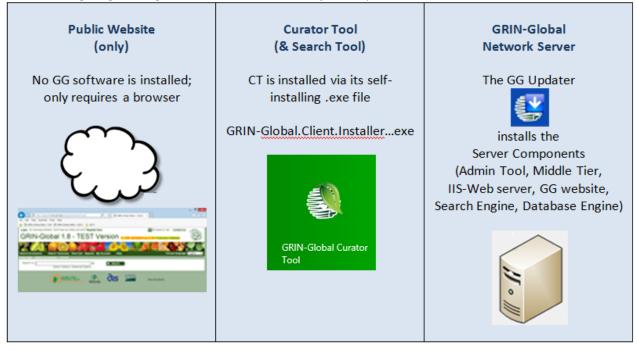
GRIN-Global Installation Guide



Revision Date July 29, 2016

This guide contains an overview and step-by-step directions for installing all of the GRIN-Global components. For most organizations, this guide was intended for the technical person charged with installing the GG database on a server and administering GRIN-Global. However, in some organizations, it may be that the GG administrator and primary GG user are one and the same!

The following diagram segments the GRIN-Global major components:



Situation/Environment	GG Program	What is Needed
Users ordering germplasm and searching the taxonomic data	Public Website	Browser; URL for the organization's GG server
Genebank staff entering and updating GG data	Curator Tool	During the CT installation, SQL Express, .NET, and Crystal Reports Viewer are installed (if not already)

Situation/Environment	GG Program	What is Needed
Organizational GG Server	Database & Server components (Admin Tool; IIS-Web Server; GG Web Application (Public Website); database engine (such as MS SQL Server)	GG "Updater" for the Admin Tool; Depending on the Operating System and the DB Version, some installation steps must be done manually

If you are only installing the Curator Tool on a PC which will be connecting to an organization's GG database server, you do not need this document –please refer to the online <u>Curator Tool Installation</u> <u>Guide</u>.

Notes on the GG Updater

Note

The GRIN-Global application suite requires an underlying database management system such as Microsoft's SQL Server. Currently, the only database system for which a complete set of GG dataviews has been written is SQL Server. (Besides Microsoft's SQ Server, GG was designed to run under various engines such as MySQL, PostgreSQL, and Oracle.)

Originally the installation of the GG server components and the application tool (the Curator Tool (CT)) were handled via the **GG Updater** program. This is no longer the case. Beginning with version 1.9.2, the CT uses InstallShield as its installer. However, the Updater still displays a section for "Client Updates" which is no longer relevant.

Furthermore, the Updater has *not been* modified to handle the currently available database systems. Therefore, the current GRIN-Global installer does not automatically install the GRIN-Global Database or Web Application ("public website") components into Windows 10 or SQL Server 2014.

If you will be using SQL Server 2008, this document applies in its entirety. If you will be installing GG on a later version, then refer to the <u>GG Installing Server Components</u> document.

If you will be using SQL Server 2008R2, this document applies in its entirety. If you will be installing GG on a later version, then refer to this document for the details for installing the GG Admin Tool only.

Note

This documentation details how to download and install the GG Updater and also covers the process for installing a new GG database. The GG Updater is the first GG program to be installed.

Currently the Updater only installs a **new** *GG database – it does not update an existing GRIN-Global database. If you have data in a test GG database, you will need to save that data and run a series of SQL scripts to populate your new GG database.*

The installation instructions covered by this document include the installation of the GG Updater program. If you already have installed the Updater, you do not need to reinstall it; also it does not matter what version you have installed. (If prompted to update the Updater to a newer version, you can skip that step.)

Curator Tool Installation

For user PCs connecting to a remote network server, you do not need to install the server applications that are explained within these pages. Instead, refer to the online Curator Tool Installation Guide. NPGS Users: You only need to install the Curator Tool on your PC and do not need to continue reading this document.

Comments/Suggestions:

Please contact <u>feedback@ars-grin.gov</u> with any suggestions or questions related to this document.

Changes in this Document

– May 6, 2016

 completely revamped this document to be compatible with a new guide for installing server components

– March 29, 2016

• updated directions with distribution server location

- December 9, 2015

• fixed minor typo;

- September 1, 2015

• included shortcut notes ("Jump...") on the cover page

– August 24, 2015

• extensive editing to differentiate the separate server and client installations

– April 30, 2015

• minor editing to highlight latest server location

– November 13, 2014

• added additional warnings about the Updater overlays any existing GG database

- August 28, 2014

• removed all references to using the Updater to update the Curator Tool

- August 12, 2014

 Added text to clarify the installation of the Curator Tool – it is no longer installed via the GG Updater program (beginning with CT 1.9.2)

- December 6, 2013

- Added new Updater screen images to reflect the current server address used by the Updater
- Updated wording pertaining to the Updater and Components Installation

– November 1, 2013

• Modified the directions to includes notes for the current server

- October 25, 2012

 Modified the directions for "Handling Users Who Do Not Have Windows Administrator Privileges"

- September 27, 2011

• Added directions on using Ctrl + Shift when downloading

- August 26, 2011

- Edited the text in the introduction to the Web Application
- Included section on installing the data tier on a remote server "Installing GRIN-Global on a Non-Windows Server"

– July 28, 2011

- Edited references to the Search Engine (beginning with v 0.9, the Search Engine is not a separate server component)
- Provided additional details to explain the differences between installations on a server and on a single user PC
- Section added pertaining to organizational firewalls and the GRIN-Global installation

Table of Contents

Changes in this Document	4
Components of GRIN-Global	7
Deciding When to Use GRIN-Global Updater and What Components to Install	7
General Requirements When Installing the Database on the User's PC "a localhost"	9
Prerequisites When the GRIN-Global Database and Admin Tool is Installed	0
Updater Program1	.1
Step-by-Step Installation Directions1	.1
Determining if Your GRIN-Global Software Components are Current	.8
Server Components: Installing (or Updating)2	.1
Default and Custom Installation Options2	2
General Requirements – Installing Microsoft Applications2	.3
Server 2012	.3
Database: Installing (or Updating)2	.4
Step-by-Step Directions	.4
Notes on Selecting a Database2	5
MS SQL Server (Installing)2	6
Database Setup Wizard2	9
Admin & the Web Application: Installing (or Updating)	2
Curator Tool: Installing (or Updating)	3
Starting the Curator Tool	3

Connecting the Curator Tool to GRIN-Global Servers	34
Handling Users Who Do Not Have Windows Administrator Privileges	36
Step for Adding the PC User(s) to the Local SQL Server Database Administrator's Group	36
Organizational Setup	36
Uninstalling and Re-installing GRIN-Global	37
Adding Users	37
Installing with Firewalls	39
Two Setup Files are Involved in Setting Up the GRIN-Global Updater Application	39
When a Firewall is Active	41
Installing GRIN-Global on a Non-Windows Server	44
Install GG on a Windows-based Computer	45
Load Your Local Data to the New MySQL GRIN-Global Database	46
Load the Data into Your Remote MySQL Database Server	46
Modify the Database Connection Used by the Middle Tier Web Services	46
How to Troubleshoot Connection Problems	49

Components of GRIN-Global

Deciding When to Use GRIN-Global Updater and What Components to Install

Not all GRIN-Global users need to install all of GRIN-Global's components.

Germplasm Requestors

Users who are germplasm requestors (typically external to the organization) can access GG information from an organization's GRIN-Global (GG) Public Website. These users need a browser only–no GG software is installed on their PC. The users will access GG data, using their browser, and direct their browser to the organization's GG website URL.

Note

Currently there are multiple, independent GG databases run by various institutes such as the CIMMYT <u>Maize</u> and <u>Wheat</u> databases, the <u>Czech Republic Crop Research Institute's</u> database, and the USDA's <u>database</u>. (Use the GG Databases dropdown at the <u>GG Resources Site</u> for other GG sites.) Also, the <u>Genesys</u> project makes it possible to reference germplasm from the various GG databases.

Genebank Personnel

Genebank personnel will most likely use the **Public Website** as a tool for reviewing germplasm in the same manner as germplasm requestors do, but they will also use the **Curator Tool** (CT) to edit and maintain the genebank germplasm data. In larger organizations, the genebank's personnel will be accessing GRIN-Global data stored on the organization's remote server. Only the client applications, the Curator Tool and the Search Tool, will be installed on each genebank user's PC. (In the process of installing the CT, the Search Tool is automatically installed.)

