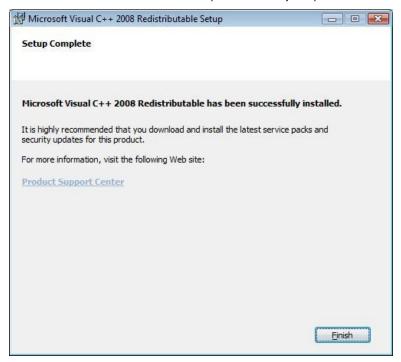
Select the I have read and accept the license terms. check box and then click the Install button.



The 2008 Redistributable will install components.



Click Finish to close the Microsoft Visual C++ 2008 Redistributable Setup. The Discovery setup will now continue.



The Welcome to the InstallShield Wizard for Discovery 2014.2 appears on your screen.

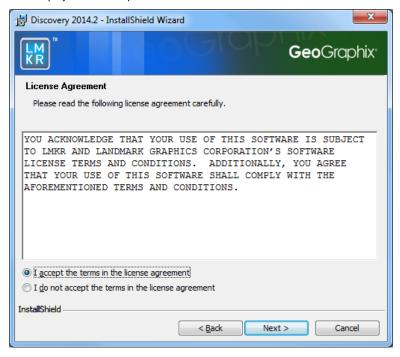


Click the Next button to proceed to License Agreement step of wizard.

Note: Clicking the Help button will open the Discovery Installation Guide help window (this documentation).

End User Installation STEP 3 - License Agreement

The software license agreement is displayed in this step of wizard.



Select the "I accept the terms in the license agreement" option.

Click **Next** to proceed to the Customer Information step of the wizard.

End User Installation STEP 4 - Customer Information

Customer Information appears in this step of the wizard.



Enter your **User Name** and **Company Name**.

Click **Next** to proceed to the **Setup Type** step of the wizard.

End User Installation STEP 5 - Setup Type (Typical vs. Custom)

The type of setup (Typical vs. Custom) and application destination folder is selected in this step of the wizard.



Typical option:	Choosing this option will install Discovery (Discovery, PRIZM, SeisVision and smartSECTION), and Modeling (LogM, STRUCT) to the application destination folder (Install To:). Note: You must use the Custom option if you will run TracPlanner Xpress and you do not have OpenWorks for Windows installed on your computer. If you have OpenWorks for Windows installed, you can use the Typical install option. Note: A local projects folder will be installed by default to: C:\ProgramData\Geographix\Projects (for Windows® 7) unless a previous local projects folder is detected by the install, then local projects folder will be installed to the previous detected path/folder.
Custom option:	Choosing this option then clicking Next will open a <u>Custom Setup</u> dialog box to choose features to be installed.
Install to:	This is the path/folder that will be used to install applications to on the computer. Note: If Discovery software has been installed on this computer before, then the "Install to:" will reflect the path/folder of the previous installed to, if not the default path is C:\Program Files (x86)\GeoGraphix. The Change command button can be used to change path/folder destination of application.
Change command button:	Clicking this command button will open a standard windows Browse/Open dialog box to change application destination folder. Note: Path/folder must be a local hard drive.

If Typical option is selected, click Next to proceed to the Select Log Units of Measurement step of wizard.

If Custom option is selected, click Next to proceed to the Custom Setup step of wizard.

Typical

End User Installation Typical STEP 6 - Select Log Units of Measurement

This step of wizard determines what default log units will be setup for PRIZM and XSection.



Note: The units can be changed in PRIZM and XSection after installation.

Click Next to proceed to the Ready to Install the Program step of the wizard.

End User Installation Typical STEP 7 - Ready to Install the Program

This is the second to last step of the wizard.



Click Install to copy files and begin installing the software or click Back to review and make any changes as necessary.

End User Installation Typical STEP 8 - InstallShield Wizard Completed (FINAL STEP)

After the Install is clicked in Ready to Install the Program step, files are installed to the workstation.



And when the installation is finished, the InstallShield Wizard Completed dialog box appears:



Click **Finish** to complete the install. The Discovery software can now be started through Desktop shortcuts or Start Menu Programs.

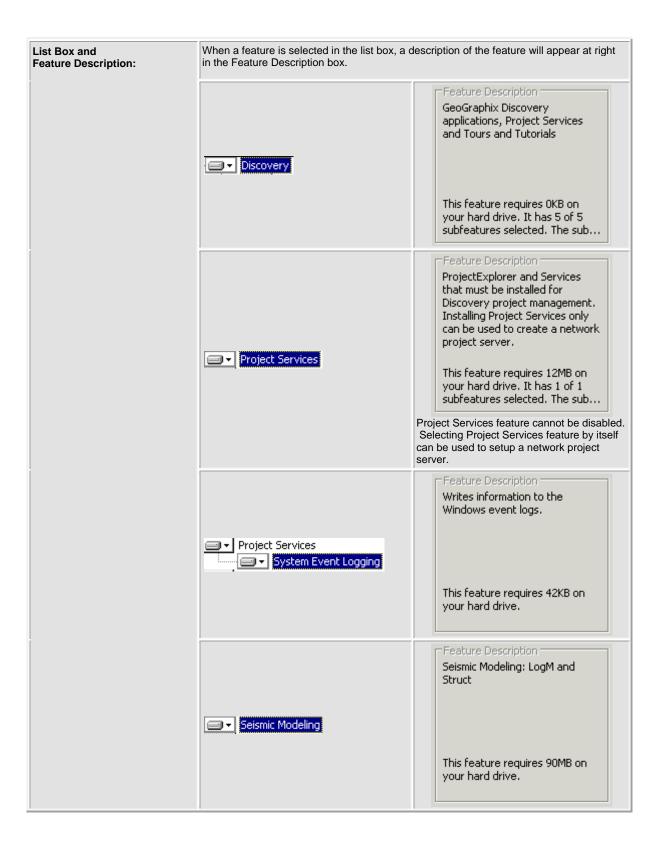
<u>Note</u>: LMKR licenses are now installed after the Discovery master installation steps. When the Discovery applications are started through Desktop shortcuts or Start Menu Programs, a licensing check is performed on the workstation. Please refer to the <u>LMKR</u> <u>License Management Tool</u> for further details.

