

Rainbow Desktop app – Per-user MSI deployment using Microsoft Active Directory Group Policy Objects (AD-GPO)

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This document describes how to deploy the Rainbow Desktop application via an MSI file on multiple machines by using Microsoft Active Directory (AD) Group Policy Objects (GPO). The Rainbow software will be assigned **per-user**, i.e. it will be installed when the user logs on. Updates will automatically be performed even if users don't have administration privileges on their machine.

All operations indicated in this document must be performed on a Microsoft AD server. A Microsoft Windows Server 2012 was used when writing this document.

Following two steps are required and described in this document:

- Deployment of Microsoft prerequisites on **computers** (Visual C++ runtime, Visual Studio Tools for Office, .Net framework),
- Deployment of Rainbow Desktop application for the **users**.

1. Deploy or install Microsoft prerequisites via GPO

Three Microsoft packages are required to install and run the Rainbow Desktop application. Following packages must be deployed on the computers:

- Visual C++ 2015 runtime
- Visual Studio Tools for Office 2010 (required for the Microsoft Outlook add-in)
- .Net Framework 4.5

Note: .Net Framework 4.5 is installed by default when using a computer running Microsoft Windows 10.

Even if above Microsoft packages all come as .exe files, they can be deployed using AD GPO (Computer configuration).

Note: All resources deployed with GPO must be configured using UNC (Universal Naming Convention) paths (in the form [\\Server\share\file](#)).

1.1. Distribution point

Refer to section 2.1 *Create a distribution point* for details about the creation and configuration of a distribution point on the publishing server. This distribution point can be used for all GPO deployments.

1.2. Deployment of Visual Studio Tools for Office 2010

Visual Studio Tools for Office (VSTO) 2010 comes as a .exe file. An MSI file is needed for a deployment via AD GPO. Find below a procedure to get an MSI file from the .exe file:

- Extract VSTO setup with the following command: **vstor_redist /x:<directory>**.
- Go to **<directory>\vstor_40**.
- Extract **vstor40_x64.exe** and/or **vstor40_x86.exe** with e.g. the 7-zip application.
- Copy the directory extracted (and containing the MSI) to the distribution point.
- Create or edit a Policy (see also 2.2 *Create a Group Policy Object*) and add the MSI in the **Computer Configuration** section - see below **Figure 1: Adding VSTO MSI to the policy (Computer Configuration)**. Use a UNC path.
- Set the required scope for the policy.

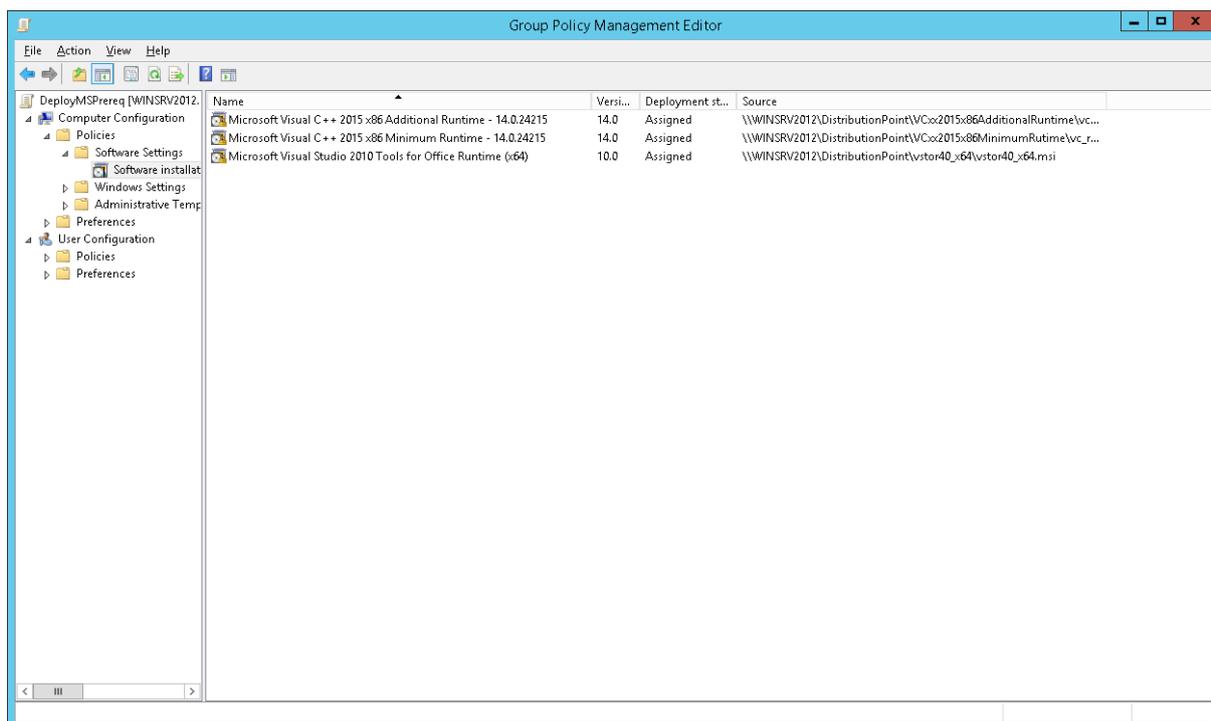


Figure 1: Adding VSTO MSI to the policy (Computer Configuration)