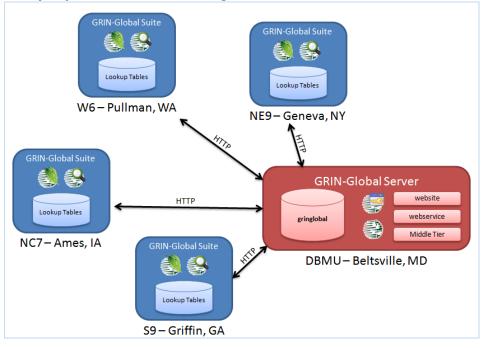
Organization Server

Generally, when an organization wants the data on its network and available to many PCs, it runs a server computer and all of the GG *server* components are installed on the server. The organization's internal users, typically the genebank staff, will have copies of the Curator Tool installed on their PCs.

The server may not necessarily have the Curator Tool or the Search Tool installed on the server, but it could – this is handy if the GG administrator intends to test the database when logged onto the server.



In smaller genebanks, a user's PC could do double-duty as a server – in this scenario the user's PC is the "localhost" – acting as a server. The PC could also run the client, the Curator Tool.



Example of Networked PCs Accessing the GG Database on a Server

GG Updater Program is used for Installing the Server GRIN-Global Components

To install the GRIN-Global server components, use the GG **Updater** program. However, the Updater is no longer used to install all of the GG server components. See <u>Updater Notes</u> for details.

Admin Tool

This tool handles many important administrative "behind the scenes" functions such as adding users, assigning security privileges, creating data views, and the bulk importing of data. The **GG Updater** is used to install the Admin Tool program on the server.

Database

Using the GG Updater, when the **GRIN-Global Database** component is selected, a copy of the GRIN-Global database is installed. This installs a *new* database, so if the computer has an existing GG database, it will be overlaid.

Web Application (Middle-Tier code, the Public Website, and Web Services)

The GRIN-Global **Web Application** is the heart of the GRIN-Global Application Suite and must be installed on the server. The **Web Application** contains the actual business layer code ("middle-tier") and hosts the web services to access the business layer code. The programming code for the middle tier, the Public Website, and Web Services are all stored together. (For simplicity, this will be referred to as the "Web Application" rather than "middle tier / web site / web services.")

Formerly is was always true that the Web Application components were installed via the GG Updater. This is no longer the case. Any version of MS SQL Server after 2008 requires manual updating of these components.

Middle-Tier

The "Middle Tier" provides end points to which clients can connect, regardless of which programming language or operating system that client requires. The Middle Tier retrieves and updates data; provides an infrastructure for reading, creating, or manipulating updatable views of data without code changes; works with several different back-end database engines transparently; and enforces business logic (e.g. an accession must belong to a specific taxonomy).

Public Website

The GRIN-Global **Public Website** is a browser-based application that provides "public" user access to the database. Users are able to search and view accession information and are able to order germplasm using a browser cart approach.

Web Services

Web Services provide a standard means for different software applications, running on a variety of platforms and/or frameworks, to communicate and exchange data with the GRIN-Global database.

Curator Tool

The **GRIN-Global Curator Tool** is used by curators and users who create and manage genebank data. (These users will typically use the organization's Public Website as well.)

Microsoft Tools / Prerequisites

In order to run the complete GRIN-Global suite of applications on a user's PC, there are additional (free) tools that must be installed.

General Requirements When Installing the Database on the User's PC "a localhost"

- The user installing GRIN-Global must have *administrator rights* to the PC Note: Complete directions for handling the situation when a user does not have admin rights are detailed on page 36.
- Requires an Internet browser: Windows Internet Explorer and Mozilla Firefox are supported; the PC's browser must be Active-X enabled

Hardware requirements:

- 20 GB free hard drive space
- the suggested memory for running the Operating System + 2 GB RAM for running GRIN-Global

Operating Systems

- Windows Vista (Ultimate; 32- or 64- bit)
- Windows 7 (Ultimate; 32- or 64- bit)
- Windows 8.1
- Windows 10



GG can be installed on Windows 8 and 10. When installing GG on Windows Server 2012 or SQL Server 2012, you will need to do some installation steps manually. Please refer to the details in the Install Server Components document.

Prerequisites When the GRIN-Global Database and Admin Tool is Installed

Several Microsoft and Crystal Reports components are required when the GRIN-Global Database and Admin Tool is installed on a user's PC. At appropriate times, you will be guided by the installation wizard to download these programs, which will be downloaded if they are not already installed on the PC. They do not need to be reinstalled; however, when the PC has an older version than what is recommended, you should update to the recommended version. (Alternatively, at any time, you can manually download these.)

Component	Purpose
Windows Installer 4.5	Installer is the software used for the installation, maintenance, and removal of the GRIN-Global software onto a Windows-based computer
Windows Powershell 1.0	PowerShell is Microsoft's task automation framework, consisting of a command-line shell and associated scripting language built on top of, and integrated with the .NET Framework
Visual Studio Tools for Applications 2.0	Provides items required by the software code running GRIN-Global
Crystal Reports for Visual Studio 2008	SAP's Crystal Reports viewer is a free, standalone Report file viewer that enables the user to open and view interactive reports designed for the Curator Tool
SQL Server Express 2008 R2	Required on all computers where the Curator Tool is installed; the CT maintains a small SQL Server Express database of lookup tables on the user's PC
.NET Framework 4.5 (Service Pack 1)	The .NET Framework is a software framework that supports programming language interoperability where programs can use code written in other languagesNET provides important services such as security, memory management, and exception handling.

Prerequisites



Sometimes when installing a Microsoft application, you may be required to reboot. After rebooting, the Microsoft application will finish installing, but the GRIN-Global **Updater** program will not automatically launch and continue. Therefore, when a reboot is involved, you will need to launch **Updater** manually again. (Click the Windows **Start button**; select **GRIN-Global Updater**.) Reselect from the Updater window (example on page **Error! Bookmark not defined.**), the respective GRIN-Global application(s) to install; click the **Download/Install** button.



When installing Microsoft's SQL Server Express on a Windows 7 64-bit operating system, if you do not have Windows Service Pack 1 installed, a message will warn you that the SQL Server Express software has a known problem with the operating system. Rather than abort the installation, proceed with the install, and then update to Windows 7 Service Pack 1.

Updater Program

In order to install the GRIN-Global server components, you must first install the GRIN-Global **Updater** program. The following installation instructions provide step-by-step instructions; however, if your organization has a firewall, read the *Installing with Firewalls* section on page 39 before following these directions.

Step-by-Step Installation Directions

Step 1

Using your browser, such as Microsoft's Internet Explorer or Mozilla Firefox or Google Chrome, download and install the **Updater** program (zip installation file) from the GG "downloads" page: https://npgsweb.ars-grin.gov/gringlobal/downloads/



The Updater version number is not significant – an older Updater version can be used to install the latest GG components. Basically, the Updater will work with any version of GG. The address shown in the following illustration is just an example. Each organizational situation will differ.

In the **Installers** section, under **File**, **c**lick the link on **GRIN-Global Updater**:

🥑 GRIN-Global Web v 1	.0.7.0 - Mozilla Firefox			
<u>File E</u> dit <u>V</u> iew Hi <u>s</u> tory	<u>B</u> ookmarks <u>T</u> ools <u>H</u> elp			
🔮 GRIN-Global Web v 1.0.7.) × 🛐 Google Cale	ndar	× +	
🔶 🔶 😼 🔞 dis	tribution. grin-global.org /gringlobal/do	wnloads/default.aspx	☆ ⊚ ⊽ C 8 - 0	ioogle
🦻 Most Visited 🥹 Getting S	itarted 🦲 CheckoutLater 🚞 GRIN	-Global 🦲 Local 🦲 USDA-I	DBs 🦲 Intnl 🦲 USDA 🦲 farming 🦲 Reso	urces 🗧
Installers				
<u>View GRIN-Global disc</u>	:laimer			
-		E11 01 (112)		
View GRIN-Global disc	Modified	File Size (MB)		
File				
File <u>GRIN-Global Updater</u>	Modified 2011-12-19 10:20:43 AM -05:0	0 0.65 MB		
File <u>GRIN-Global Updater</u>	Modified 2011-12-19 10:20:43 AM -05:0	0 0.65 MB	nent requirements for the GRIN-Global sy	stem.

Depending on which browser you are using, your next step will vary slightly. Since most browsers emulate either Microsoft's Internet Explorer or the Mozilla Firefox browser, steps 2A and 2B were written to accommodate the differences.

