

PowerCampus 9.0.2 GPO-Based Deployment

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Configuring Deployment

Install Orca

Acquire the orca.exe tool (<https://docs.microsoft.com/en-us/windows/desktop/MSI/orca-exe>). You will be directed to install the Windows SDK Components for Windows Installer Developers. When running the SDK installer, uncheck everything but **MSI Tools**.


















Then go to C:\Program Files (x86)\Windows Kits\10\bin\10.0.17134.0\x86 (or similar folder) and run **Orca-x86_en-us.msi**. Orca is now installed on your local machine and can be found in the Start menu.

Create a Share

Create a shared folder somewhere on your network. It must be readable by the **local machine account** of the computers that will be installing PowerCampus (i.e. *Domain Computers*).

Extract Installation Files

Download **PowerCampus902.zip** and extract the contents to the network share. This example screenshot includes shortcuts to the SQL Server 2012 Native Client installers and a manual installation batch file.

 GlobalAssemblyCache	2019-12-12 15:32	File folder	
 ISSetupPrerequisites	2019-12-12 15:32	File folder	
 program files	2019-12-12 15:33	File folder	
 Win	2019-12-12 15:33	File folder	
 PowerCampus Admin Utility.exe	2019-12-06 22:13	Application	122 KB
 PowerCampus902Setup.exe	2019-12-06 22:13	Application	3,782 KB
 Splash.bmp	2019-12-06 21:48	BMP File	940 KB
 Thumbs.db	2019-12-12 15:33	Data Base File	9 KB
 BOGUS.HTM	2019-12-06 21:48	Firefox HTML Document	1 KB
 PCLaunch.html	2019-12-06 21:48	Firefox HTML Document	7 KB
 Bboard.JPG	2019-12-06 21:48	JPG File	4 KB
 902_Prod.mst	2019-12-12 21:04	MST File	20 KB
 sqlIncli_license.mst	2019-12-13 11:02	MST File	20 KB
 sqlIncli x64.msi	2019-12-12 15:40	Shortcut	4 KB
 sqlIncli.msi	2019-12-12 15:41	Shortcut	4 KB
 PC902install.bat	2019-12-12 15:59	Windows Batch File	1 KB
 PowerCampus.msi	2019-12-06 22:13	Windows Installer Package	33,611 KB

Create Transform for PowerCampus.msi

Launch Orca from the Start menu and open **PowerCampus.msi** from the files that you extracted in the previous step.

Select *Transform > New Transform*. You are creating a delta file with your institution-specific parameters.

Select *Property* table and add the following rows (right-click or Ctrl+R). Supply your production values as you would according to *PowerCampus 9.0.2 Installation Guide.pdf* Appendix C.

- USERNAME *Example University*
- COMPANYNAME *Example University*
- DBHEADER *Live*
- DBDSN *campus6*
- DBNAME *campus6*
- DBSERVER *SqlServerName*
- DBUSER *powercampus*
- DBPWD *p@ssw0rd*
- ADDLOCAL *PowerCampus*
- DBINIEXISTS 0

This setting will skip installing transcriptprinter.exe (it's a security risk).

This setting will cause a new database.ini to be created.

Example screenshot:

PowerCampus.msi () - Orca

File Edit Tables Transform Tools View Help

Tables	Property	Value
ISDRMLicense	RebootYesNo	Yes
Icon	ReinstallModeText	omus
IniFile	SCTADMINUTILEXISTS	0
InstallExecuteSequence	SCTCONNECTSTATUS	0
InstallUISequence	SCTDBINEXISTS	0
ListBox	SCTINSTALLLOG	c:\PCInstall.log
ListView	SCTMSISOURCE	msiexec
LockPermissions	SCTPBINIPATH	c:\pb_in\
Media	SHOWLAUNCHPROGRAM	0
ModuleComponents	SecureCustomProperties	DOTNETVERSION11;INSTALLDIR;ISACTIONPROP1;ISFOUNDNEWERPRODUCTVERSION;SUPPORTDIR;DIRPROPERTY1;MERGE...
ModuleSignature	VersionDisplay	9.0.2
MsiAssembly	test	0
MsiAssemblyName	SETUPEXENAME	PowerCampus902Setup.exe
MsiDigitalCertificate	IsPrerequisiteFeatures	PowerCampus
MsiFileHash	USERNAME	Example University
MsiPatchCertificate	COMPANYNAME	Example University
Patch	DBHEADER	Live
ProgId	DBDSN	campus6
Property	DBNAME	campus6
RadioButton	DBSERVER	SqlServerName
RegLocator	DBUSER	powercampus
Registry	DBPWD	P@ssw0rd
RemoveFile	ADDLOCAL	PowerCampus
RemoveRegistry	DBINEXISTS	0
Shortcut		

