# 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 <u>computers</u> (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 <u>\\Server\share\file</u>).

#### 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.



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DeployMSPrereq [WINSRV2012.	Name	Versi	Deployment st	Source	
4 👰 Computer Configuration	Microsoft Visual C++ 2015 x86 Additional Runtime - 14.0.24215	14.0	Assigned	$\label{eq:winsky2012} WINSKy2012\DistributionPoint\VCxx2015x86AdditionalRuntime\vc$	
⊿ Policies	Microsoft Visual C++ 2015 x86 Minimum Runtime - 14.0.24215	14.0	Assigned	\\WINSRV2012\DistributionPoint\VCxx2015x86MinimumRutime\vc_r	
⊿ Software Settings	Microsoft Visual Studio 2010 Tools for Office Runtime (x64)	10.0	Assigned	\\WINSRV2012\DistributionPoint\vstor40_x64\vstor40_x64.msi	
Mindows Settings					
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🔺 🕵 User Configuration					
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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**).



al de la companya de		Registry	Editor 📃 🗖 🗙
Eile Edit View Favorites Help			
🖬 📲 Uninstall 📃 🔿	Name	Type	Data
	(Default)	REG_SZ	(value not set)
	AuthorizedCDFP	REG_SZ	
	ab Comments	REG SZ	Caution. Removing this product might prevent some applications from running.
	ab Contact	REG_SZ	
	<b>ab</b> DisplayName	REG_SZ	Microsoft Visual C + + 2015 x86 Minimum Runtime - 14.0.24215
	<b>ab</b> DisplayVersion	REG_SZ	14.0.24215
	38 Estimated Size	REG DWORD	0x00005ec (1516)
	HelpLink	REG EXPAND SZ	http://go.microsoft.com/fwlink/?LinkId=133405
{1F1C2DFC-2D24-3E06-8C88-725134ADF989}	HelpTelephone	REG SZ	
28292872-CF8A-4915-A5F5-07FF1E44C6F5	ab InstallDate	REG SZ	20181109
(ZCBABU/E-4803-40F0-900A-EFA330420106)	ab Install Location	REG SZ	
	ab InstallSource	REG SZ	C:\ProgramData\Package Cache\{BBF2AC74-720C-3CB3-8291-5E34039232FA}v14.0.24215\packages\vcRuntimeMinimum x86\
[40A00A19-9620-11D3-00AC-0000C78F3DD7]	38 Language	REG DWORD	0-00000409 (1033)
	ab ModifyPath	REG EXPAND SZ	MsiEver.ever/XIRBE2AC74-720C-3CB3-8291-5E34039232EA3
155D56047.8076.4627.0228.68766668231	11 NoModify	REG DWORD	D-0000001(1)
[5505004-0570427-0228-0071-05512] [5805670F-4977-4023-902F-808262072920]	ab Publisher	REG SZ	Microsoft Comparison
[5D4A25B6-3A4E-409B-90EA-EDE99E200EB4]	ab Readme	REG SZ	
166D57636-8D48-402E-9E7D-5E89C28C8136	ab Size	REG SZ	
	SustemCompon	REG DWORD	D-0000001 (1)
6BAA03F9-B2E5-40EB-8871-703FF0046E9D}	ab Uninstall String	REG EXPAND SZ	Million eve ///IRRF2AC74-720C-3CR3-8291-5534039232EA3
	ab URI InfoAhout	REG SZ	
490B45DFA-5DD9-47F0-BCC7-F25B9562A738	ab URI UndateInfo	REG SZ	
	Version	REG_DWORD	D-/1+015-027 (234005230)
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BBF2AC74-720C-3CB3-8291-5E34039232FA}			
[BE94188A-CA4F-4AC7-A1B3-52D37882C30D]			
(BEFB9378-5E88-4266-8EB1-C92869449885)			
Computer\HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Microsoft\Windows\CurrentVersion	\Uninstall\{BBF2AC74-7	20C-3CB3-8291-5E340	99232FA)