- Proceed with <u>step 2A</u> if you are using Internet Explorer
- Skip to step 2B if you are using Firefox or a similar browser

Step 2A: (Using Microsoft's Internet Explorer)

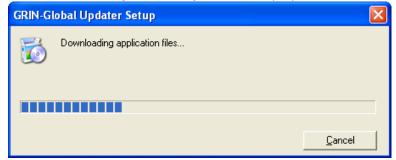
The **File Download** window displays. Unless you want to postpone initiating setup, click on the **Run** button to proceed.

File Download - Security Warning	\mathbf{X}		
Do you want to run or save this file?			
Name: gringlobal_updater_setup.exe Type: Application, 666KB From: test.grin-global.org Run Save Cancel			
While files from the Internet can be useful, this file type can potentially harm your computer. If you do not trust the source, do n run or save this software. <u>What's the risk?</u>	ot		

An Internet Explorer Security Warning window displays; click Run.



The GRIN-Global Updater Setup window displays:



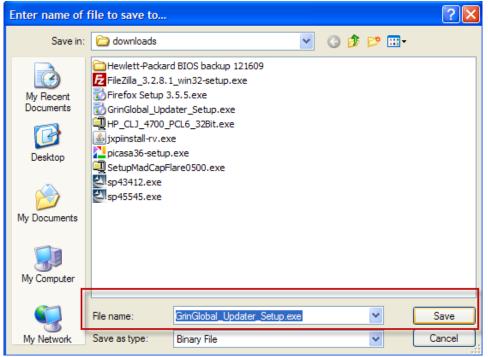
Proceed to <u>Step 3</u> on page 14.

Step 2B: (Using Mozilla Firefox)

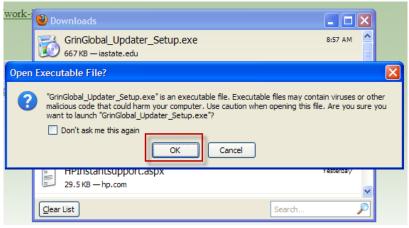
At the Opening GRIN-Global_Updater_Setup.exe window, click the Save File button.



Save the file.



Launch the file. (Double-click its filename if in Windows Explorer, or if in your browser, click on the filename. Click **OK**.)



Click the Run button.



Step 3

At the **Setup - Security Warning** window, click the **Run** button.



Organizational Firewalls

If the following window displays instead of the window above, your organization most likely has a firewall preventing the **GrinGlobal_Updater_Setup.msi** ("setup.msi") file from executing properly:

Window	rs Installer	×
•3	This installation package could not be opened. V that the package exists and that you can access contact the application vendor to verify that this is valid Windows Installer package.	it, or

When working with firewalls, follow the directions Installing with Firewalls section on page 39.

Step 4

For many of the Setup Wizard windows, click the Next button to continue.

谩 GRIN-Global Updater	
Welcome to the GRIN-Global Updater Setup Wizard	
The installer will guide you through the steps required to install GRIN-Global Updater on g computer.	vour
WARNING: This computer program is protected by copyright law and international treatie Unauthorized duplication or distribution of this program, or any portion of it, may result in a or criminal penalties, and will be prosecuted to the maximum extent possible under the lar	evere civil
Cancel < Back	Next >

Step 5

On the **Select Installation Folder** window you can change the default folder location and also indicate who will have access to the GRIN-Global programs (all users (**Everyone**) or the current user (**Just me**)). Generally, you can accept the defaults. If a different location is desired, click **Browse**. (Another option is the **Disk Cost** button which can be used to determine if you have enough space on your drive. The complete installation requires less than 1 GB.)

Click **Next** to accept the defaults and continue.

🛱 GRIN-Global Updater
Select Installation Folder
The installer will install GRIN-Global Updater to the following folder.
To install in this folder, click "Next". To install to a different folder, enter it below or click "Browse".
Eolder: C:\Program Files\GRIN-Global\GRIN-Global Updater\ Disk Cost
Install GRIN-Global Updater for yourself, or for anyone who uses this computer:
⊙ Everyone
◯ Just <u>m</u> e
Cancel < <u>B</u> ack <u>N</u> ext >

(Optional Step When the Disk Cost Button is Selected)

The **Updater Disk Space** window, indicating available and required space, is displayed when the **Disk Cost** button on the **Select Installation Folder** window is clicked. Click **OK** to continue.

🔂 GRIN-Global U	pdater Disk Space		
The list below include available and required	es the drives you can install GRIN-Glo d disk space.	ibal Updater to, along i	with each drive's
Volume	Disk Size	Available	Required
	297GB	273GB	972KB
■ D:	1025MB	1000MB	OKB
<			>
		(ок

Step 6

Click **Next** to continue with the Installation process.

d GRIN-Global Updater	
Confirm Installation	
The installer is ready to install GRIN-Global Updater on your computer.	
Click "Next" to start the installation.	
Cancel < <u>B</u> ack	<u>N</u> ext >

Step 7

Click **Close**. Note: If you need to pause, this is a good stopping point.

🐻 GRIN-Global Updater	
Installation Complete	
GRIN-Global Updater has been successfully installed. Click "Close" to exit.	
Please use Windows Update to check for any critical updates to the .NET Framework	
Cancel < <u>B</u> ack	<u>Close</u>

Step 8

[Note: if you interrupt the installation process, you can return to this point via the Windows **Programs** menu by selecting **Start | All Programs | GRIN-Global | GRIN-Global Updater**.]



Determining if Your GRIN-Global Software Components are Current

The GRIN-Global **Updater** window is used to check for server updates. In the following window, one of the server components, the **Database** component, is displaying an "Outdated" Status and has not been updated, whereas the other server components, **Admin** and **Web Application**, are current.



The following screen is an example; the version numbers shown are not necessarily the current version numbers.

😫 GRIN-Global Up	dater v 1.0.9.	0						
File Tools Help						_		
Download From Serve	er: http://sun.ars	s-grin.gov/~dbmuke	e/cgi-bin/gringlobal	1/1.7.1/gui.asmx		Use Offline		
Check For Server	Updates					-		
Component		Installed Version	Latest Version	Size (MB)	Status			
GRIN-Global A	dmin	1.7.0	1.7.0	2.85	Current	<u>Uninstall</u>		
GRIN-Global D	atabase	1.7.0	1.7.1	3.05	Outdated	<u>Uninstall</u>		
GRIN-Global 🗤	GRIN-Global Web Application 1.7.1 1.7.1 4.63 Current Uninstall							
Check For Client I Component GRIN-Global C	Software D:\Progr ✓ Pre-p ◯ Custom Ins	stallation e as little as possibl will be installed to a am Files\GRIN-Glo opulate with examp	a subfolder of the fo bal le GRIN-Global dal	ta	KCan	Cel , ;; / Install		
	C	hecking for new ve	rsion of GRIN-Glob	al ClientDone				

Location of Server Components

Point the GG Updater to the new server components at:

http://sun.ars-grin.gov/~dbmuke/cgi-bin/gringlobal/1.9.7.1/gui.asmx

(Copy this address into the GG Updater box and click the **Check for Server Updates** button) as shown below: (*Read also the next page before clicking the* **Download/Install** *button*):*

U		GRIN-GI	bal Updater	v 1.0.8.0			×
File	Tools Help						
Down	nload From Server: http://sun.ar	s-grin.gov/~dbmuke	:/cgi-bin/gringlobal/	/1.9.6.2/gui.asmx		✓ Use Offlin	e
Cł	neck For Server Updates						
	Component	Installed Version	Latest Version	Size (MB)	Status		
✓	GRIN-Global Admin	(not installed)	1.9.1	2.86	Outdated		
•	GRIN-Global Database	(not installed)	1.9.6.2	3.12	Outdated		
✓	GRIN-Global Web Application	(not installed)	1.9.6.2	8.51	Outdated		
	ollowing software may also be required by the software may also be software may also be required by the software may also be softwa	uired: Web server co	omponents (IIS)			Download / Inst	all
	Component	Installed Version	Latest Version	Size (MB)	Status		
	Ch	ecking for new ve	rsion of GRIN-Glo	bal ServerDor	ne		.::

* version shown in the graphic is not necessarily the current version – see the large bold text above)

Update the three server components (listed in the top half of the **Updater** window) when you are updating a server in a networked environment. You will also download the server components when operating a stand-alone PC that will be serving as the localhost as well the client (alternative #1 in the figure on page 21.)