Tables: 58 Property - 122 rows Property - String[72], Key

If you prefer to leave the system-wide security setting as *Standard* and set *Integrated* on individual machines via database.ini, select the *IniFile* table and set *IniTableKey8* to *Integrated*.

The screenshot shows the Orca MSI editor window titled "PowerCampus.msi () - Orca". The "Tables" pane on the left has "IniFile" selected. The main table displays the following data:

IniFile	FileName	DirPrope...	Section	Key	Value	Act...	Component_
IniTableKey1	database.ini	INSTALLDIR	[DBHEADER]	LogId	[DBUSER]	0	PowerCAMPUS.exe
IniTableKey2	database.ini	INSTALLDIR	[DBHEADER]	Logpass	[DBENCPWD]	0	PowerCAMPUS.exe
IniTableKey3	database.ini	INSTALLDIR	[DBHEADER]	Servename	[DBSERVER]	0	PowerCAMPUS.exe
IniTableKey4	database.ini	INSTALLDIR	[DBHEADER]	Database	[DBNAME]	0	PowerCAMPUS.exe
IniTableKey5	database.ini	INSTALLDIR	[DBHEADER]	DSN	[DBDSN]	0	PowerCAMPUS.exe
IniTableKey6	database.ini	INSTALLDIR	[DBHEADER]	Salt	[DBSALT]	0	PowerCAMPUS.exe
IniTableKey7	database.ini	INSTALLDIR	[DBHEADER]	DBMSPprotect	Y	0	PowerCAMPUS.exe
IniTableKey8	database.ini	INSTALLDIR	[DBHEADER]	Security	Integrated	0	PowerCAMPUS.exe
IniTableKey9	database.ini	INSTALLDIR	Database	db1	[DBHEADER]	0	PowerCAMPUS.exe

The status bar at the bottom indicates "Tables: 70" and "IniFile - 9 rows". The value "Integrated" in the "Value" column for IniTableKey8 is highlighted with a green box.

Select *Transform > Generate Transform* and save your .mst file to your network share.

Modify SQL Server 2012 Native Client MSI's for License Agreement

Unlike the previous version of the SQL Server Native Client (2005), this version requires a parameter during installation that signals your agreement with the license terms.

Within Orca, open one of the two **sqlncli.msi** files located underneath the **ISetupPrerequisites** folder in your installation share.

Under the *Property* table, add the following property and value:

- IACCEPTSQLNCLILICENSETERMS YES

Select *File > Save*.

Repeat this step for the other **sqlIncli.msi** file.

Note: These steps directly modify the MSI files instead of creating transforms. This simple modification to the SQL Server Native Clients saves steps now and when configuring the GPO. However, we prefer transforms for the PowerCampus MSI because we want to have multiple installation configurations, such as test vs production clients. Also, the modifications required are complex and may require multiple attempts to perfect. You will not be able to distinguish original vs modified values within Orca when you modify the MSI file directly.

Create GPO

Create a new GPO object in your Active Directory.

If you wish to configure the GPO in advance of your actual upgrade (recommended), right-click the object and select *GPO Status > All Settings Disabled*. When it's time to go live, you can right-click the GPO again and select *GPO Status > User Configuration Settings Disabled*. This will enable computer settings only, which is recommended for performance when there are no user settings in the GPO.

We configure the GPO in advance and then run the SQL installation steps enable the GPO at night. Users simply reboot their computers in the next day in order to install the new desktop client.