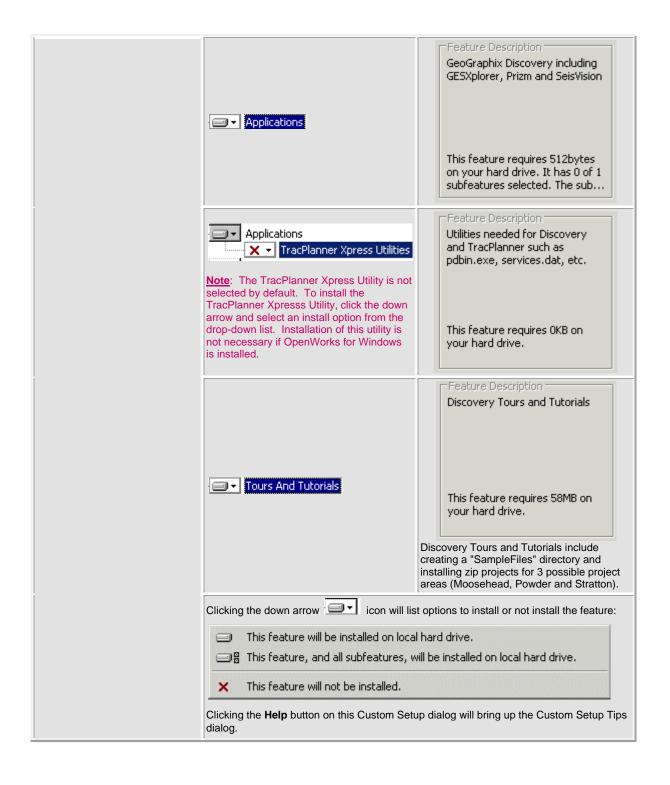
Custom

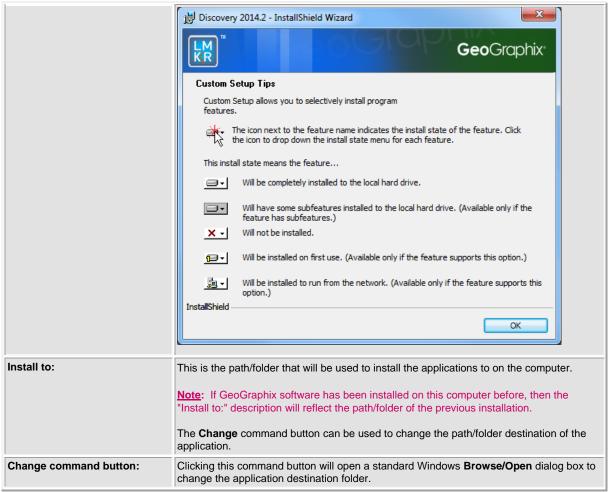
End User Installation Custom STEP 6 - Custom Setup

This step of the wizard can be used to select certain features to be installed and change the application destination directory.









Select features to be installed and click Next to proceed to the Local Projects Folder step of the wizard.

End User Installation Custom STEP 7 - Local Projects Folder

This step of the wizard determines where the local projects folder (path/folder) will be created during the installation.



Clicking the **Change** command button will open a standard Windows Browse/Open dialog box to change the application destination folder.

Note: Local Projects Path/Folder must be a local hard drive.

Click Next to proceed the Log Units of Measurement step of the wizard.

End User Installation Custom STEP 8 - Log Units of Measurement

This step of the wizard determines what default log units will be setup for PRIZM and XSection.



Note: The units can be changed in PRIZM and XSection after installation.

Select the appropriate Units option and click Next to proceed to the Ready to Install the Program step of the wizard.

End User Installation Custom STEP 9 - Ready to Install the Program

This is the second to last step of the wizard.



Click Install to copy files and begin installing the software or click Back to review and make any changes as necessary.

End User Installation Custom STEP 10 - InstallShield Wizard Completed (FINAL STEP)

After the Install is clicked in Ready to Install the Program step, files are installed to the workstation.



And when installation is finished, the InstallShield Wizard Completed dialog box appears:



Click Finish to exit the install.

The Discovery software can now be started through Desktop shortcuts or Start Menu Programs.

<u>Note</u>: LMKR licensing is now installed before or after the Discovery master installation steps. When the Discovery applications are started through Desktop shortcuts or Start Menu Programs, a licensing check is performed on the workstation. Please refer to the <u>LMKR License Management Tool</u> topic for further details.

Network Administrator Installation

There are several possible installation configurations and methods that could be used for deploying Discovery in a network environment. The best method for your particular situation depends upon the number of users and your network environment.

There are at least 3 important components to consider in any network environment:

- LMKR License Management Tool
- Workstation Installation
- Discovery Project Server (Optional)

Note: If you only have the download of the setup and not the DVD media you will need to use the Workstation Setup files located on the Discovery Utilities under Extras\Workstation files.

If you have any questions or issues with your particular network environment, please don't hesitate contacting <u>GeoGraphix</u> Technical Support.

Network License Server

The LMKR License Management Tool must be installed to use Discovery in a network environment. Download the tool from the LMKR Support Portal - Downloads page and follow the installation instructions.

After the server is set up, when the **License Management Tool** runs on the client computer, choose the **I want to setup or manage a network license server on this computer** option and input the required information.

For more information on the license wizard see the LMKR Licensing topic.

Workstation Installation

Network Administrator Installation

Caution: The following conditions must be met before you can install the Discovery 2014.2 software: General Installation O You must have Administrative Rights to the local computer that will run the Requirements Must have Internet Explorer 6.0 or higher installed. - please refer to the **System** Microsoft .NET 4.0 must be installed. 0 Requirements for a complete Must have networking installed including the TCP/IP protocol. list This software should only be installed on, Windows® 7, or Windows® Server 2008 operating systems.

The workstation installation in a network environment can be initiated from the Discovery 2014.2 download or directly from the Release DVD or by creating an Application Distribution site:

- Using LMKR download or Release DVD
- Using Application Distribution Site

Using LMKR Download or Release DVD

Workstation installations directly from the Discovery 2014.2 download or the Release DVD are quite acceptable if you don't mind configuring the installation at each workstation. The installation could be shared on a network drive or carried from workstation to workstation.

The installation procedure for workstation installations directly from LMKR or the release DVD is identical to the End User Installation.

Note: Licensing will need to be configured on each workstation. The configuration can be set with the LMKR License Management Tool.

Using Application Distribution Site

Workstation Installations with an Application Distribution Site can save considerable configuration time at the workstation and can even be automated to create unattended, silent installations for the workstation.