Currently the Updater only installs a new GG database – it does not update an existing GRIN-Global database. If you have data in a test GG database, you will need to save that data and run a series of SQL scripts to populate your new GG database.

If you are installing only the *Curator Tool client on your PC*, you do not need to download any of the *server* components.

To Download GRIN Taxonomy and Geography



As an option, you can download the Taxonomy and Geography data that was copied from the U.S. GRIN system. **This option is highly recommended.**

First select the components' checkboxes (as shown in the screen below).

To download the **Taxonomy** and **Geography** data, press and hold the **Ctrl + Shift** keys *before clicking* the **Download/Install** button. (If you do not want to load the Taxonomy and Geography data, skip the **Ctrl + Shift** technique.)

Click the **Download/Install** button:

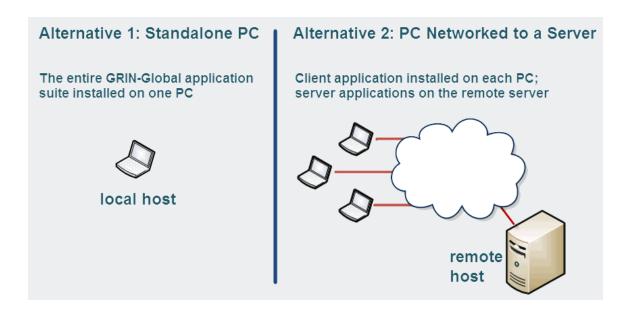
😫 GRIN-Global Updater v	1.0.9.0				_ 🗆 🗙
File Tools Help					
Download From Server: http:	//sun.ars-grin.gov/~dbmuk	e/cgi-bin/gringlobal	/1.7.1/gui.asmx	*	Use Offline
Check For Server Updates					
Component	Installed Version	Latest Version	Size (MB)	Status	
GRIN-Global Admin	1.7.0	1.7.0	2.85	Current	<u>Uninstall</u>
GRIN-Global Database	1.7.0	1.7.1	3.05	Outdated	<u>Uninstall</u>
GRIN-Global Web Appli	cation 1.7.1	1.7.1	4.63	Current	Uninstall
Software will be inst D:\Program Files\C Pre-populate wi	as possible. Use all the defa alled to a subfolder of the fo iRIN-Global th example GRIN-Global dat settings before applying the	a	Cance	rent	Download / Install
	Checking for new v	ersion of GRIN-Glob	al ClientDone		

(disregard the address shown in this graphic; this address was used only for illustration)

Local vs. Remote



You must have a network/Internet connection to connect to a remote server. However, most organizations will most likely install the server on a remote server PC and then install the Curator Tool on the various user PCs. The localhost option will be used by smaller genebanks which will not have the data sharing by multiple users.



For installation directions for just the Curator Tool, the client application, refer to its <u>installation</u> <u>section</u>.

Server Components: Installing (or Updating)

There are three main server components in the GRIN-Global suite:

Component	Туре	Purpose
Admin	Server	Tool for GRIN-Global administrators to create new logins (users), new cooperators, and data views, and assign security levels
Database	Server	A local copy of the database on the PC
Web Application	Server	The middle tier web services, shopping cart, etc.

GRIN-Global Components Installed via the Updater

[Curator Tool]	Client	[Note: this is the client program and will eventually be removed from the Updater window, but for now, it is shown at the bottom half of the Updater window.
		Do not use the Updater to install the Curator Tool.

Default and Custom Installation Options

When installing any of the GG components, you will be prompted with an **Install Mode** window in which you can select either **Default Installation** or **Custom Installation**. Default is recommended and is the simplest to do; you will not be prompted to confirm intermediate screens.

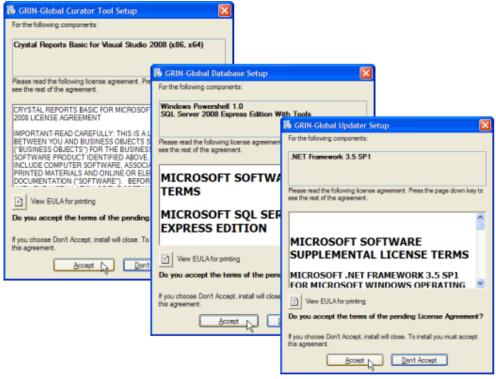
📰 Install Mode 🛛 🗙
 Default Installation Prompt me as little as possible. Use all the default settings. Software will be installed to a subfolder of the following:
D:\Program Files\GRIN-Global
 Custom Installation Prompt me to verify settings before applying them.
<u> </u>

When you click the **Continue** button, the process will continue, but first the following window with a warning message displays. Click the **OK** button:

File Information Request(s) Failed
The following files were not found on the server at the appropriate path:
~/uploads/installers/latest/accession_data.cab ~/uploads/installers/latest/observation_data.cab ~/uploads/installers/latest/order_data.cab ~/uploads/installers/latest/taxonomy_data.cab
Please contact the server administrator.
ОК

General Requirements – Installing Microsoft Applications

When the respective acceptance window displays for a Microsoft prerequisite program, click **Accept** to proceed with the installation.



Sometimes when installing a Microsoft application, you may be required to reboot. (We use the word "may" here because throughout the development period, Microsoft has continued to change the installation procedures of these products.) After rebooting, the Microsoft application will finish installing, but the GRIN-Global **Updater** program will not automatically launch and continue. Therefore, when a reboot is involved, you will need to launch **Updater** manually again. (Click the Windows **Start button**; select **GRIN-Global Updater**.) Reselect the respective GRIN-Global application(s) to install; click **Download/Install**.

Server 2012

gg installation guide 2016jul29.doc

When installing GG on Windows Server 2012 or SQL Server 2012, you will need to do some installation steps manually. Please refer to the details on this web page: http://www.ars-grin.gov/npgsold/gg 2012 install.html Note

Database: Installing (or Updating)

When the **<u>GRIN-Global Database component is selected</u>**, a copy of the GRIN-Global database is installed on the computer acting as the server.

Step-by-Step Directions

Requirement: The **GG Updater** must first be installed on the computer. (See the <u>Updater</u> section for directions is it has not yet been installed.)

Step 1

Select Start | All Programs | GRIN-Global | GRIN-Global Updater



Step 2

First click the **Check for Server Updates** button. The **Updater** screen displays the versions and statuses for each of the server components.

		GRIN-GI	obal Updater	v 1.0.8.0		- 🗆 🗙
File	Tools Help					
Down	nload From Server: http://sun.ar	s-grin.gov/~dbmuke	/cgi-bin/gringlobal	/1.9.4.2/gui.asmx	:	✓ Use Offline
Ch	neck For Server Updates					
	Component	Installed Version	Latest Version	Size (MB)	Status	
•	GRIN-Global Admin	(not installed)	1.9.1	2.86	Outdated	
☑	GRIN-Global Database	(not installed)	1.9.3	3.12	Outdated	
•	GRIN-Global Web Application	(not installed)	1.9.4.2	8.50	Outdated	
		1				
The fo	ollowing software may also be requ	uired: Web server co	omponents (IIS)			Download / Install
Cł	heck I V It Updates					
	Cor	Installed Version	Latest Version	Size (MB)	Status	

(This example is not necessarily displaying the current numbers.)

Notes on Selecting a Database

When running the Curator Tool locally on your PC's hard drive, a database engine is required. The CT has been tested on the following four database products:

- Microsoft SQL Server
- MySQL
- PostgreSQL
- Oracle

Note

(October 23, 2013: GG has been tested only for Microsoft SQL Server for versions post-1.07. Do not use with the other databases at this time.)

In addition to one of the four database engines, even if the database is installed on a remote server, when the CT is installed on the user's PC, a copy of MS SQL Server Express is copied onto the user's PC. The SQL Server database on the user's PC will manage the Curator Tool lookup tables.

If you are installing the Database, Search Engine, or Web App, and a local database engine is not found, a database engine dialog is shown which prompts you to choose which engine you intend to use.

The links to the four databases in the table below are the same links that are in the Updater application. The following directions are for installing on SQL Server; -- the other engines will follow a similar installation procedure.