1.3. Deployment of Visual C++ 2015 runtime

Visual C++ 2015 runtime also comes as a .exe file. Find below a procedure to get an MSI file from the .exe file:

- Install Visual C++ 2015 runtime on a machine.
- With **regedit** registry editor, go to the key **HKLM\Software\Wow6432Node\Microsoft\Windows\CurrentVersion\Uninstall** and search for an entry with a **DisplayName** property containing “**Microsoft Visual C++ 2015 x86 Minimum Runtime – 14.0.24125**” (see below **Figure 2: Microsoft Visual C++ 2015 x86 Minimum Runtime registry entry**).
- In the same entry, you should see the **InstallSource** property. Go to the specified directory and copy the .msi and the .cab files in a sub-directory of the distribution point (see **Figure 3: Minimum runtime directory content**).
- Redo above operations by searching for an entry with a **DisplayName** property containing “**Microsoft Visual C++ 2015 x86 Additional Runtime – 14.0.24125**” (see **Figure 4: Microsoft Visual C++ 2015 x86 Additional Runtime registry entry**).
- Go to the directory specified in the **InstallSource** property, and copy the .cab and .msi files in a sub-directory of the distribution point (see **Figure 5: Additional runtime directory content**).

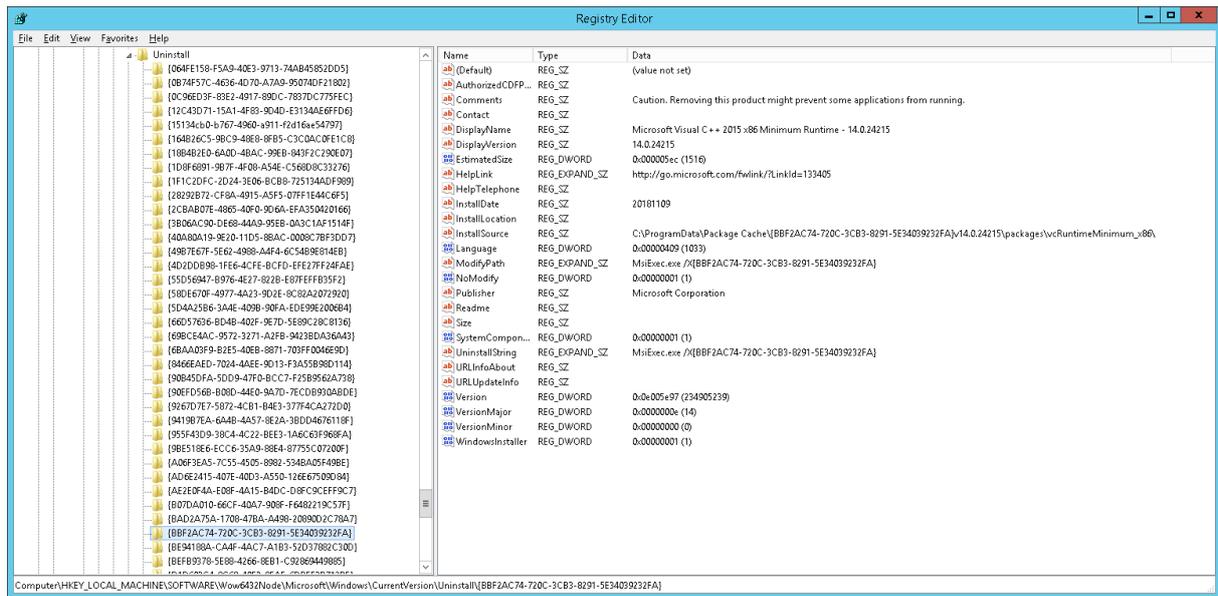


Figure 2: Microsoft Visual C++ 2015 x86 Minimum Runtime registry entry

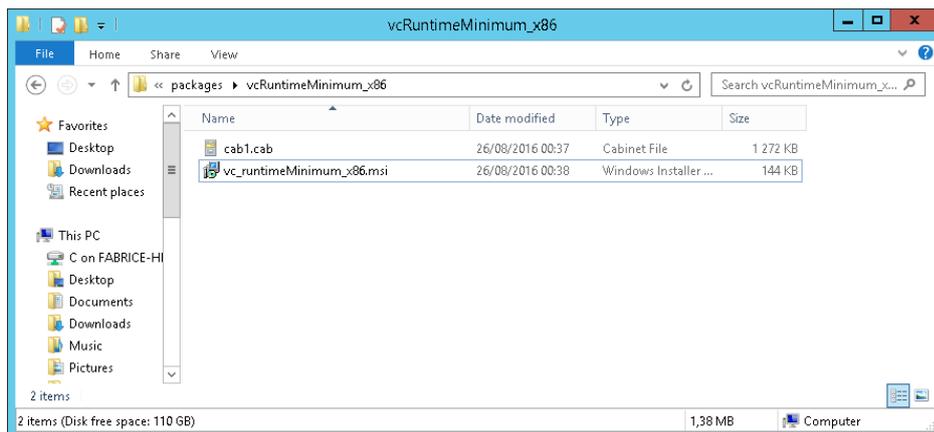


Figure 3: Minimum runtime directory content

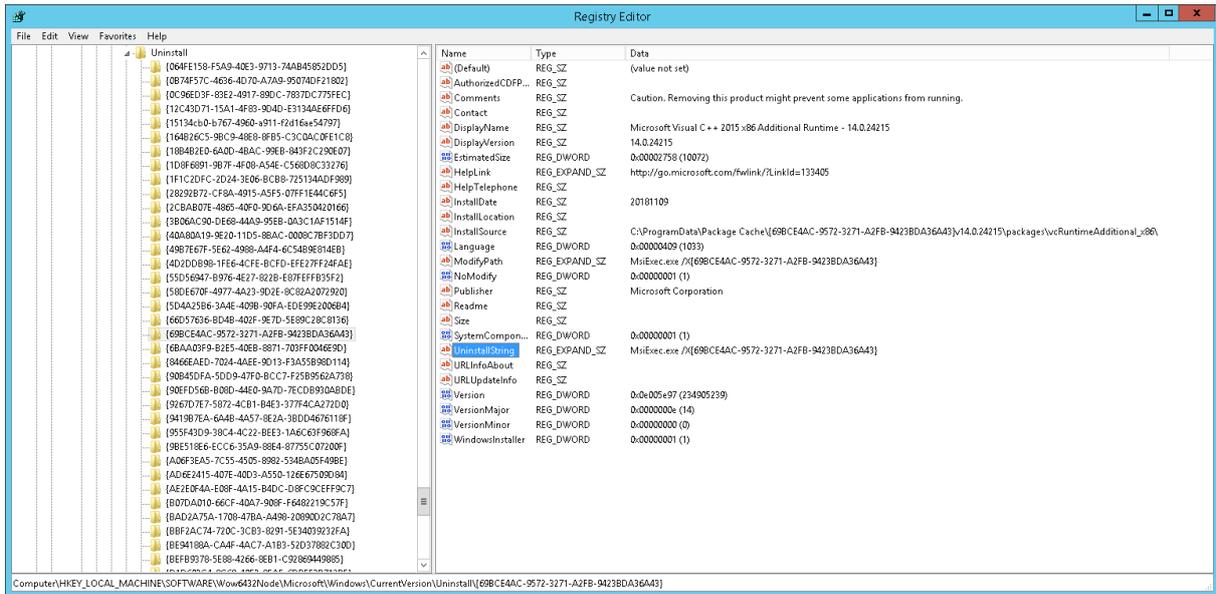


Figure 4: Microsoft Visual C++ 2015 x86 Additional Runtime registry entry

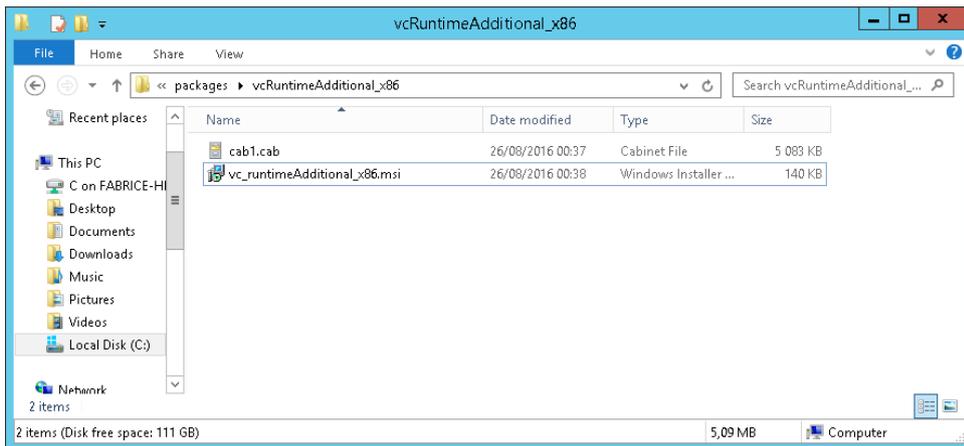


Figure 5: Additional runtime directory content

You must now create a Transform file (.MST) to add a property ADDEPLOY=1 to the MSI, otherwise the MSI cannot be installed. To do this, download (<https://docs.microsoft.com/en-us/windows/desktop/msi/orca-exe>) the Orca utility (Orca is a database table editor for creating and editing Windows Installer packages) and follow the procedure below:

- Open the file **vc_runtimeMinimum_x86.msi** with Orca (see **Figure 6: Opening VC++ runtime msi with Orca**).
- Click **Transform/New Transform**.
- In the **"Property"** table, add a property **"ADDEPLOY"** with value **"1"** in the Property table using menu **Tables/Add Row** (see **Figure 7: Adding the ADDEPLOY property**).
- Click **Transform/Generate Transform** and save the file as **addeploy.mst**.
- Do above operations for the file **vc_runtimeAdditional_x86.msi**. There will be then one **addeploy.mst** file for each MSI in the corresponding directories.

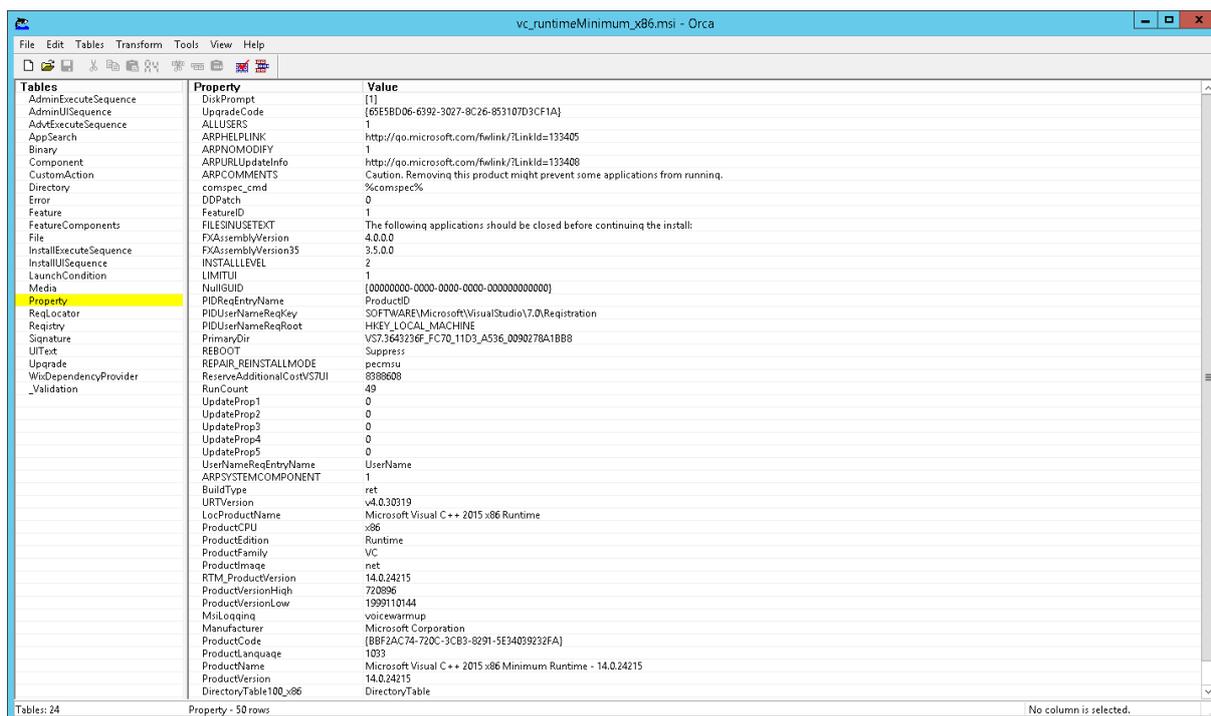


Figure 6: Opening VC++ runtime msi with Orca

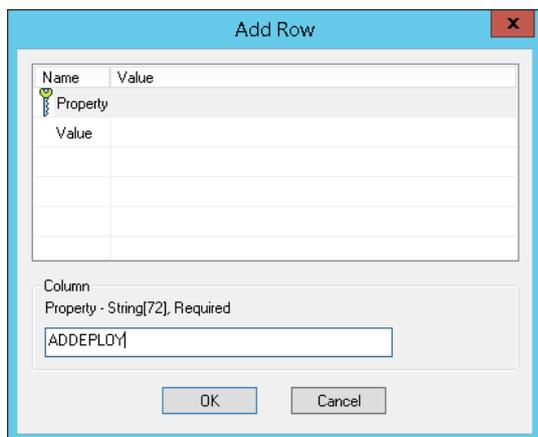


Figure 7: Adding the ADDEPLOY property

Using GPO, add now the two Visual C++ runtime MSI files to the policy. For each of them:

- Select the **“Advanced”** deployment method (see **Figure 8: Deployment method for Visual C++ runtime msi**).
- In the **“Modifications”** tab, add the corresponding **addeploy.mst** file (see **Figure 9: Adding the modifications to the package**). Use an UNC path.