There are 6 steps involved with performing Workstation Installations using an Application Distribution Site:

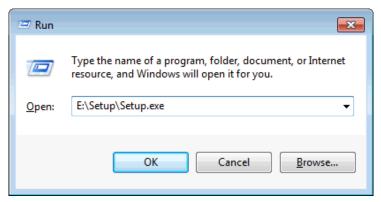
- STEP 1: Administrative Install Start >> Run
- STEP 2: Administrative Install InstallShield Wizard Startup
- STEP 3: <u>Administrative Install Network Location</u>
- STEP 4: <u>Administrative Install InstallShield Wizard Completed</u>
- STEP 5: Configure Application Distribution Site
- STEP 6: Install to Workstations

Create Application Distribution Site STEP 1 - Administrative Install - Start >> Run

An administrative install is generally started with a Run "setup.exe" command containing the "/a" parameter.

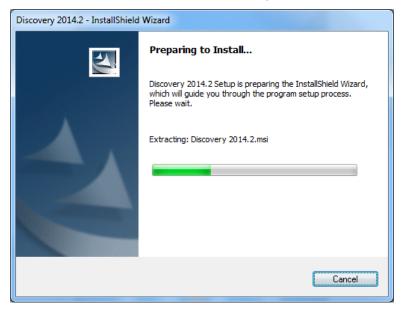
A Run command can be configured in the standard Windows Run dialog box. This dialog box can be accessed from the Windows Taskbar **Start** menu and **Start** >> **Run**.

If the Discovery 2014.2 DVD is in a DVD-Drive with assigned drive letter of "E" then the command line would be like the following in the Run dialog box:

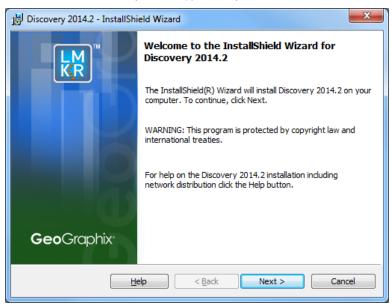


Create Application Distribution Site STEP 2 - Administrative Install - InstallShield Wizard Startup

After configuring the Run command in STEP 1 - Administrative Install - Start >> Run, the InstallShield wizard is started.



And the Welcome to the InstallShield Wizard for Discovery 2014.2 appears on your screen.



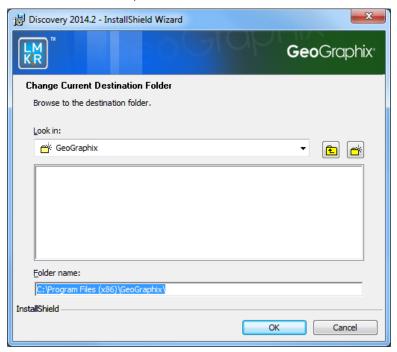
Click **Next** to proceed to the Network Location step of the wizard.

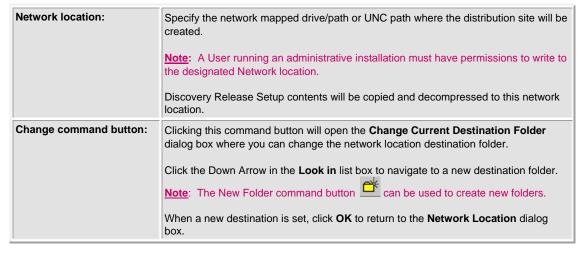
Note: Clicking the Help button will open the Discovery Installation Guide help window (this documentation).

Create Application Distribution Site STEP 3 - Administrative Install - Network Location

This step of the wizard determines where the distribution site will be created on the network.

In this particular example, a network server share of "Apps on CorpServer1" is mapped to the "X" drive. The Application Distribution Site will be created in a folder and subfolder called GGraphix\Distrib.





Click Install to copy files and create network distribution site.

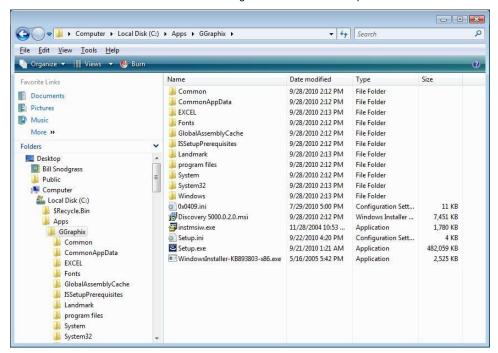
Create Application Distribution Site STEP 4 - Administrative Install - InstallShield Wizard Completed

After Install is clicked in the Network Location step, installation files are decompressed and copied to the network location that was designated in STEP 3 - Administrative Install - Network Location.

And when the installation is finished, the InstallShield Wizard Completed dialog box appears:



The Network Application Distribution Site should contain the following folders and files at this point:



In the next step, the application distribution site's setup.ini will be configured for distribution to the workstations.

<u>Note</u>: Running the setup.exe in the application distribution site could be used at a workstation to install Discovery software but configuring the setup.ini can save time and even be automated to create an unattended, silent installation for the workstations.

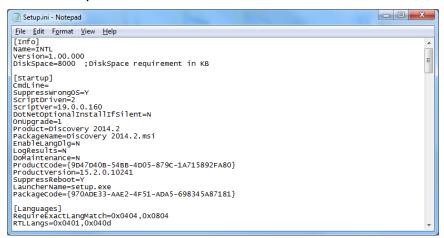
Create Application Distribution Site STEP 5 - Configure Application Distribution Site

After all the necessary files have been copied and decompressed to the Application Distribution Site with the Administrative Install in the previous steps, the Application Distribution site needs to be configured for your particular network environment.

Note: If you only have the download of the setup and not the DVD media you will need to use the Workstation Setup files located on the Discovery Utilities under Extras\Workstation files.

This involves editing some of the existing command variables (e.g. User Name, Company Name, etc.) or adding commands along with variables to the "Setup.ini" file on the Application Distribution Site.