Database	Source
MS SQL Server	http://www.microsoft.com/web/gallery/install.aspx?appsxml=&appid=SQLExpressTools;SQLExpressTools
MySQL	http://dev.mysql.com/downloads/mysql/5.1.html#win32
Oracle	http://www.oracle.com/technology/software/products/database/xe/htdocs/102xewinsoft.html
PostgreSQL	http://www.postgresql.org/download/windows



As of 11/1/2013, the latest release of GG is being distributed with the caveat that it has not been fully integrated and tested for the four database engines. Currently only MS SQL Server is supported. It is planned that the official 2.0 version will support the four database engines.

MS SQL Server (Installing)

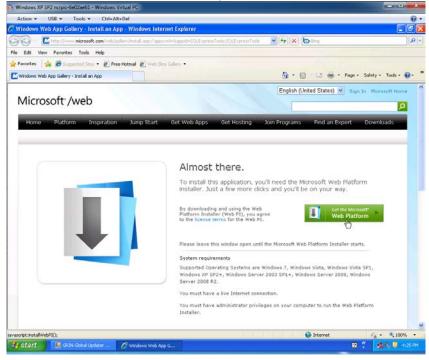


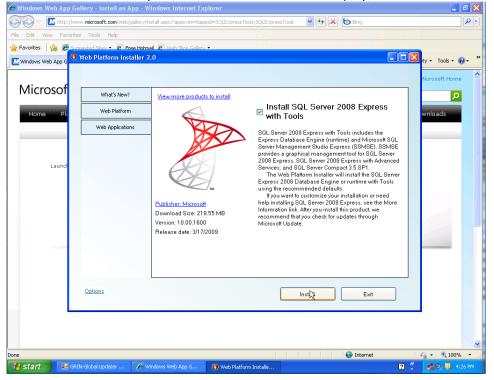
Microsoft updates its screens so the actual screens may vary from the following screen examples.

The screens that follow reflect the installation of Microsoft SQL Server. When the other engines are installed, similar screens will display:

😫 GRIN-Global	l Upi	🕏 Specify Database Engine for GRIN-Global 🛛 🛛	
File Tools I	Help	GRIN-Global requires a database to work properly.	Use Offline
Check For Se	erver	 Use a database hosted on this computer The following database engines are compatible with GRIN-Global. 	
Compone	ent	All are free of charge from their respective vendors.	
GRIN-Glo	bal A	Select Database Engine	<u>Uninstall</u>
GRIN-Glo	bal D	SQL Server 2008 or later Download More Information	<u>Uninstall</u>
GRIN-Glo	bal S	O MySQL 5.1 or later * Download More Information	<u>Uninstall</u>
GRIN-Glo	bal W	Oracle XE 10g or later * Download More Information	<u>Uninstall</u>
		PostgreSQL 8.3 or later * <u>Download</u> <u>More Information</u>	
Check For C	ilient L	" GRIN-Global has not been fully regression tested with this database engine and may exhibit problems	Download / Install
Compone	ent	Use a database hosted on a different computer	
		My database engine is already installed but is not detected properly You will be prompted later for additional connection information. DK Cancel) own gad / Install

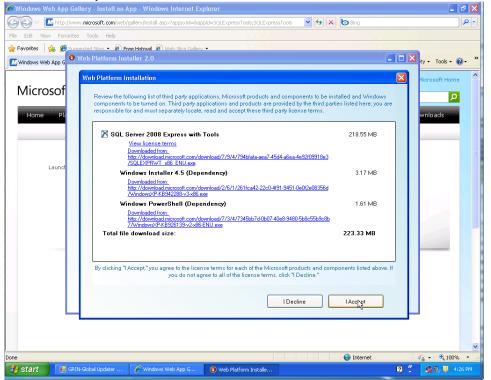
As part of the installation, Microsoft will install its "Web Platform" installer. Click on the **Get the Microsoft Web Platform** button to proceed.





The SQL Server 2008 Express installation window will display; click on the Install button.

Click the I Accept button.



When prompted for authentication mode, select **Windows Integrated Authentication**.

However, in the screen shown below, the server administrator option is being selected. This generally is the recommended option for the other three database engines. (The requested password is the password associated with the database engine administration program such as pgAdmin when working with PostgreSQL.) Input the password (twice); click **Continue**.

	Web Platform Installer 4.0			È	
F	PREREQUISITES	INSTALL	CONFIGURE	FINISH	rver ress, SQL
	We have detected that yo complete your installation Default database admin ad Password: ••••••• Re-type Password: ••••••• Save my password		Express. Please enter information	below to	using the
			Cancel	Continue	

Database Setup Wizard

The initial database window prompts for some specific connection information:

🗟 GRIN-Global Database Connection 🛛 🛛				
You must specify the database connection information for configuration to continue.				
Engine:	SQL Server 2008 or later 💌			
Server:	localhost			
Port:	SQLexpress			
	Use Windows Authentication			
User:	sa			
Password:				
	Test Connection			
Connection string:	Data Source=localhost\SQLexpress;Initial Catal	log=gringlobal;Trust		
	Save and Continue Cancel			

Background

All database engines require some kind of authentication to determine what rights you have to various operations. Some allow you to use the credentials with which you login to Windows -- this is known as "Windows Authentication." For this to work properly, your Windows login must be configured in the database engine as a valid user. Other database engines require you to enter a username and password that is specific to the database -- similar to logging in to a website.

To visit a website, all you need is the web address, such as http://www.grin-global.org/. In this example, the server name is grin-global.org. Also, there is an implicit port number of 80. Written explicitly, the address would be: http://www.grin-global.org:80/. This will work for any of your favorite web sites, go ahead and try it! At a bare minimum, a web address consists of a server and a port.

This connection method is exactly the same regardless of what kind of software the web server is running. To connect to a database a similar approach is used -- you must tell it some details about the server to which you are trying to connect.

However, unlike a web server, different database engines require different information when connecting. All require a server name, but some may require a specific "port" as well. Think of this as somewhat similar to the "80" portion of the web address example from above.

Examples of connecting to the various database engines supported by GRIN-Global (assuming the server name is "localhost"):

Database Engine	Server name	Port
MS SQL Server	localhost	SQLExpress
Oracle	localhost	1521
PostgreSQL	localhost	5432
MySQL	localhost	3306

The wizard takes you through the installation steps. To proceed, click Next.

🛿 GRIN-Global Database	
Welcome to the GRIN-Global Database Setup Wizard	
The installer will guide you through the steps required to install GRIN-Global Databa computer.	se on your
WARNING: This computer program is protected by copyright law and international t Unauthorized duplication or distribution of this program, or any portion of it, may resu or criminal penalties, and will be prosecuted to the maximum extent possible under th	lt in severe civil
Cancel < <u>B</u> ack	<u>N</u> ext >

Generally the defaults on this window will be adequate for most users. If you need to change something on this window, do so, otherwise click **Next**.

👹 GRIN-Global Database	
Select Installation Folder	
The installer will install GRIN-Global Database to the following folder.	
To install in this folder, click "Next". To install to a different folder, enter it be	low or click "Browse".
<u>F</u> older:	
C:\Program Files\GRIN-Global\GRIN-Global Database\	B <u>r</u> owse
	Disk Cost
Install GRIN-Global Database for yourself, or for anyone who uses this co	mputer:
◯ Just <u>m</u> e	
Cancel < Back	Next >

🖗 GRIN-Global Database			
Confirm Installation			
The installer is ready to install GRIN-Glo	bal Database on your (computer.	
Click "Next" to start the installation.			
		·····	
	Cancel	<u>N</u> e	ext > 12
			. 0

Several screens will display in succession.

)/22/2009 10:36:34 AM - Initializir)/22/2009 10:36:34 AM - Restarti nnections	
Expanding c:\pr gginst\data\cod	ogram files\grin-global\grin-global database\data.
Expanding c:\pr gginst\data\cod Expanding c:\pr gginst\data\cod	GRIN-Global Database Installation
gginst\data\coo Expanding c:\pr gginst\data\coo Expanding c:\pr gginst\data\coo Expanding c:\pr gginst\data\cro Expanding c:\pr gginst\data\cro	10/22/2009 10:38:39 AM - Buk insetting data for accession_source_map: 10/22/2009 10:38:43 AM - Total import time for accession_source_map: 10/22/2009 10:38:43 AM - Preparing code_rule source file for import 10/22/2009 10:38:43 AM - Buk insetting data for code_rule. 10/22/2009 10:38:43 AM - Preparing code in crode_rule. 10/22/2009 10:38:43 AM - Preparing code in crode_rule. 10/22/2009 10:38:43 AM - Total import time for crode_rule. 10/22/2009 10:38:43
gginst\data\cro	10/22/2009 10:38 43 AM Flipping genetic_gini rotation source file for 10/22/2009 10:38 43 AM 10/22/2009 10:38 43 AM Flopping and import time for genetic_annotation 10/22/2009 10:38 43 AM 10/22/2009 10:38 43 AM Flopping and import time for genetic_annotation 10/22/2009 10:38 43 AM 10/22/2009 10:38 43 AM Flopping and import time for inventory 10/22/2009 10:38 54 AM 10/22/2009 10:38 54 AM Buk insetting data for inventory 10/22/2009 10:39:20 AM 10/22/2009 10:39:20 AM Flopping inventory action source file for inport

The final window will indicate that the database "has been successfully installed;" click **Close**.