Add Software Packages

64-bit SQL Server 2012 Native Client MSI

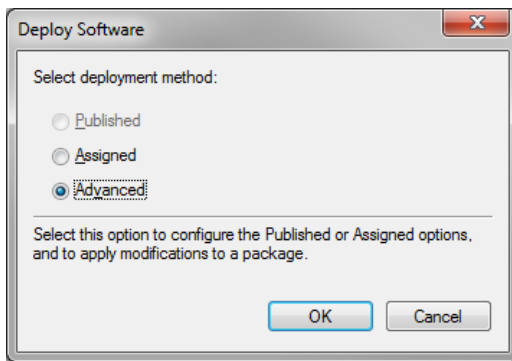
Under *Computer Configuration > Policies > Software Settings > Software installation*, right-click and select *New > Package...*

Within your installation share folder, choose `\ISetupPrerequisites\{63A88B12-4E66-43FC-8869-2360D32FB05D}\sqlIncli.msi`. No advanced settings are necessary. This package will only install on 64-bit machines.

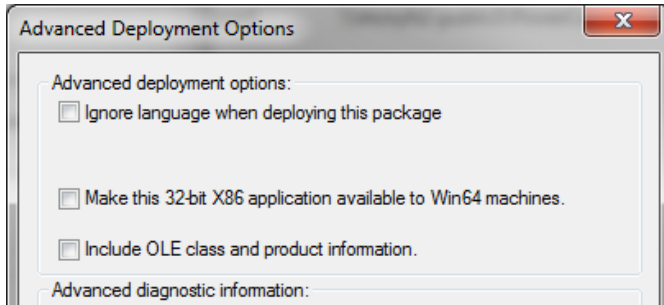
32-bit SQL Server 2012 Native Client MSI

Under *Computer Configuration > Policies > Software Settings > Software installation*, right-click and click *New > Package...*

Within your installation share folder, choose `\ISetupPrerequisites\{125AB5F8-0156-4A9F-B1D1-C2B7E7D82A60}\sqlIncli.msi`. Select the Advanced option.



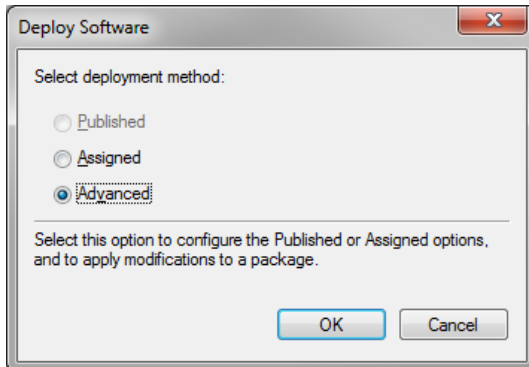
Go to the Deployment tab and click *Advanced*, then deselect “Make this 32-bit X86 application available to Win64 machines.”



PowerCampus MSI

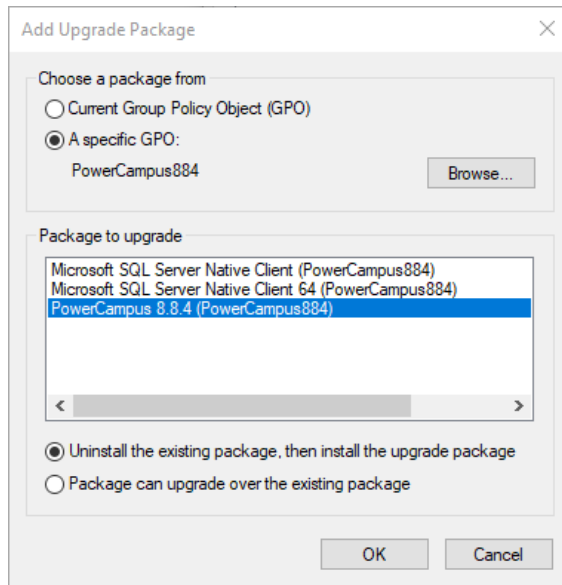
Under *Computer Configuration > Policies > Software Settings > Software installation*, right-click and click *New > Package...*

Within your installation share folder, choose *PowerCampus.msi*. Select the *Advanced* option.