Look for the [Startup] section in the "Setup.ini":



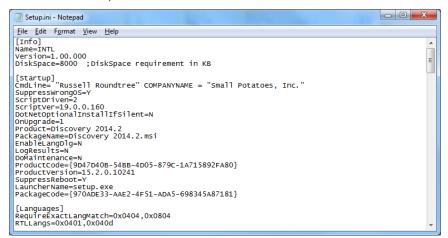
The following table lists some commands and variables that may be used on the CmdLine in the "Setup.ini":

Command	Variable (quotes required where shown)	Description
USERNAME	"Text string"	The variable value within quotes will be used for the User Name field in the Customer Information dialog.
COMPANYNA ME	"Text string"	The variable value within quotes will be used for the Organization field in Customer Information dialog.
ADDLOCAL (This command can be used to install specific Discovery applications. It is very similar to choosing specific features in a custom install. If this command is not used then a typical install is run.)	"Apps,ClientDrivers60,DataDirect60,Discovery,GeoGraphixDiscovery,LeadTools,Modules, ProjectServer,Providers,Services,SystemCore,WindowsSystemFiles,AOLibCopier,DataCore, DepthRegistration2,Discovery3D,EventLogging,GES,HelpCore,LandmarkConnectivity, MapObjects.Common,MapObjects.Release,Modeling,Prizm,ProjectDatabaseRebuilder, Projects,SeisVision,smartSECTION,SQLAnywhere12,ThirdParty.Common,ThirdParty.Release, Tools,ToursAndTutorials,TracPlannerUtilities,WellXchange,WindowsSystemCore,WPFToolkit"	This variable value would install all the necessary features for Discovery only.

	Note: This command is on one line with no spaces.	
ALLUSERS	1	If the ADDLOCAL command is used then the ALLUSERS command must also be used. The ALLUSERS command enables the installation of GeoGraphix services.
PROJECTS	"Local Drive:\Folder"	This must be a local hard drive. This command can be used to designate a local projects folder which is essentially step 7 of custom end user installation. Note: If this command
		is not used, a projects folder will be installed by default to C:\Documents and Settings\All Users\Application Data\GeoGraphix\Projects unless a previous local projects folder is detected by the install then local projects folder will be installed to previous detected path\folder.
UNITS	"English" OR	This command can be used to make selections normally made in step 8 of
	"Metric"	custom end user installation.
	OR	
	"CnMetric"	
/q, /qn	Not applicable	No UI seen during installation.
/qb	Not applicable	Basic UI seen during installation. qb! can be used to hide Cancel button.
/qr	Not applicable	Reduced UI seen during installation. No modal dialog box displayed at the end of installation.
/qf	Not applicable	Full UI seen during installation.
/qn+	Not applicable	No UI seen during installation except for a model dialog box.

		displayed at the end of installation.
/qb+	Not applicable	Basic UI with a modal dialog box seen at end of installation. qb+! or qb!+ can be used to hide Cancel button.
/qb	Not applicable	Basic UI with no modal dialog boxes seen during installation.

After removing comment sign (";") and editing or adding variables in CmdLine, your "Setup.ini" CmdLine may look similar to the following example (other commands can exist):



Note: Only a small portion of the "Setup.ini" is displayed above.

Using Application Distribution Site - STEP 6 - Install to Workstations (FINAL STEP)

After the application distribution site is configured for your network environment, Discovery applications can now be deployed to the workstations.

You can deploy Discovery applications to the workstations by sharing application distribution site to workstations and running "setup.exe" in the application distribution site (similar to End User Installation).

<u>OR</u>

You may want to utilize scripts or 3rd party tools such as Microsoft ® SMS or InstallShield ® AdminStudio that take advantage of Microsoft ® Windows Installer technology for workstation deployment.

This is the last step in a Workstation Installation using an Application Distribution Site.

Discovery Project Server (Optional)

Creating a *Discovery* Project Server is an optional third component in a network administrator installation. It is a very important consideration if you want to store Discovery projects on a central server, then share those projects across the network for multiple users.

Note: A Workstation Installation will create local projects folder on every workstation with GeoGraphix *Discovery* installed so all workstations can create and store projects on their local hard drive. Local projects can also be shared between users on the network if the project properties in ProjectExplorer are set to network access. Please refer to the ProjectExplorer Help files for more information on local projects versus network projects.

A Discovery Project Server can be created with a custom installation using the Discovery 2014.2 download or Release DVD.

Note: This installation must be performed on the server that will become the *Discovery* Project Server. This server must have access to the <u>LMKR License Management Tool</u> (this server may also be the Llcense Server).

There are 10 steps involved with creating a Discovery Project Server:

- STEP 1 Getting Started with The Discovery download or Release DVD
- STEP 2 InstallShield Wizard Startup
- STEP 3 License Agreement
- STEP 4 <u>Customer Information</u>
- STEP 5 Setup Type (Typical vs. Custom)
- STEP 6 Custom Setup
- STEP 7 Local Projects Folder
- STEP 8 Log Units of Measurement
- STEP 9 Ready to Install the Program
- STEP 10 <u>InstallShield Wizard Completed</u>

Discovery Project Server - STEP 1 - Getting Started with the Discovery Download or Release DVD

Before starting the installation, make sure that all open applications are closed.

If you have downloaded Discovery 2014.2, go to the **download** folder and double click on the **Discovery2014.2Setup.exe** file to begin. You will proceed directly to <u>STEP 2 - InstallShield Wizard Setup</u>.

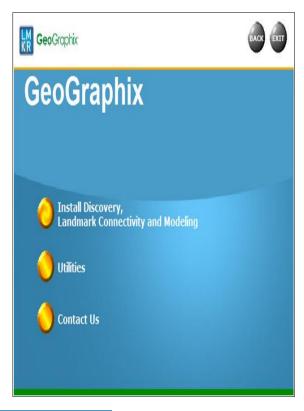
If you have ordered the Discovery 2014.2 DVD, continue through this step.

Insert the Discovery/Landmark Connectivity/Seismic Modeling DVD-ROM into the DVD-Drive.

The GeoGraphix splash screen appears for a few seconds.

Note: If the GeoGraphix splash screen does not appear automatically, go to the Start menu, and choose Run. In the Run dialog box, browse to the appropriate DVD-ROM drive and select the Install.exe file. Click OK.

After the Splash Screen appears for a few seconds the GeoGraphix install window appears.



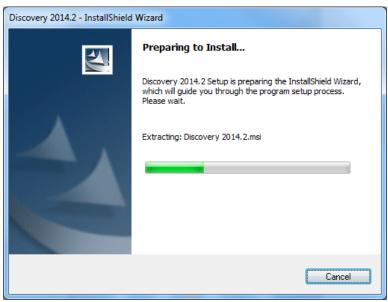
Click the first option, Installation.



to proceed to the next step in the Discovery Project Server $\,$

Discovery Project Server - STEP 2 - InstallShield Wizard Startup

After clicking Install Discovery, Landmark Connectivity, and Modeling in the previous step, the InstallShield wizard is started.