👹 GRIN-Global Database	
Installation Complete	
GRIN-Global Database has been successfully installed. Click "Close" to exit.	
Please use Windows Update to check for any critical updates to the .NET Framewor	k.
Cancel < <u>B</u> ack	

Admin & the Web Application: Installing (or Updating)

Installing either the Admin or the Web Application server components is very straightforward. Generally, all three server components will be selected at the same time, but each can be selected individually as shown below for the **Admin** component.

Select Start | All Programs | GRIN-Global | GRIN-Global Updater



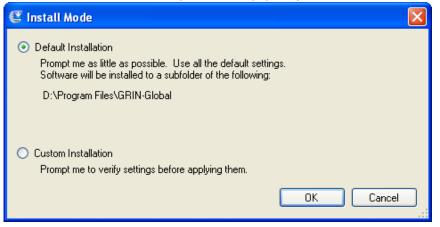
First click the **Check for Server Updates** button. Use <u>http://sun.ars-grin.gov/~dbmuke/cgi-bin/gringlobal/1.9.6.2/gui.asmx</u>

for the address. Select the checkboxes for the components to be installed:

ile	Tools Help						
)owr	hload From Server:	http://npgsw	veb.ars-grin.gov/grin	global/gui.asmx		~	Use Offline
a	neck For Server Upo	dates					
	Component		Installed Version	Latest Version	Size (MB)	Status	
~	GRIN-Global Admi	n	(not installed)	1.9.1	2.86	Outdated	
•	GRIN-Global Data	base	(not installed)	1.9.1	3.05	Outdated	
-	GRIN-Global Web	Application	(not installed)	1.9.1	8.46	Outdated	
				100000			

(Illustration only; not necessarily the current versions.)

You will be prompted to select a **Default** or **Custom** installation; select the desired option and then click **OK**. The installation will then proceed very quickly.



Curator Tool: Installing (or Updating)

PCs for all genebank staff accessing the GG database will need to have a copy of the Curator Tool installed.

(For the link to the online page with the latest Curator Tool version, see the GG downloads page)

The Curator Tool zip file is contains a self-extracting .exe file. (Formerly the Curator Tool (CT) installation was done via the GG Updater program.)

For CT installation instructions, refer to the Curator Tool Installation Guide.

Starting the Curator Tool

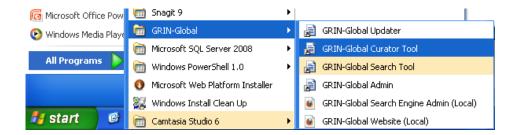
When the Curator Tool is initially invoked, it needs to be supplied with server information, indicating the database it will use. If the entire GRIN-Global application has been installed locally, then the database will be "**localhost**." In an organizational setup where the server is remote, you will point to the server's address. Directions for connecting the GRIN-Global servers to the Curator Tool are explained below.

Start the Curator Tool

After installing, select the GRIN-Global Curator Tool from the Windows program menu.



or...





You can also add the shortcut to the Start menu or the desktop. Select **Start | All Programs | GRIN-Global;** highlight the GRIN-Global Curator Tool program, then right-click. Select either **Pin to Start menu**, or **Create Shortcut** (desktop shortcut), or both.

Connecting the Curator Tool to GRIN-Global Servers

Changing Servers

In most organizations the GRIN-Global database will reside on a remote server. In others, especially very small genebanks, the entire GRIN-Global suite of applications may be installed on a single user's PC. In either case, when you login you must indicate the GRIN-Global database location.

By default, a server will be listed in the **Connect To:** dropdown box. In the following example, the default server is localhost, which means that the user will be working on the database stored on his own PC. However, when the user clicks the dropdown, he sees several other possible servers which he can connect to. (Since this is a screen taken by a tester, there are many servers listed here whereas generally in most organizations only one or two will be listed.)

Username: test11	
Password:	
Connect To: localhost Edit Servi Test1 (Ames, IA) Dev 1 (Ames, IA) Dev 2 (Ames, IA) Gold (Beltsville) sec testng	2

S Login		
Username: test11		
Password: *****		
Change password		
Connect To: Docalhost		
OK Cance	😸 Web Services List Editor	
	List (Friendly) Name	Properties
	Test1 (Ames, IA)	Name: localhost
	Dev 1 (Ames, IA) Dev 2 (Ames, IA)	Server Name (or IP Address):
	Gold (Beltsville) sec testng	localhost
	Move Down	Examples: grin-global-test1.agron iastate.edu norpis-arven agron.iastate.edu 123.186.234.51 123.186.234.4
	Add New Delete	Test Server Address
		OK Cancel

To include or delete servers from the list, click the **Edit Server List** button:

On the **Web Services List Editor** window, click the **Add New** button to add a new server. A new generic entry will be added at the bottom of the list in the left box, **List (Friendly) Name**. On the right side of the window, you can edit the name and the true server name or IP address. Typically the GRIN-Global administrator will provide the computer name of the server (or if she does not have a <u>Domain Name</u> <u>Server</u> available she will supply an explicit <u>IP address</u>).

🖳 Web Services Li	ist Editor 🛛 🗕 🗖 🗙
List (Friendly) Name NPGS web AMES localhost List (Friendly) Name	Properties List Display Name: NPGS web ✓ Use SSL Server Name (or IP Address):
Move Down	npgsweb.ars-grin.gov Examples: grin-global-test1.agron.iastate.edu norpis-arwen.agron.iastate.edu 129.186.234.51 129.186.234.4
Add New Delete	Test Server Address OK Cancel

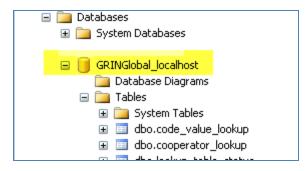
Note that the order of the list can be adjusted by selecting a server and then clicking on the **Move Up** and **Move Down** buttons. When you work from multiple servers, move the server which you will use

most of the time to the top at the list. The one listed at the top will be listed as the default server when the user logs in.

Note also that there is an optional SSL checkbox. An organization needs to determine if they require SSL or not. The server administrator will indicate how to manage the checkbox.

Handling Users Who Do Not Have Windows Administrator Privileges

When the Curator Tool is installed, a copy of SQL Server Express is also installed on the user's PC. (A database of lookup tables is installed, hence the requirement for SQL Server.)



Step for Adding the PC User(s) to the Local SQL Server Database Administrator's Group

In some organizations, the usual user ("owner") of the PC is not granted Windows administrator privileges. When that is the situation, a person with administrator rights on the PC needs to grant the primary user (and other users of the PC) the right to modify the local (LookUp table) SQL Server database when they are using the Curator Tool. This one-time step is done within the Curator Tool. The person with Windows Administrator rights needs to start up the CT and select from the **Help** menu the option **Make the database accessible to all users**:

SRIN-Global v2.0.4224.21682		
File	Help	
i Qs	e Make database accessible to all users	order Wizar
Show	About	toru Orders

Organizational Setup

There are three major steps to be completed when setting up GRIN-Global for an organization:

- 1. Install the software (explained in this **GRIN-Global Installation Guide**)
- There is an overview document online which GRIN-Global administrators should read: <u>http://www.ars-grin.gov/npgs/gringlobal/docs/gg_recommended_procedures.pdf</u> This document provides tips and suggestions for implementing GG in an organization.
- 3. Prepare and import any existing data (refer to the <u>GRIN-Global Cookbook</u> for an overview and step-by-step details)
- 4. Add users and grant them security privileges. (Described below are some general suggestions about adding users; for detailed steps, refer to the <u>GRIN-Global Administrator Guide</u> and the

<u>Curator Tool User Guide</u> – each of these manuals addresses specific security settings, permission, and ownership.)