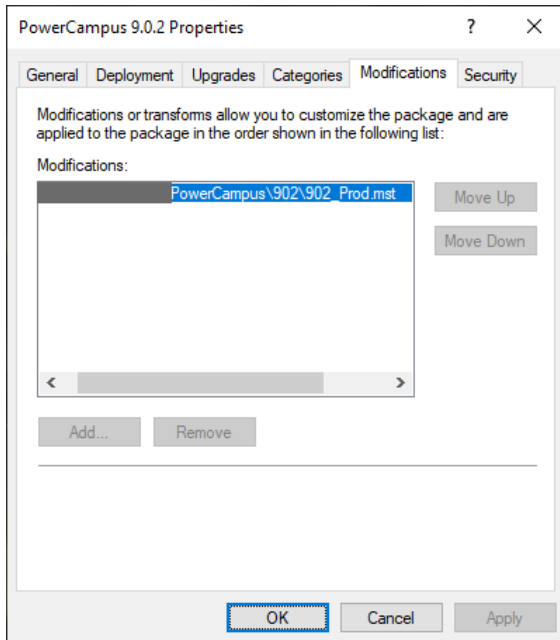
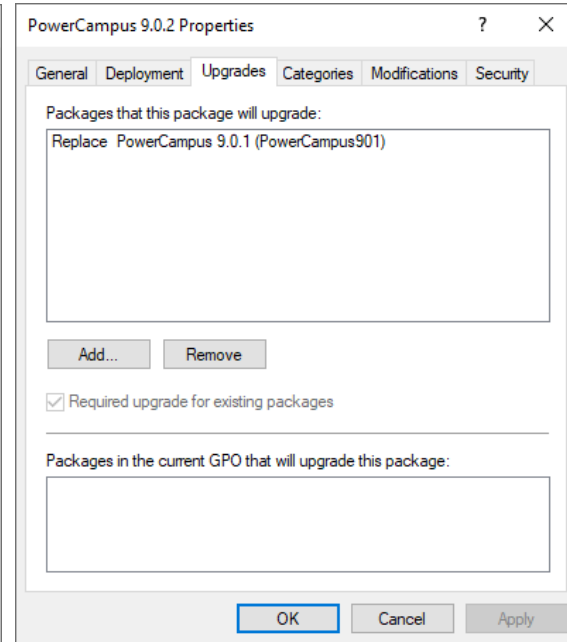
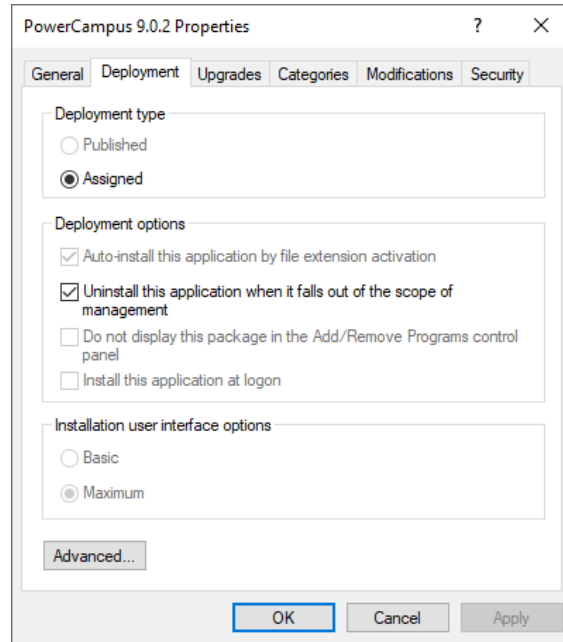
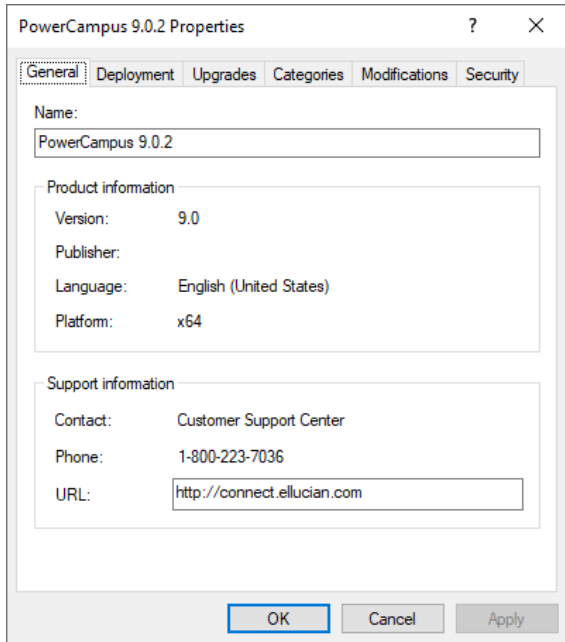
Note: Whatever you set in the *Name* field on the *General* tab will be displayed on the Windows 10 startup splash screen, such as “Installing PowerCampus 9.0.2...”