And the Welcome to the InstallShield Wizard for Discovery 2014.2 appears on your screen.



Click the Next button to proceed to the License Agreement step of the wizard.

Note: Clicking the Help button will open the Discovery Installation Guide help window (this documentation).

Discovery Project Server - STEP 3 - License Agreement

The software license agreement is displayed in this step of wizard.



Select the "I accept the terms in the license agreement" option.

Click Next to proceed to the Customer Information step of the wizard.

Discovery Project Server - STEP 4 - Customer Information

Customer Information appears in this step of the wizard.



Enter your User Name and Company Name.

Click Next to proceed to the Setup Type step of the wizard.

Discovery Project Server - STEP 5 - Setup Type (Typical vs. Custom)

The type of setup (Typical vs. Custom) and application destination folder is selected in this step of the wizard.



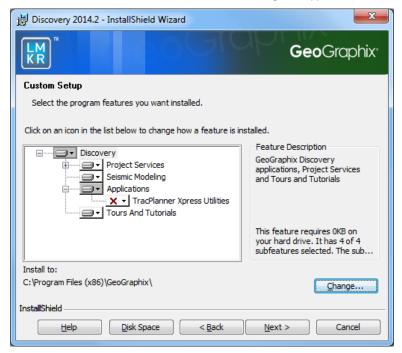
Typical option:	Choosing this option will install Discovery (GESXplorer, PRIZM, SeisVision) to the application destination folder (Install To:). Note: A local projects folder will be installed by default to: C:\ProgramData\GeoGraphix\Projects (for Windows® 7) unless a previous local projects folder is detected by the install then local projects folder will be installed to the previous detected path\folder.
Custom option:	Choosing this option then clicking Next will open a <u>Custom Setup</u> dialog box to choose features to be installed.
Install to:	This is the path/folder that will be used to install applications to on the computer. The Change command button can be used to change path/folder destination of the application.
Change command button:	Clicking this command button will open a standard Windows Browse/Open dialog box to change the application destination folder. Note: Path/folder must be a local hard drive.

To create a Discovery Project Server, select Custom option and click Next to proceed to the Custom Setup step of the wizard.

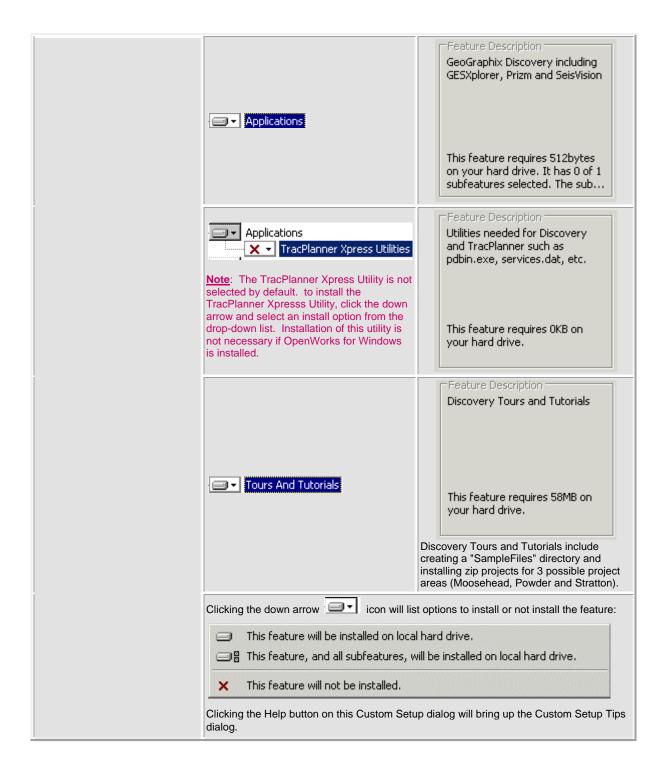
<u>Note</u>: A Discovery Project Server can be created by using the Typical setup type and installing all the Discovery applications but a Custom setup type may be preferred because install options can be customized.

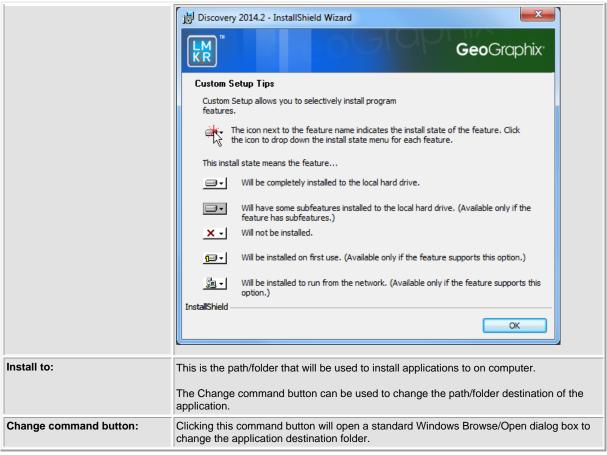
Discovery Project Server - STEP 6 - Custom Setup

This step of the wizard can be used to select certain features to be installed and change the application destination directory.

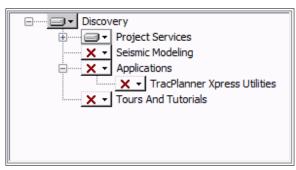


List Box and When a feature is selected in list box, a description of the feature will appear at right in **Feature Description:** the Feature Description box. Feature Description GeoGraphix Discovery applications, Project Services and Tours and Tutorials ■ ▼ Discovery This feature requires OKB on your hard drive. It has 5 of 5 subfeatures selected. The sub... Feature Description ProjectExplorer and Services that must be installed for Discovery project management. Installing Project Services only can be used to create a network project server. ■ ▼ Project Services This feature requires 12MB on your hard drive. It has 1 of 1 subfeatures selected. The sub... Project Services feature cannot be disabled. Selecting Project Services feature by itself can be used to setup a network project server. Feature Description -Writes information to the Windows event logs. ■ ▼ Project Services ■ ▼ System Event Logging This feature requires 42KB on your hard drive. Feature Description -Seismic Modeling: LogM and Struct Seismic Modeling This feature requires 90MB on your hard drive.





Select Project Services as the only feature to be installed (disable all other features):



Click **Next** to proceed to the Local Projects Folder step of the wizard.