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

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File Home Shar	e View				~ <b>(</b> )		
😌 💿 🔻 🖡 🖉	🛞 🔄 🔹 🕇 🕌 « packages ) vcRuntimeMinimum_x86 v 🖒 🛛 Search vcRuntimeMinimum_x 🔎						
☆ Favorites	Name	Date modified	Туре	Size			
E Desktop	📓 cab1.cab	26/08/2016 00:37	Cabinet File	1 272 KB			
\rm Downloads 🛛 🗏	😽 vc_runtimeMinimum_x86.msi	26/08/2016 00:38	Windows Installer	144 KB			
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This PC C on FABRICE-HI Desktop Documents Documents Downloads Music Pictures							
2 items							
2 items (Disk free space: 110	GB)		1,	38 MB 🏾 👰	Computer		

Figure 3: Minimum runtime directory content



ġ.		Registry	Editor
File Edit View Favorites Help			
	Name (Default) ab Authorized CDER	Type REG_SZ	Data (value not set)
(0C96ED3F-83E2-4917-89DC-7337DC775FEC) (12(4307)-1551-4483-9040-5334AE6FED6) (12(4307)-1551-4483-9040-5334AE6FED6)	Comments	REG_SZ REG_SZ	Caution. Removing this product might prevent some applications from running.
	🐏 DisplayName 🐽 DisplayVersion 職 EstimatedSize	REG_SZ REG_SZ REG_DWORD	Microsoft Visual C ++ 2015 x86 Additional Runtime - 14.0.24215 14.0.24215 0.00002759 (10072)
(TFIC200+C2024-260-C80-7251244C95499) (EFIC202+C2024-260-C80-7251244C9599) (28292B72-CF84-4915-A5F5-07FF1E44C6F5)	ab HelpLink ab HelpTelephone ab InstallDate	REG_EXPAND_SZ REG_SZ REG_SZ	http://go.microsoft.com/fwlink/?Linkld=133405
	InstallLocation     InstallSource	REG_SZ REG_SZ	C:\ProgramDat\Package Cache\(6980EE4AC-9572-3271-A2F8-94238DA36A43)v14.0.24215\package+\vcRuntimeAdditional_x89\
	₩ Language ➡ ModifyPath ₩ NoModify	REG_DWORD REG_EXPAND_SZ REG_DWORD	о.d0000497 (133) MilEvec.eve /A(6906CE4AC-9572-3271-A2FB-94238DA36A43} 0.d0000001 (1)
	ab Publisher ab Readme ab Size	REG_SZ REG_SZ REG_SZ	Microsoft Corporation
(69BCE4AC-9572-3271-A2FB-9423BDA36A43) (6BAA03F9-B2E3-40EB-8871-703FF0046E90) (24F6FA-07742-A47E-0713-23A55F0046E90)	BystemCompon	REG_DWORD REG_EXPAND_SZ	0x0000001 (1) MsiExec.exe /K[698CE4AC-9572-3271-A2FB-94238DA36A43}
[ 9045DFA-50D-9-47F0-8CC7-F25B55CA738] [ 904FD568-8080-44E0-8A70-75C0B30A8DE]	URLINFOADOUT URLUpdateInfo BVersion	REG_SZ REG_DWORD	Dr.Ox005e97 (234005239)
	<ul> <li>VersionMajor</li> <li>VersionMinor</li> <li>WindowsInstaller</li> </ul>	REG_DWORD REG_DWORD REG_DWORD	0:0000000 (14) 0:0000000 (0) 0:0000001 (1)
- → (98E518E6-ECC6-35A0-98E4-97755C07200F) - → (A06F38A5-7C55-4505-9882-534BA05F498E) - → (A06E2415-407E-4005-A550-126E67590984)		120_011010	
[BBF7AC74-720C-3CB3-8291-5E34039232FA]     [BBF9180A-CAF+Ac7-Ac183-5203788C2300]     [BEF93978-5E84-266-68E1-C29268A49885]     [BF9378-78-788-786-786185]			
Computer\HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Microsoft\Windows\CurrentVersion\L	Ininstall\[69BCE4AC-9	672-3271-A2FB-9423E	DA36A43}

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

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File Home Share	View				~ <b>(</b> )
🔄 🍥 🔻 🕇 <u>)</u> « pac	:kages → vcRuntimeAdditional_x86		~ ¢	Search vcRunti	meAdditional 🔎
📃 Recent places \land	Name	Date modified	Туре	Size	
	📑 cab1.cab	26/08/2016 00:37	Cabinet File	5 083 KB	
P This PC	🔀 vc_runtimeAdditional_x86.msi	26/08/2016 00:38	Windows Installer	. 140 KB	
E Desktop					
Documents					
〕 Downloads					
🚺 Music					
崖 Pictures					
📔 Videos					
🏜 Local Disk (C:)					
🗣 Network 🎽					
2 items (Disk free space: 111 GE	))		5,09	MB 🌉	Computer

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 (<u>https://docs.microsoft.com/en-us/windows/desktop/msi/orca-exe</u>) 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.