If you installed your existing version of PowerCampus via GPO, you must set the new package to **uninstall** the old version of PowerCampus. Under the *Upgrades* tab, click *Add...*



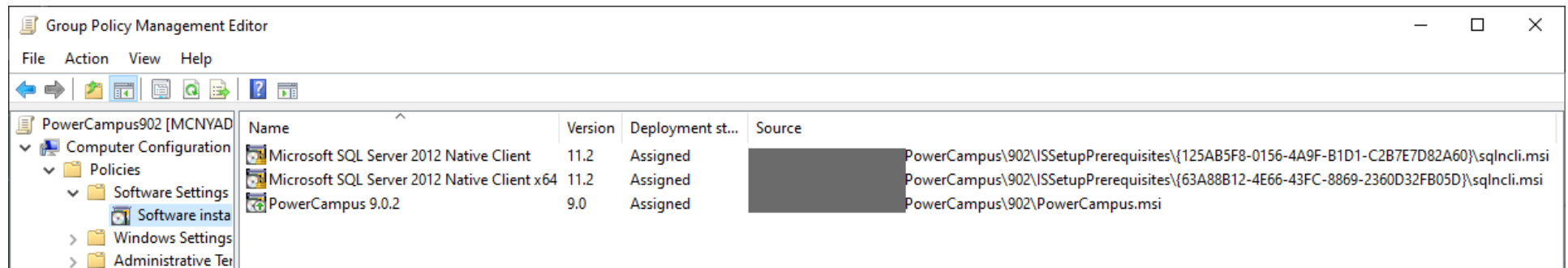
Select *A specific GPO* and browse for your old GPO. Select the old PowerCampus version package and make sure the *Uninstall* option is selected. When you click OK, the Upgrades tab will now have an entry like '**Replace** PowerCampus 8.8.4 (PowerCampus804).'

Example screenshots of relevant tabs:



Under the Modification tab, include your transform (.mst). The *Add...* button will only be available when you first create the software entry, so make sure to add your transform before clicking OK.

Your end result should look something like this:



Add Startup Delay for Network Connectivity

In our environment, we found it was necessary to add a delay to allow the computer to establish network connectivity. This won't force the computer to always wait for the entire delay time, rather, Windows pauses startup and waits for a network connection up to the specified amount of time. 90 seconds is a reasonable default.

This setting is under *Computer Configuration > Policies > Administrative Templates > System > Group Policy > Startup policy processing wait time*

Link GPO

Finally, link the GPO to the OU's containing the machines you wish to install PowerCampus on. The software will install after the machine 1) refreshes group policy and 2) restarts. Group Policy's default refresh interval is 3 hours.

Because of how many OU's we need to link to, we use PowerShell to automate this step:

```
$gpo = Get-GPO -name "PowerCampus902"  
New-GPLink -Guid $gpo.Id -Target "OU=Library Staff PC,OU=Library,OU=Staff and Faculty,DC=example,DC=edu" -Order 1  
New-GPLink -Guid $gpo.Id -Target "OU=Registrar PC,OU=Registrar,OU=Staff and Faculty,DC=example,DC=edu" -Order 1
```