Discovery Project Server - STEP 7 - Local Projects Folder

This step of the wizard determines where the local projects folder (path/folder) will be created during the installation.



Clicking the **Change** command button will open a **Change Current Destination Folder** dialog box where you can change the application destination folder.

Note: Local Projects Path\Folder must be a local hard drive.

After installation is complete (as text in dialog box indicates), projects on Discovery Project Server can be organized in Homes using ProjectExplorer >> File >> New >> Home. More information regarding network projects can be found in the ProjectExplorer Help files.

Click Next to proceed to the Log Units of Measurement step of the wizard.

Discovery Project Server - STEP 8 - Log Units of Measurement

This step of the wizard determines what default log units will be setup for PRIZM and XSection.



Note: The units can be changed in PRIZM and XSection after installation.

Select the appropriate Units option and click Next to proceed to the Ready to Install the Program step of the wizard.

Discovery Project Server - STEP 9 - Ready to Install the Program

This is the second to last step of the wizard.



Click Install to copy files and begin installing the Discovery software or click Back to review and make any changes as necessary.

Discovery Project Server - STEP 10 - InstallShield Wizard Completed (FINAL STEP)

After the Install is clicked in the Ready to Install the Program step, files are installed to the workstation.



And when the installation is finished, the InstallShield Wizard Completed dialog box appears:



Discovery can now be started through the desktop shortcuts or start menu.

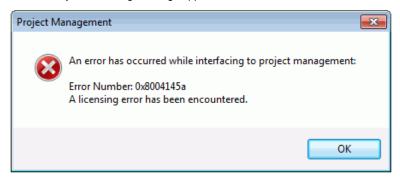
<u>Note</u>: The Discovery Project Server must now be configured to connect to LMKR Licensing Management Tool. When the Discovery application is started through desktop shortcuts or start menu, a licensing check is performed on computer. Please refer to <u>LMKR</u> <u>Licensing Management Tool</u> for further details.

This is the final step in creating a Discovery Project Server. If necessary, other components in a Network Administrator Installation (e.g. Workstation Installations) may now be installed.

LMKR Licensing

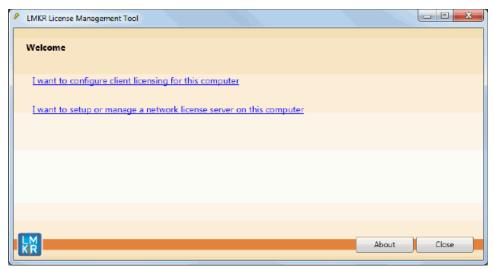
LMKR License Management Tool

If no license file is configured for Discovery the following message appears:



All of the licensing of Discovery products is configured using this tool. Use this tool to set a license for a single computer or to set up a network license on a server.

Once the LMKR License Management Tool is accessed, launch it by selecting **Start >> All Programs >> LMKR >> Licensing >> License Management Tool**.

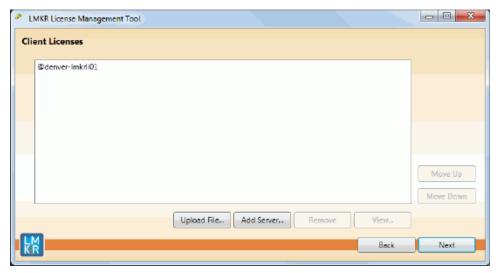


You can access a <u>client license</u> for a computer by clicking the **I want to configure client licensing for this computer** command on the Welcome Page.

You can set up a <u>network license</u> by clicking the **I want to setup or manage a network license server on this computer** command on the Welcome Page.

Client License

Setup a client License by clicking the I want to configure client licensing for this computer on the <u>Welcome page</u> of the LMKR License Management Tool.



Use this page to select a client license for install from your local computer or from a server. Use the buttons at the bottom and right hand side of the window to add servers to the list remove servers from the list or move the servers up or down the list. The LMKR License Management Tool will look for license files on each server in order from top to bottom.

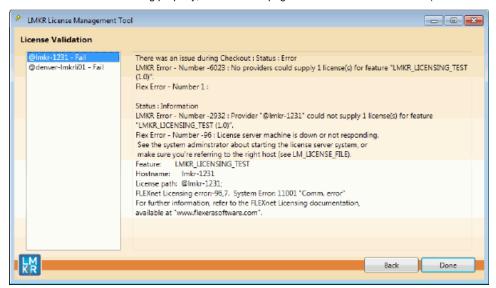
Click the Upload File button to begin the search for a license file locally

Click the Add Server button to point to a client license on a server.

If you want to select a license file from a specific server, highlight that server in the list and click the Upload File button.

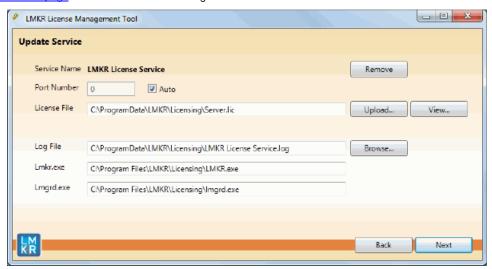
Click the **Next** button to view the validation of the license.

When license has been configured properly the **License Validation** page will confirm that the license Passed. If the license is not valid or if the network connection is not functioning properly, the validation page will list the license as Failed (as shown below).



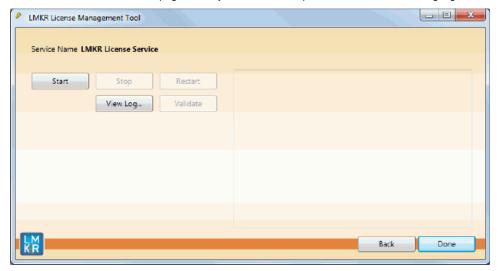
Network License

You can configure a Network license by clicking the I want to setup or manage a network license server on this computer command on the Welcome page of the LMKR License Management Tool.



The **Update Service** page will appear showing the location of the license server. This page lists the location of where a license server is installed on the local computer.

Click the Next button to access the Service Name page where you can Start, Stop, validate or view the debug log



Landmark Connectivity Installation

Installing Landmark Connectivity will install the following Discovery applications\features:

- WellXchange
- GridXchange
- SeisXchange

Landmark Connectivity will be installed by default with the Discovery <u>Typical</u> setup type installation or can be custom installed by selecting the Landmark Connectivity feature in the Discovery <u>Custom</u> setup type of the installation.