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2		vc_runtimeMinimum_x86.msi - Orca	_ 🗆 X
File Edit Tables Transform	Tools View Help		
	* •= 🖻 🛒 🏪		
Tables	Property	Value	
AdminExecuteSequence	DiskPrompt	11	
AdminUlSequence	UpgradeCode	{65E5BD06-6392-3027-8C26-853107D3CF1A}	
AdvtExecuteSequence	ALLUSERS	1	
AppSearch	ARPHELPLINK	http://go.microsoft.com/fwlink/?Linkld=133405	
Binary	ARPNOMODIEY	1	
Component	ABPLIBLLIndateInfo	http://ap.microsoft.com/fivlink/?LinkId=133408	
CustomAction	ARPCOMMENTS	Caution. Removing this product might prevent some applications from running.	
Directory	comsnec cmd	%comster%	
Error	DDPatch	0	
Eesture	FeatureID	1	
FeatureComponents	FILESINUSETEXT	The following applications should be closed before continuing the install:	
File	EXAssemble/Version		
InstallEvecuteSequence	EXAssemblyVersion35	35.00	
Install/ISequence	INISTALLIEVEL	2	
LaunchCondition	LIMITU	1	
Media	NullGUID	100000000,0000,0000,0000,0000000	
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Property	DIDUkonlamoRoaKau	Productor SOETMORENAGEnerge(N) (curs)Studie) 7 (N Registration	
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Signature	Provisional Principle Provision	INET_LOGAL_WAGDINE	
Jurature	PrimaryDir	V3.3643230F_FC/U_1103_A336_0090276A1886	
Unext		Suppress	
Upgrade	REPAIR_REINSTALLWODE	pecmsu	
WixDependencyProvider	ReserveAdditionalCostVS/UI	83898048	=
_Validation	RunCount	49	
	UpdatePropI	0	
	UpdateProp2	0	
	UpdateProp3	0	
	UpdateProp4	0	
	UpdateProp5	0	
	UserNameReqEntryName	UserName	
	ARPSYSTEMCOMPONENT	1	
	BuildType	ret	
	URTVersion	v4.0,30319	
	LocProductName	Microsoft Visual C++ 2015 x86 Runtime	
	ProductCPU	×86	
	ProductEdition	Runtime	
	ProductFamily	VC	
	Productimage	net	
	RTM_ProductVersion	14.0.24215	
	ProductVersionHigh	720896	
	ProductVersionLow	1999110144	
	MsiLogging	voicewarmup	
	Manufacturer	Microsoft Corporation	
	ProductCode	{BBF2AC74-720C-3CB3-8291-5E34039232FA}	
	ProductLanguage	1033	
	ProductName	Microsoft Visual C++ 2015 x86 Minimum Runtime - 14.0.24215	
	ProductVersion	14.0.24215	
	DirectoryTable100_x86	DirectoryTable	~
Tabler: 24	Property - 50 rowr		No column is relacted
Tables, 24	Property - Serows		no columno selected.

Figure 6: Opening VC++ runtime msi with Orca

	Add Row
Name	Value
Property	,
Value	
- Column	
Property -	String[72], Required
ADDEPL	oy
	OK Cancel

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.



Deploy Software
Select deployment method:
○ <u>P</u> ublished
○ Assigned
Advanced
Select this option to configure the Published or Assigned options, and to apply modifications to a package.
OK Cancel

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

Microsoft Visual C++ 2015 x86 Minimum Runti ? 🗴
General Deployment Upgrades Categories Modifications Security
Modifications or transforms allow you to customize the package and are applied to the package in the order shown in the following list:
Modifications:
MinimumRutime\addeploy.mst Move Up
Mo <u>v</u> e Down
Add <u>R</u> emove
correctly. For more information, right-click on the Modifications list box, and
then click What's this?
OK Cancel