Deployment Troubleshooting

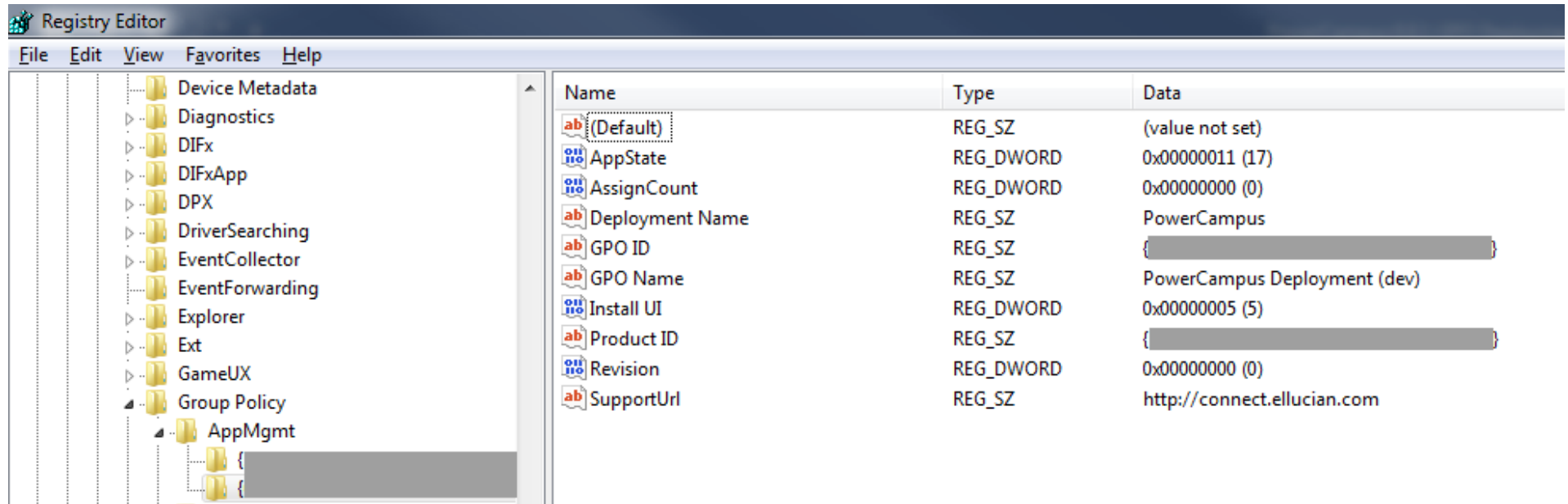
By default, a client machine will refresh GPO every 90 minutes, +/- a random 30 minute offset. You can use **gpupdate** from the command-line to immediately refresh group policy while you are testing.

Look under *Event Viewer > Custom Views > Administrative Events* for clues as to why your GPO may not work.

Trigger Reinstall

You can trigger reinstallation of an application from the GPO itself by right-clicking and choosing *All Tasks > Redeploy application*, but this will reinstall on **all** machines, which is probably not what you want!

Instead, trigger reinstallation on a specific machine by removing some registry keys. Using regedit.exe, browse to:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Group Policy\AppMgmt\



Deleting sub-key(s) under this folder will cause the application(s) to re-install. We created a .reg file to make this a one-click process for helpdesk technicians.

Create a Manual Installation Batch File

Some computers, such as laptops on 802.11x WiFi or computers connected via VPN, will not be able to execute an installation GPO during startup because they are not connected to the network before login. You can easily trigger the same PowerCampus MSI with a batch file, avoiding the setup prompts.

Create a new .bat file with contents like this, using your own installation share path and MSI transform (.mst) filename. The /qb switches do a quiet install with a basic interface. It requires no user interaction but will display progress and error messages.

```
msiexec.exe /i \\myshare\902\PowerCampus.msi /qb TRANSFORMS=\\myshare\902\902_Prod.mst
```

You can also append /L .\installlog.txt if you wish to save a log file for troubleshooting.

```
msiexec.exe /i \\myshare\902\PowerCampus.msi /qb TRANSFORMS=\\myshare\902\902_Prod.mst /L .\installlog.txt
```

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This .bat file must be executed on the target computer as an administrator. Remember to install the appropriate SQL Server 2012 Native Client if it is not already installed.