Caution:

Note: To run Seisxchange, and GridXchange, <u>Landmark OpenWorks for Windows</u> 5000.8.3.01 and its associated software components must also be installed.

In addition, if you are utilizing SeisXchange, an NFS application such as Hummingbird ® NFS Maestro must also be installed and the configuration of several components to access SeisWorks will be necessary. (does not apply to WellXchange-OpenWorks Connect or GridXchange).

Please refer to <u>Preparing the SeisXchange Environment</u> for further information if you will be utilizing SeisXchange and SeisVision on OpenWorks.

Go to: OpenWorks for Windows

Go to: Preparing the SeisXchange Environment

Return to: Installation

OpenWorks for Windows 5000.8.3.01

Note: Discovery on OpenWorks projects, GridXchange, and SeisXchange require OpenWorks for Windows.

Please refer to the OpenWorks Installation Procedures in Landmark OpenBooks 5000.0.2.0 for detailed, step-by-step instructions for installing OpenWorks for Windows.

The Landmark OpenBooks 5000.0.2.0 will discuss installing all the software components associated with OpenWorks for Windows:

Note: The OpenWorks full install requires Hummingbird Exceed. The Oracle client installation in use with OpenWorks Full requires that the "Administrator" option be selected. The "Administrator" option type includes the SQL Plus, the Oracle Database Utilities, and other components necessary to run Discovery on OpenWorks

Note: Hummingbird exceed is not required for the OpenWorks Basic install. If Openworks Basic installation is used, the Oracle client installation can use the "Administrator" option, which will include all of the needed components. Or, the Oracle client installation for the OpenWorks Basic installation can use the "Custom" installation type. However, with this install type the following components must be installed:

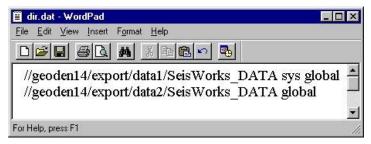
- Oracle Database Utilities 10.2.0.1.0, or Oracle client 11.2.0.2
- SQL *Plus 10.2.0.1.0, or Oracle client 11.2.0.2
- Oracle JDBC/THIN Interfaces 10.2.0.1.0, or Oracle client 11.2.0.2
- Oracle Net 10.2.0.1.0, or Oracle client 11.2.0.2

After these Oracle components are installed, run the upgrade patch to Oracle 10g 10.2.0.4 (32 bit).

Preparing the SeisXchange Environment

Once OpenWorks for Windows along with Discovery are in place, the installation and configuration of an NFS application along with configuration of the dir.dat file to access SeisWorks will be necessary if SeisXchange or SeisVision on OpenWorks will be utilized:

- 1. Install and configure NFS application as necessary.
- 2. Export the required UNIX ® /LINUX ® SeisWorks file systems for NFS.
- 3. Verify that all the required NFS daemons are running on the UNIX ® /LINUX ® computer.
- 4. Configure Windows ® environment variable OW_CONF_DIR which defaults to \$OWHOME/conf, where ithe district.dat file is located, which will point to the location of the dir.dat file associated with the district.
- 5. Configure dir.dat (example shown below) to find exported SeisWorks files systems.



Utilities

You can install Discovery 2014.2 Utilities from the download of the Discovery 2014.2 Software from the **LMKR Support Portal - Downloads** page or from the Discovery 2014.2 Release DVD.

If you have downloaded Discovery 2014.2 from LMKR, See the **GeoGraphix Discovery 2014.2 Utilities Read Me** to install the Utilities. Click on the **Install Guide** button to open the **GeoGraphix Discovery 2014.2 Utilities Read Me** file.

If you have downloaded Discovery 2014.2 from LMKR, go to the **download folder** (for XP 64 bit Operating Systems), or the folder you specified to save the Utilities folder during the download, and double click on the specific Utility executable file to begin.

If you have ordered the Discovery 2014.2 DVD, continue through this step.

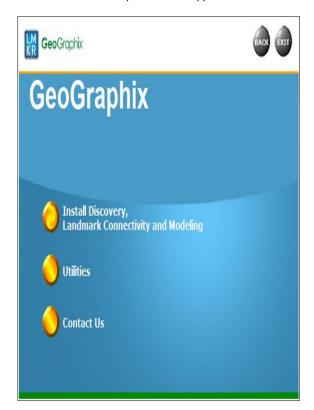
Insert the Discovery/Landmark Connectivity/Seismic Modeling DVD-ROM into the DVD-Drive.

If you have ordered the Discovery 2014.2 DVD, Insert the Discovery/Landmark Connectivity/Seismic Modeling DVD-ROM into the DVD-Drive.

The GeoGraphix splash screen appears for a few seconds.

<u>Note</u>: If the GeoGraphix splash screen does not appear automatically, go to the Start menu, and choose Run. In the Run dialog box, browse to the appropriate DVD-ROM drive and select the Install.exe file. Click OK.

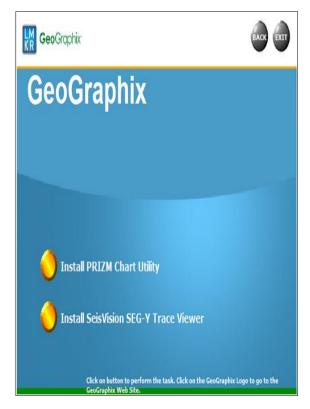
After the Splash Screen appears for a few seconds and install option window appears.





Click the second option

The Utilities screen appears.



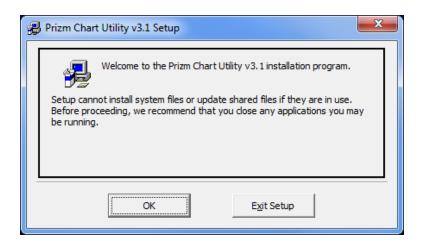
There are two utilities available on the Utilities screen:

- Install PRIZM Chart Utility
- Install SeisVision SEG-Y Trace Viewer

Utilities - Install PRIZM Chart Utility

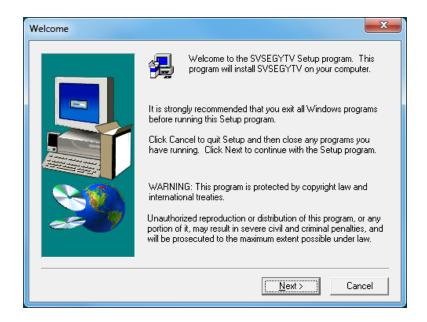
If you have downloaded the Discovery 2014.2 Utilities and used the default settings the PRIZM Chart Utility folder will be in the C:\Program Files (x86)\GeoGraphix\Utilities folder (for a typical download on Windows® XP 64 bit operating systems). If you have not used the default settings during the download, navigate to the folder specified for saving the Utilities. Clicking Setup.exe in the Prizm Chart Utility folder will open the Prizm Chart Utility dialog box.