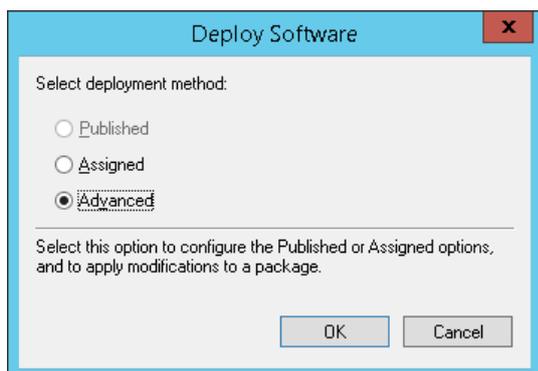


Figure 8: Deployment method for Visual C++ runtime msi

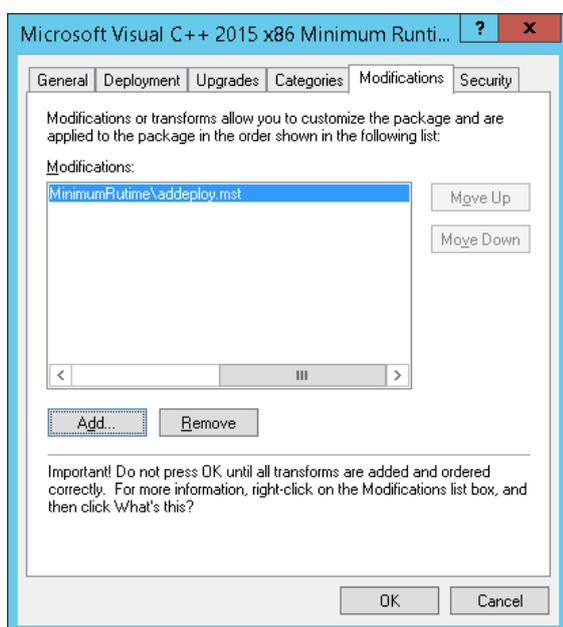


Figure 9: Adding the modifications to the package

1.4. Deployment of .Net 4.5 Framework

The .Net framework setup come as a .exe file. Recommended procedure for deploying the .Net framework via GPO is using a startup script.

Below script is an example that checks if the framework is already installed. The script can be saved along the .Net setup in the distribution point folder.

```
@echo off
reg query
"HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\ .NETFramework\v4.0.30319\SKUs\ .NETFramework,version=v4.5"
if %errorlevel%==1 goto installnet
if %errorlevel%==0 goto exit
:installnet
start /wait
"\\domain\netlogon\bitlocker\dotnetfx45_full_x86_x64.exe /ceipconsent
/norestart /q"
:exit
exit
```

In a Group Policy, add the startup script in **Computer Configuration/Windows Settings/Scripts/Startup** (see below **Figure 10: Group Policy Startup script**). Double-click on **Startup** and add the script using a UNC path.

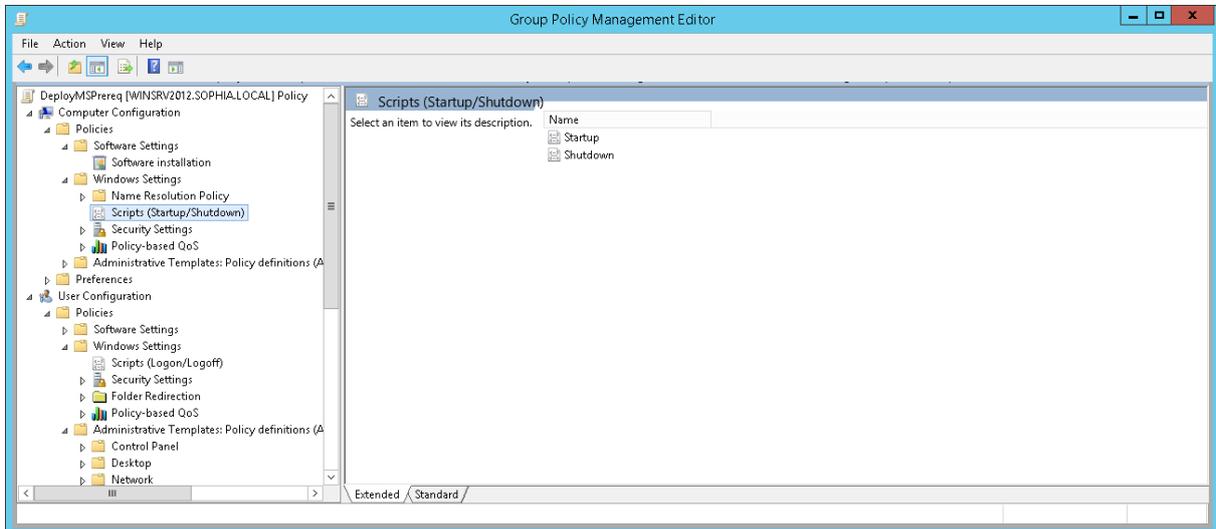


Figure 10: Group Policy Startup script

2. Rainbow Desktop app MSI deployment

2.1. Create a distribution point

The first step for deploying an MSI file through GPO is to create a distribution point on the publishing server. This can be done by following the steps below:

- Log on to the server as an Administrator user.
- Create a shared network folder (this folder will contain the MSI package).
- Set permissions on this folder to allow the access to the distribution package: add **“Authenticated Users”** with **Read & execute, Read and List folder contents** permissions (see **Figure 11: Distribution point folder permissions**).
- Set sharing permissions.
- Copy the MSI in the shared folder.

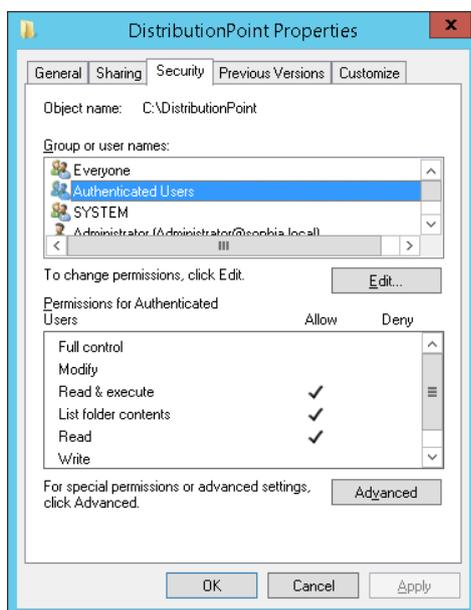


Figure 11: Distribution point folder permissions

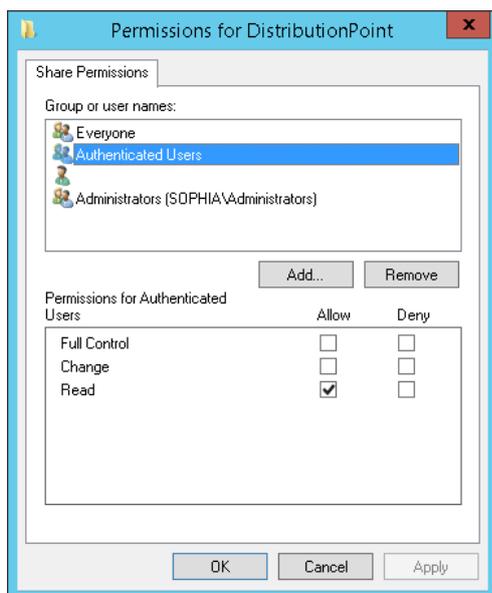


Figure 12: Sharing permissions

2.2. Create a Group Policy Object

- Start the **Group Policy Management** program from Windows **Start** menu/**Administrative Tools**.
- Right click the domain and select **Create a GPO in this domain, and Link it here**.
- Type a name for this new policy and press Enter.
- Set the scope for the policy.