Uninstalling and Re-installing GRIN-Global

If you have a version of GRIN-Global server software installed that is older than 1.5.1167, we recommend that you manually un-install the server components running the newest version of the **GRIN-Global Updater** by clicking the "Uninstall" link on the right-hand side of the component list.

	Component	Installed Version	Latest Version	Size (MB)	Status	
	GRIN-Global Admin			1		<u>Uninstall</u>
~	GRIN-Global Database					Uninst&")
	GRIN-Global Web Application					<u>Uninstall</u>

(The Updater program is available on

https://npgsweb.ars-grin.gov/gringlobal/downloads/)

After you have manually un-installed the legacy server components, you are ready to install the latest version of GRIN-Global.



There should be no reason why you should uninstall SQL Server Management Studio (SSMS) (if you had previously installed it when installing an earlier version of GRIN-Global). Never manually use Windows Explorer to find and delete SSMS files or programs.

Adding Users

During the initial GRIN-Global installation, two user accounts are automatically generated: **administrator** and **guest**. The initial password for **administrator** is **administrator**.

Because **administrator** is the only default Admin Tool administrator, immediately after installing GRIN-Global, you should (a) change the administrator password, and (b) create at least one more administrator user account.

You should also add new user accounts before, or as soon as they are needed.

Security Issues

When security is enabled, permissions which have been established at the table or dataview level or even across the database will be in effect. Unless given specific permissions, new users will be very limited to what they are allowed to do.

If you prefer to globally disable all security restrictions, in the Admin Tool, select **Web Application**; double-click on **DisableSecurity**; select **True**. (See the **Security** section in the Admin Tool Guide for details.)

Alternatively, if you keep security enabled, then individual User IDs cannot create new records until you either add the users to the **Administrators** group or grant the users **All access** permission.

Use the Admin Tool to grant other users WRITE privileges to tables (please see the <u>Administrator Guide</u> for instructions on how to grant users security privileges).

Windows Administrator Rights

For security reasons in some organizations, a user's PC may be setup so that the user does not have full Windows Administrator rights to his / her PC even though that user may be the primary (or only) user of the PC. When that is the case, the organization's PC Administrator, usually someone from the organization's Information Technology or Security group, will need to install GRIN-Global. The administrator will also need to perform an additional step if the GRIN-Global user will be accessing data on her local PC. For complete directions on adding the user to the local SQL Server database administrator's group, see "Handling Users Who Do Not Have Windows Administrator Privileges" on page 36.

Installing with Firewalls

Two Setup Files are Involved in Setting Up the GRIN-Global Updater Application

"...setup.exe"

This is the file that is accessed from the link under the *Installers* section of the GRIN-Global downloads page:

Installers						
View GRIN-Global disclaimer						
Modified	File Size (MB)					
2011-07-27 12:47:17 PM -04:00	0.65 MB					
	_					

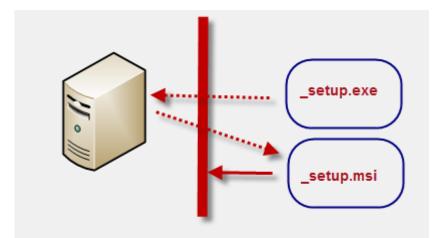
This **setup** program will automatically check your system to ensure all system components and applications required by the GRIN-Global **Updater** program are properly installed on your computer. If any prerequisite is not detected by this **setup** program, it assists with the downloading and installing of the missing component before allowing the **Updater** program to be installed.

"...setup.msi"

After **setup** is satisfied that all **Updater** prerequisites have been successfully installed on your computer, it downloads and runs a second file (the **GrinGlobal_Updater_Setup**.*msi*) to complete the Updater installation process. You will know the **GrinGlobal_Updater_Setup**.*msi* file has successfully downloaded and started properly when you see the "Updater Setup Wizard" steps on your screen.



Unfortunately, some organizations have a firewall that prevents the second of the two GRIN-Global installation files from properly downloading:



(The actual file names are GrinGlobal_Updater_Setup.exe and GrinGlobal_Updater_Setup.msi.)

How can you know if the .msi is not able to get through the firewall? During the installation process, after you have started the **Grin-Global_Updater_Setup.exe** file, you should be prompted to run the .msi file – if you receive an error message similar to the following, then the firewall is preventing the .msi file from running:

Window	s Installer 🛛 🔀
8	This installation package could not be opened. Verify that the package exists and that you can access it, or contact the application vendor to verify that this is a valid Windows Installer package.

When this situation exists, and if you have previously installed GRIN-Global, you may run into the situation where *it appears that everything is okay, when in fact an old version of the msi file will run on your PC, and will not run the correct version* of the GRIN-Global **Updater** program.

If your organization has a firewall that prevents you from downloading the msi file, an alternative is to download the compressed file **GrinGlobal_Updater_Setup.zip** that contains both the **.exe** and the **.msi** files.

Directions for installing GRIN-Global Updater when your organization has a firewall are detailed, starting on the next page.

When a Firewall is Active

If your organization has a firewall:

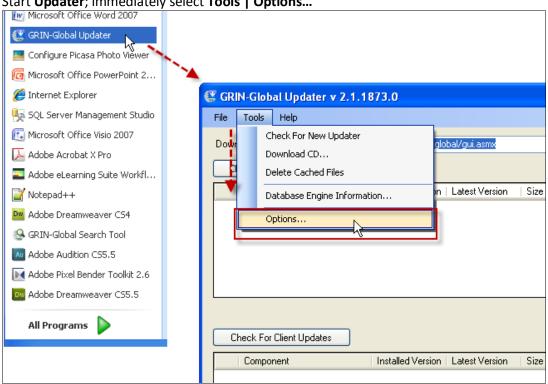
1. Download the "zip" file GrinGlobal_Updater_Setup.zip from the GRIN-Global downloads page: (see downloads)

Other Supporting Files					
File	Modified	File Size (MB)			
GrinGlobal_Updater_Setup.zip	2011-12-15 11:46:45 AM -05:00	1.32 MB			
gringlobal_prereq_cd.zip	2011-11-09 12:03:22 PM -05:00	708.96 MB			

2. The two setup files, the .exe and the .msi files are contained in the zip file. (GrinGlobal Updater Setup.exe and GrinGlobal Updater Setup.msi)

Unzip (extract) the two files into one folder on your computer's hard drive.

- 3. Run GrinGlobal_Updater_Setup.exe
- 4. After the Updater application has been successfully installed on your computer, do not attempt to download or install any GRIN-Global applications (including any updates to the Updater application itself) until you have properly configured the HTTP Proxy settings in the Updater application.



Start Updater; immediately select Tools | Options...

5.	Verify that the pro	xy settings are set similar to the following:
э.	verify that the pro	Ay settings are set similar to the following.

	ne System Info Installer CD Mirror Server				
Automatically check for a new version of Updater					
 Use HTTP Proxy Use Internet Explorer proxy settings 					
Custom Proxy-					
Server Nar					
	Bypass on local Ignore HTTP 417 Errors Use Windows Credentials				
Usernar	ne:				
Passwo	rd:				
Doma	in:				
Test Conn	ection				

6. Test the connection:

👙 Options		×			
General Download Cache	System Info Installer CD Mirror Server				
Automatically format	JRL as needed				
	for a new version of Updater				
🔽 Use HTTP Proxy					
🔽 Use Internet Expl	prer proxy settings				
Custom Proxy Server Name:	Port:				
	Bypass on local Ignore HTTP 417 Errors				
	✓ Use Windows Credentials				
Username:					
Password:					
Domain:					
Test Courset					
Test Connection					
Success - HTTP Proxy Configuration					
Successfully connected to GrinGlobal.Web v 2.1.1875.0 at http://test.grin-global.org/gringlobal/gui.asmx					
	ОК				

As of February, 2015, please use: http://sun.ars-grin.gov/~dbmuke/cgi-bin/gringlobal/1.9.4.2/gui.asmx

for the server address in the Updater.

The current version of the **Updater** will display something *similar* to the following:

۲				GRIN-Glo	obal Updater	v 1.0.8.0		_ (×
File	Tools	Help							
Download From Server: http://sun.ars-grin.gov/~dbmuke/cgi-bin/gringlobal/1.9.4.2/gui.asmx v							✓ Use Of	ífline	
	Check For Server Updates								
	Compor	nent		Installed Version	Latest Version	Size (MB)	Status		
	GRIN-Global Admin			(not installed)	1.9.1	2.86	Outdated		
	GRIN-G	obal Datał	base	(not installed)	1.9.3	3.12	Outdated		
	GRIN-GI	obal Web	Application	(not installed)	1.9.4.2	8.50	Outdated		
The following software may also be required: Web server components (IIS) Download / Install Check I Updates									
	Cortant Installed Version Latest Version Size (MB) Status								

You must be pointing to the correct server in order to download the GRIN-Global components: Admin, Database, Web Application, and the Curator Tool.