If you have the Discovery 2014.2 DVD, insert the DVD into the DVD drive and select the Utilities screen of the Discovery install screen or the release DVD to launch the PRIZM Chart Utility Setup program.



Utilities - Install SeisVision SEG-Y Trace Viewer

If you have the Discovery 2014.2 DVD, insert the DVD into the DVD drive and select the Utilities screen of the Discovery install screen or the release DVD to launch the SeisVision SEG-Y Trace Viewer Setup program.



Uninstalling Discovery 2014.2 in Windows 7

Similar to uninstalling other Windows ® applications, Discovery 2014.2 can be removed from a computer using Add/Remove Programs in Control Panel.

There are 3 simple steps to removing Discovery 2014.2 on a Windows ® 7 computer:

Note: All Discovery applications should be closed or exited before completing the following steps.

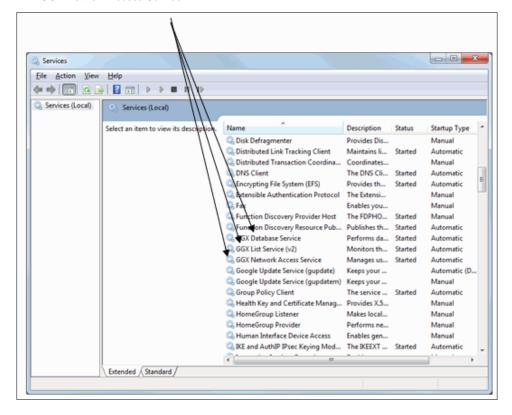
- STEP 1 Stopping GeoGraphix Services in Control Panel Services
- STEP 2 Getting Started with Add/Remove Programs in Control Panel
- STEP 3 Removing Discovery Software

STEP 1 - Stopping GeoGraphix Services in Control Panel Services

From Windows ® 7 Taskbar, use Start >> Control Panel >> Administrative Tools >> Services to open the Services applet window

There are three GeoGraphix Services that should be stopped before removing GeoGraphix software:

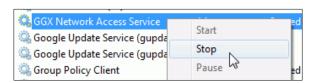
- GGX Database Service
- GGX List Service (v2)
- GGX Network Access Service



If a Service is not stopped, highlight the Service then right-click and choose **Stop** to stop the Service. All 3 Services should be stopped:





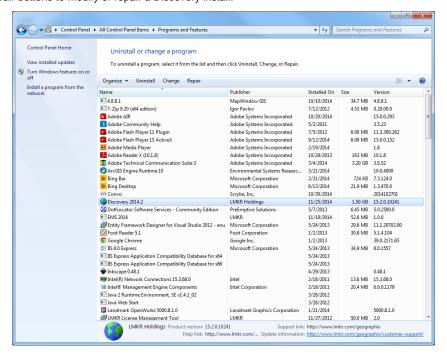


<u>Note</u>: It is recommended that the above GeoGraphix Services are stopped before removing Discovery software but if the Services are not stopped, the Discovery Uninstall program will stop Services during the uninstall/removal process.

STEP 2 - Getting Started with Programs and Features in Control Panel

To start uninstall/removal of Discovery software, open the Programs and Features applet using **Start >> Control Panel >> Programs and Features**.

In the Programs and Features window, **highlight** Discovery 2014.2. Right-click and select Uninstall to remove Discovery or select the Change or Repair buttons to modify or repair a Discovery install.

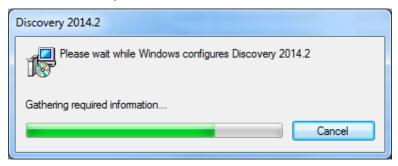


<u>Note</u>: The Change button can be used to modify or repair Discovery installations. Modify can be used to add or remove specific Discovery features. Repair will re-install the Discovery software repairing any files or registry entries that may be missing or damaged.

Click the **Remove** button to proceed to the next step of removing/uninstalling Discovery software.

STEP 3 - Removing Discovery Software (FINAL STEP)

After highlighting Discovery 2014.2 and clicking the Uninstall command in the Programs and Features window a progress bar will appear and Discovery will be removed from the computer.



Note: Some data and project file directories may be left on the hard drive. These directories are typically the following (may be different if software was installed without default directory locations):

- C:\Documents and Settings\All Users\Application Data\GeoGraphix
- C:\Program Files\GeoGraphix

This is the last step in uninstalling/removing Discovery software from your computer.



Contacting Technical Support

If you have questions or issues that cannot be answered by the LMKR Help Systems, you can contact LMKR Customer Support via web: support@lmkr.com or telephone at our various worldwide office locations:

The Americas	Europe, Middle East & Africa
8am-6pm CST *Excluding bank holidays [Monday – Friday] Toll Free (US/Canada): + 1 855 GGX LMKR Colombia: + 57 1381 4908 United States: + 1 303 295 0020 Canada: + 1 587 233 4004	UAE (Dubai GMT+4): 8am - 5pm [Sunday – Thursday] *Excluding bank holidays + 971 4 3727 999 UK: 8am - 5pm [Monday - Friday] *Excluding bank holidays + 44 20 3608 8042 Egypt: [Sunday – Thursday] *Excluding bank holidays + 0800 000 0635
Asia Pacific & Australian Continent	Southwest Asian countries
Malaysia (Kuala Lumpur GMT+8): 9am - 6pm [Monday – Friday] *Excluding bank holidays +60 32 300 8777	Pakistan (Islamabad GMT+5): 9am - 6pm [Monday – Friday] *Excluding bank holidays + 92 51 209 7400

Helpful Internet Links

Name	Website Address
LMKR home page	http://www.lmkr.com
LMKR Support Portal	http://support.lmkr.com
Landmark Support Portal	http://css.lgc.com/InfoCenter/index?page=home
Landmark Software and Services home page	http://halliburton.com/landmark
SyBase home page	http://www.sybase.com
Microsoft SQL Server home page	http://www.microsoft.com/sqlserver
Oracle home page	http://www.oracle.com

61