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\.NETFr
amework,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
```

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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

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## 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.

👃 DistributionPoint Properties 🛛 🗙
General Sharing Security Previous Versions Customize
Object name: C:\DistributionPoint
Group or user names:
🍇 Everyone 🧄
Authenticated Users
SYSTEM
Administrator (Administrator@sonbia.local)
To change permissions, click Edit. <u>E</u> dit
Permissions for Authenticated Users Allow Deny
Full control
Modify
Read & execute 🗸 📃
List folder contents
Read 🗸
Write 🗸
For special permissions or advanced settings, <u>Advanced</u> click Advanced.
OK Cancel Apply

Figure 11: Distribution point folder permissions

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Permissions for D	)istributionPc	bint	x				
Share Permissions							
Group or user names:							
& Everyone							
Authenticated Users							
Administrators (SOPHIA\Admi	inistrators)						
	Add	Remove					
Permissions for Authenticated Users	Allow	Deny					
Full Control							
Change							
Read	✓						
ОК	Cancel	Apply	,				

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.

Group Policy Management				
📓 Ele Action _ Yiew Window Help				
🗢 🔿 📶 🗶 🖸 🔢 🖬				
Group Policy Management Group Policy Management Group Policy Management Group Policy Modeling Group Policy Results Group Policy Results Group Policy Results Group Policy Results Group Policy Results Group Policy Results	DeployMSPrereq           Scope         Details         Settings         Delegation           Links         Links in this location:         sophia.local         Sophia.local           The following sites, domains, and OUs are linked to this GPO:         Location         Enviced         Link Enabled         Path           Location         The colouring sites, domains, and OUs are linked to this GPO:         No         Yes         sophia.local	<b></b>		
	Security Filtering The gettings in this GPO can only apply to the following groups, users, and computers: Name Authenticated Users			
	Add <u>B</u> emove <u>Properties</u> WMI Filtering This GPO is linked to the following <u>W</u> MI filter: <none> ✓ □pen</none>			

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 <u>Universal Naming Convention (UNC)</u> path of the Rainbow Desktop MSI file (standard local path will not work, <u>always use the shared folder path</u>).

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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.

🧾 Group Policy Management Editor 📃 🗖 🗙							
<u>File Action View H</u> elp							
Rainbow Desktop Install Policy   A Scomputer Configuration	Name	Versi	Deployment st Assigned	Source			
Policies	Man Dow	1.45	Assigned	((windski)2012(DistributionPoint)			
Preferences A set User Configuration							
⊿ 🧰 Policies							
⊿ Software Settings Installat							
Windows Settings							
Administrative Temp Preferences							
< III >							
	1						

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:
  - Click **Immediately uninstall the software from users and computers** and then click **OK**.
  - 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.

S Resultant Set of Policy					- <b>-</b> ×	
S File Action View Favorites Windo	ow Help				- 8 ×	
<ul> <li>Administrator on SOP-WIN7CITRIX4 - RS</li> <li>Computer Configuration</li> <li>Software settings</li> <li>Software installation</li> <li>Windows Settings</li> <li>Administrative Templates</li> <li>User Configuration</li> <li>Software Settings</li> <li>Software Settings</li> <li>Windows Settings</li> <li>Windows Settings</li> </ul>	Installed Applications	Versi 14.0 14.0 10.0	Deployment st Assigned Assigned Assigned	Source \\WINSRV2012\DistributionPoint\ \\WINSRV2012\DistributionPoint\	Origin DeployMSPrere DeployMSPrere DeployMSPrere	
< >	•					

Figure 15: Client Resultant Set of Policy



omputer Configuration Properties		? ×
General Error Information		
Status of each Group Polic data.	y component used to ger	nerate this
Component Name	Status	
Registry	Success	
Citrix Group Policy	Success	-
Software Installation	Success	=
Security	Success	*
mercredi 14 novembre 2018 09:22:03 Software Installation completed succes	sfully.	
Save as		
ОК	Cancel	Apply

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).

Registry Editor						
File Edit View Favorites Help						
Microsoft     D-2 Cryptography     PeerDist     Peer		Name (Default) Debug Logging	Type REG_SZ REG_DWORD REG_SZ	Data (value not set) 0x0000007 (7) voicewarmupx		
Computer\HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\Installer						

Figure 17: Activating msi logging on client

## **END OF DOCUMENT**

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