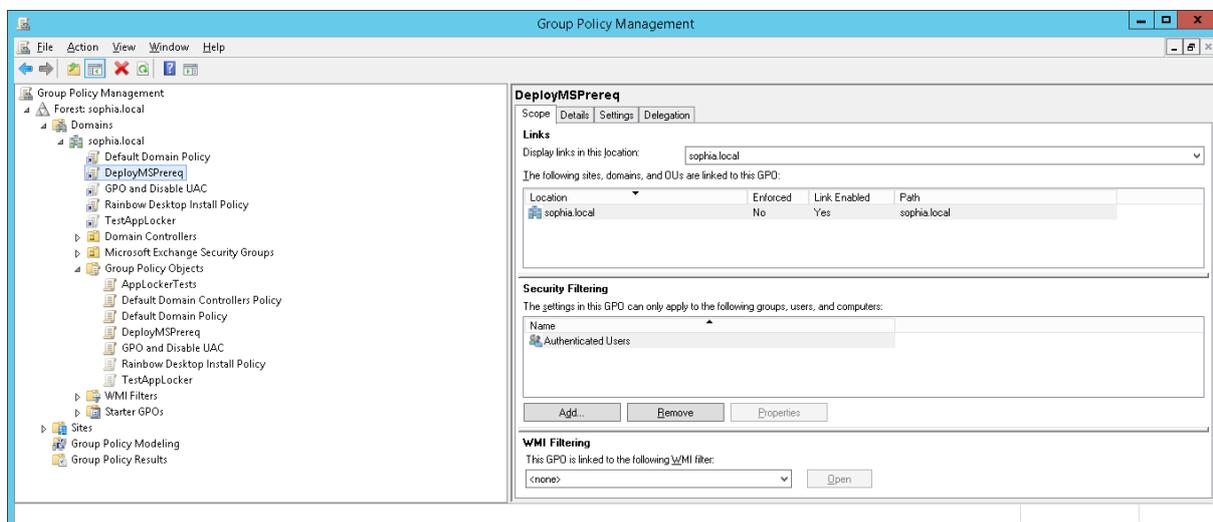


Figure 13: Group Policy Management

2.3. Assign the MSI package

- From the Group Policy Management window, right-click the newly created policy and select **Edit**.
- Under **User Configuration**, expand **Software Settings**.
- Right-click **Software installation**, select **New** and then click **Package**.
- In the **Open** dialog box, type the full **Universal Naming Convention (UNC)** path of the Rainbow Desktop MSI file (standard local path will not work, always use the shared folder path).

 **WARNING!** Do not use the Browse button to access the location. Make sure that you use the UNC path of the shared installer package.

- Click **Open**.
- Click **Assigned**, and then validate with **OK**. The package is displayed in the right-pane of the **Group Policy** window (see **Error! Reference source not found.**).
- When user logs in, the managed software package is automatically installed.

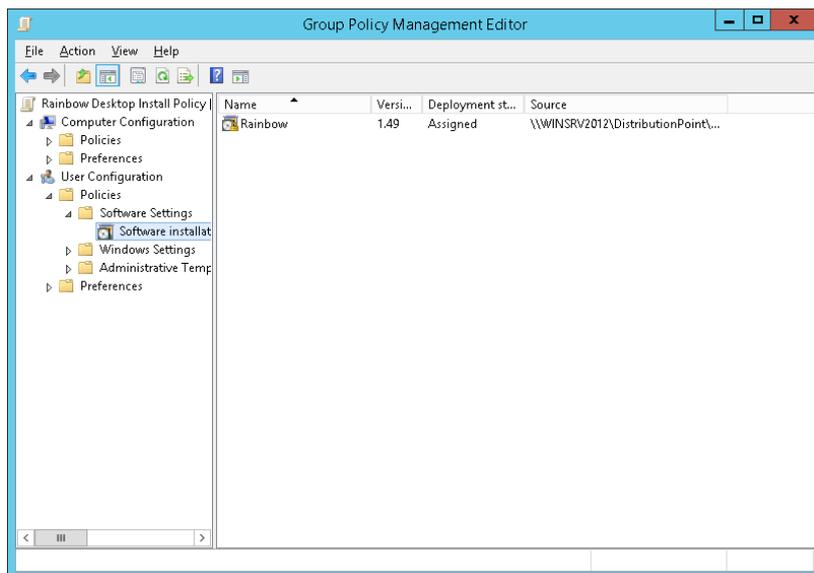


Figure 14: Example of Rainbow Desktop deployment policy

2.4. Remove the package

To remove a published or assigned package, follow these steps:

- Start the Group Policy Management application (from **Start/Administrative Tools**).
- Right-click the Group Policy Object that you used to deploy the package, and then click **Edit**.
- Expand the **Software Settings** container that contains the software installation item that you used to deploy the package.
- Click the software installation container that contains the package.
- In the right-pane of the **Group Policy** window, right-click the program, select **All Tasks**, and then click **Remove**.
- Do one of the following:
 - o Click **Immediately uninstall the software from users and computers** and then click **OK**.
 - o Click **Allow users to continue to use the software but prevent new installations** and then click **OK**.

3. Troubleshooting

If the software deployed with GPO is not installed, use following troubleshooting tips.

3.1. Permissions

Check the distribution point folder permissions and sharing permissions.

Check also that the distribution point sharing is accessible from a user machine.

Check the scope of the policy.

3.2. Force client policy update

It can be useful to force the update of the policy to be sure it is effective. To do so, and from a user machine, launch a **cmd** window and type “**gpupdate /force**” (the command can propose to reboot the machine or logout the user to make a new policy effective).

3.3. Check the policy status on a user machine

- On a user machine, from the **Start** menu, type “**rsop.msc**”. Right-click and select “**Run as administrator**” and enter administrator credentials.
- In the resulting window (see below **Figure 15: Client Resultant Set of Policy**), and in case of issues, information can be obtained by right-clicking **Computer Configuration** or **User Configuration**: select **Properties** and go to the **Error Information** tab (refer to **Figure 16: Resultant set of Policy, error information**). Error information can help to detect a permission issue with the distribution point share for example.