Verify that the Latest Version is higher than the Installed Version.

If you are still having difficulties with the installation after having followed the steps above, check with your local systems administrator or contact <u>feedback@ars-grin.gov</u>.

Installing GRIN-Global on a Non-Windows Server



Background Information

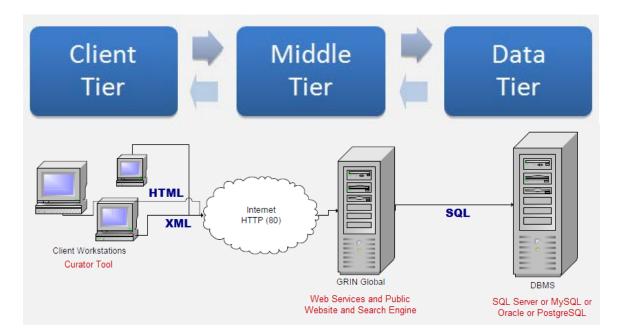
GRIN-Global was designed to primarily run in a Windows environment, but it is possible to have a non-Windows server house a MySQL, PostgreSQL, or Oracle database. However, to do so, you will need to first install GG on a Windows-based PC, and then port the database from the Windows-based PC over to the non-Windows server by backing up the Windows database and restoring it to the non-Windows server.

After porting the database to the non-Windows server, you will then point to the database in its new location with a parameter in the GRIN-Global Admin tool. Follow the detailed steps in this section for this type of installation.



The GRIN-Global (GG) system is a 3-tier based system. The three tiers are the: **client**, **middle**, and **data** tiers.

- The data tier is the database where the plant genetic resource data is permanently stored GRIN-Global is designed to handle four database engines: SQL Server, MySQL, Oracle, PostgreSQL. Organizations can implement any one of these as their database engine. (Only GG version 1.0.7 is currently compatible with these other database engines.)
- The **middle tier** consists of three sub-components: the GG Public Website, the Search Engine, and Web Services. (Web Services sends and receives data used by any Client Tier application.)
- The **middle tier** runs under the IIS web server on a Windows computer.
- The GG client tier application the Curator Tool never talks to the data tier directly, but instead communicates only with the middle tier's Web Services, using HTML and XML through port 80 on the IIS server. (By using port 80, the CT is very firewall friendly.)
- Since the **middle tier** manages the data between the **data tier** and the **client tier** (the Curator Tool), the CT never needs a database connector to the GG database because it never connects directly to that database; instead the CT requests data from the **middle tier** which in turn uses its database connector to retrieve the data from the remote database (**data tier**)



Install GG on a Windows-based Computer

The ideal environment for installing GG is a Windows-based computer that has not yet had any applications installed on it, especially database applications. Having a "clean" system avoids any possible conflicts that may occur when there are two or more database engines installed on the same PC. For example, if a PC has SQL Server 2005 running on it, during the GG installation, GG will load a 2008 version of SQL Server. Sometimes having more than one database engine installed on the same box, such as SLQ Server and MySQL, can also complicate installation of GG.

1. The following has been faded out for now since only GG 1.0.7 has all been tested for the four database engines.

Install a version of your preferred database engine on the Windows computer. For example, if you intend to run Oracle, MySQL, or PostgreSQL on the remote server, install the Windows version on your Windows box now. NOTE: MySQL installations should use the MySQL Windows Essentials 5.1 installer and ensure that the InnoDB storage engine is set as the default.

3. Navigate your browser to the GRIN-Global test download website: use: http://sun.ars-grin.gov/~dbmuke/cgi-bin/gringlobal/1.7.1/

Download and install the GG **Updater** application by following the instructions in the GRIN-Global <u>Installation Guide</u>. (The Updater installation steps begin on page 9, but the first eight pages include background material you should review before installing.)

4. Refer to the section *Server Components: Installing (or Updating)* section in the Installation Guide and follow the steps for installing the three GG server components on a Windows-based computer. Create the GG server using a localhost database connection – it should automatically detect your preferred database installed in step 2 above and install the GG database to it.

Note

You do not need to install the Curator Tool on the server to get your GG server up and running.

The Curator Tool is an application designed to be used on the curator's desktop PC and does not typically

Installing GRIN-Global on a Non-Windows Server

run on the server, but if you prefer, you can also install it on the server.

Note that whenever you install the Curator Tool on a PC, a version of SQL Server Express will also be installed. The Curator Tool uses this database engine only for its lookup tables. There should not be any clash with the main database engine by installing SQL Server Express.

Load Your Local Data to the New MySQL GRIN-Global Database

- 1. Start the GG Administrator Tool. You will use the Import Wizard in the Administrator Tool to complete these next steps.
- 2. Follow the instructions in the <u>Import Wizard Cookbook</u> for preparing your local data for importing to GG using the Import Wizard.



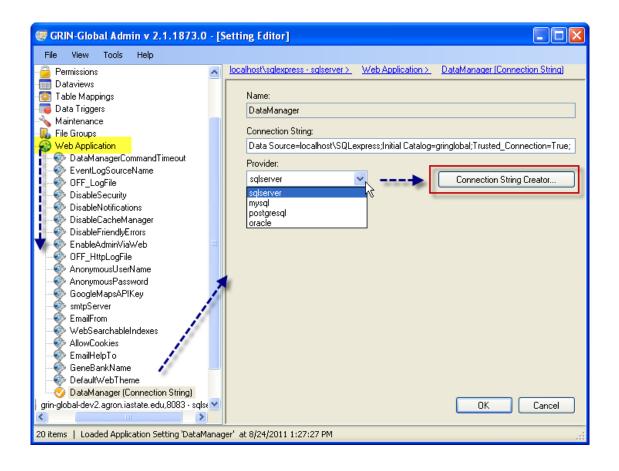
For examples of sample data, refer to the spreadsheets at <u>http://www.grin-global.org/index.php/Training</u> There is a <u>zip file</u> listed under the *Training Exercises* section, in the table's fourth row, that contains all of the sample .csv files.

Load the Data into Your Remote MySQL Database Server

- 1. Backup the MySQL GRIN-Global database from your localhost Windows server.
- 2. Copy the backup file over to your remote MySQL database and restore it there.

Modify the Database Connection Used by the Middle Tier Web Services In this step, you will use the GG Admin Tool to point to your new remote database.

- 1. Start the Admin Tool.
- 2. Click on the Web Application branch; select DataManager (Connection String).
- 3. Modify the **Connection String** box to point to your remote server. To do so, click the **Provider** dropdown box; select the database type that matches the target remote database engine type. Then click the **Connection String Creator...** button.



Complete the fields on the **Database Connection** window to generate the correct **Connection String** text. Click the **Save and Continue** button when complete. (Each database engine type has its respective **Database Connection** window. The one shown here pertains to SQL Server.)

🗟 GRIN-Global Database Connection 🛛 🛛 🔀					
You must specify the database connection information for configuration to continue.					
Engine:	SQL Server 2008 or later				
Server:	localhost				
Port:	1433				
	Use Windows Authentication				
User:	sa				
Password:					
	Test Connection Non-empty password is required				
Connection string:	Data Source=localhost;Initial Catalog=gringlobal;User Id='sa';Pass				
	Save and Continue Cancel				

- 5. To test your remote database, reboot the Windows server that hosts the GG Web Services and Public Website. After the server reboots completely, on your client PC open a browser and connect to the localhost GG Public Website using (<u>http://localhost/gringlobal/search.aspx</u>). If the Public Website comes up without errors, you can be assured that the new remote database is working and connected properly because the following conditions are true:
 - A. Windows IIS web server is running and accepting HTTP requests from the client
 - B. the remote GG database is accepting remote database queries (the local GG Public Website in the middle tier depends on the GG database connection being valid and available)

How to Troubleshoot Connection Problems

GRIN-Global is essentially a three-tier system: outermost being the Curator Tool, then the web site, and finally the database. Troubleshooting connection issues can be tricky because each layer must be able to talk successfully to the next deeper one.