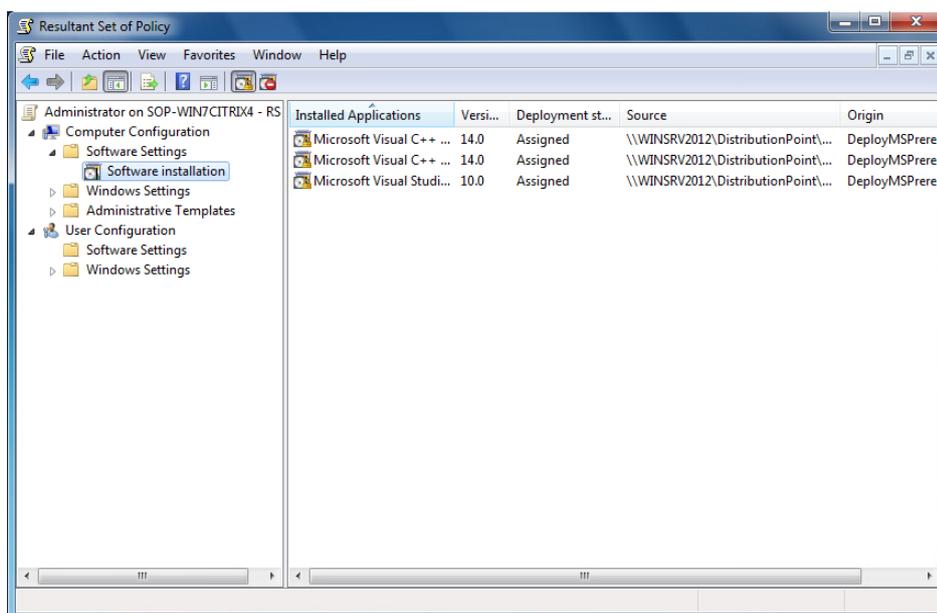


Figure 15: Client Resultant Set of Policy

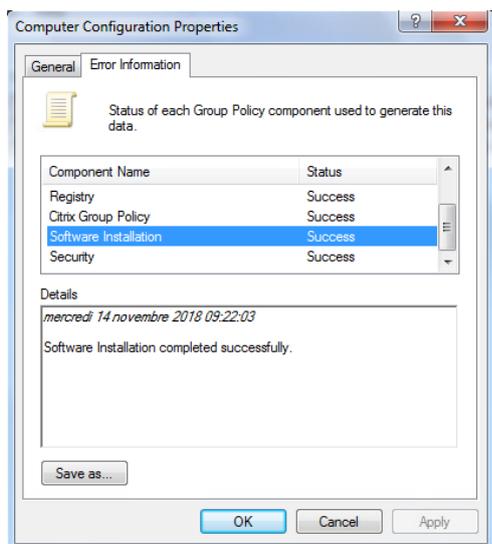


Figure 16: Resultant set of Policy, error information

3.4. Activate MSI logging

It can be useful to activate the MSI logging on the user machine. Run **regedit.exe** and create the entry **HKLM\Software\Policies\Microsoft\Windows\Installer** (see **Figure 17: Activating msi logging on client**) with following two keys:

- **Logging** (REG_SZ) with value “voicewarmup”
- **Debug** (REG_DWORD) with value “7”

Logs will be available in **C:\Windows\Temp** (files **Msi*.log**).

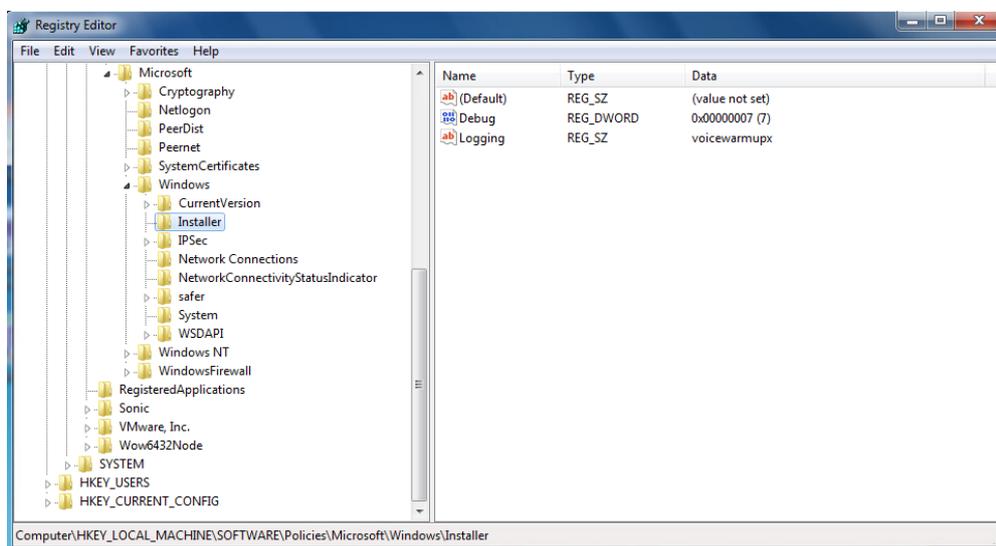


Figure 17: Activating msi logging on client

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