

# Systemcenter Usergroup Rhein-Main



neo42

RISCONSULTING

Crankdesk

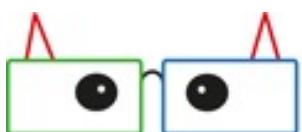
# PSADK

THE POWERSHELL APP DEPLOYMENT TOOLKIT

# SINISA SOKOLIC

CHIEF INFORMATION OFFICER

- Citrix XenApp und XenDesktop
- SCCM
- Automation
- 17 years in the field



[www.sinisasokolic.com](http://www.sinisasokolic.com)



AUTOMATION – USER ENVIRONMENT MANAGEMENT – VIRTUALIZATION

# AGENDA

- Wrappers
- Packaging
- PowerShell
- PSADK
- SCCM

# WRAPPERS



# WHY WRAPPERS

- Prerequisites / Post-Installation Tasks
- Pre- and Post-Scripting
  - Delete files, Create Shortcuts, Registry
- Condition checks
- Check logged on users
- Check running processes
- Unattended installations
- Standardization

# PACKAGING



# ABOUT PACKAGING

- Reproduceability
- Quality assurance
- Documentation
- Humans make mistakes and decisions

# THINK ABOUT...

- Prerequisites
- The deployment process itself
  - What's first
  - Second
  - Third...
  - Clean up
- How to revert things

# POWERSHELL

```
$classes = array( 'zoom' );

if ( $loop == 0 || $loop % $columns == 0 )
    $classes[] = 'first';

if ( ( $loop + 1 ) % $columns == 0 )
    $classes[] = 'last';

$image_link = wp_get_attachment_url( $attachment_id );

if ( ! $image_link )
    continue;

$image      = wp_get_attachment_image( $attachment_id, apply_filters( 'single_product_thumbnail_size', 'single_product_large_thumbnail_size', 'shop_single' ) );
$image_class = esc_attr( implode( ' ', $classes ) );
$image_title = esc_attr( get_the_title( $attachment_id ) );
printf( 'div class="slide easyzoom"><a href="%s" title="%s" class="%s" data-zoom-image="%s"></a></div>', wp_get_attachment_url( $attachment_id ), $image_title, $image_class, $image->url, $image->src );
sleep++;
}
```

# POWERSHELL

- Version 1.0 was released in November 2006
- Today Version 5.0 is shipped
  - Github search throws 6.862 repository results
  - Windows Server 2016 TP2 with more than 2500 Cmdlets
- System Center Configuration Manager Cmdlet Library
  - [Microsoft.com/en-us/download/details.aspx?id=46681](http://Microsoft.com/en-us/download/details.aspx?id=46681)

# MARK RUSSINOVIC

“PowerShell  
is the new  
black”





## PowerShell App Deployment Toolkit

# MAIN FEATURES

- Easy To Use
- Consistent
- Powerful (58 functions)
- User Interface (Balloon Tips, Notifications, Prompts)
- Localized (EN, ES, FR, DE, IT, NL,...)
- Integration with SCCM 2012 R2 (and many more...)
- Updatable
- Extensible
- Helpful

# FUNCTIONS/LOGIC (BESIDES OTHERS)

- Execute any type of setup (MSI or EXEs) and handle / translate the return codes
- Send a sequence of keys to an application window
- Perform SCCM actions such as Machine and User Policy Refresh, Inventory Update and Software Update
- Supports installation of applications on Citrix XenApp/Remote Desktop Session Host Servers
- Check File versions
- Pin or Unpin applications to the Start Menu or Task Bar
- Create Start Menu Shortcuts
- Register / Unregister DLL files
- Refresh desktop icons
- Test network connectivity
- Test power connectivity
- Check whether a PowerPoint slideshow is running



Microsoft Desktop-Experience 2012\_R2



- AUTOMATION
- DEPLOYMENT
- VIRTUALIZATION

**www.RISConsulting.de**

The following application is about to be installed:  
Microsoft Desktop-Experience 2012\_R2

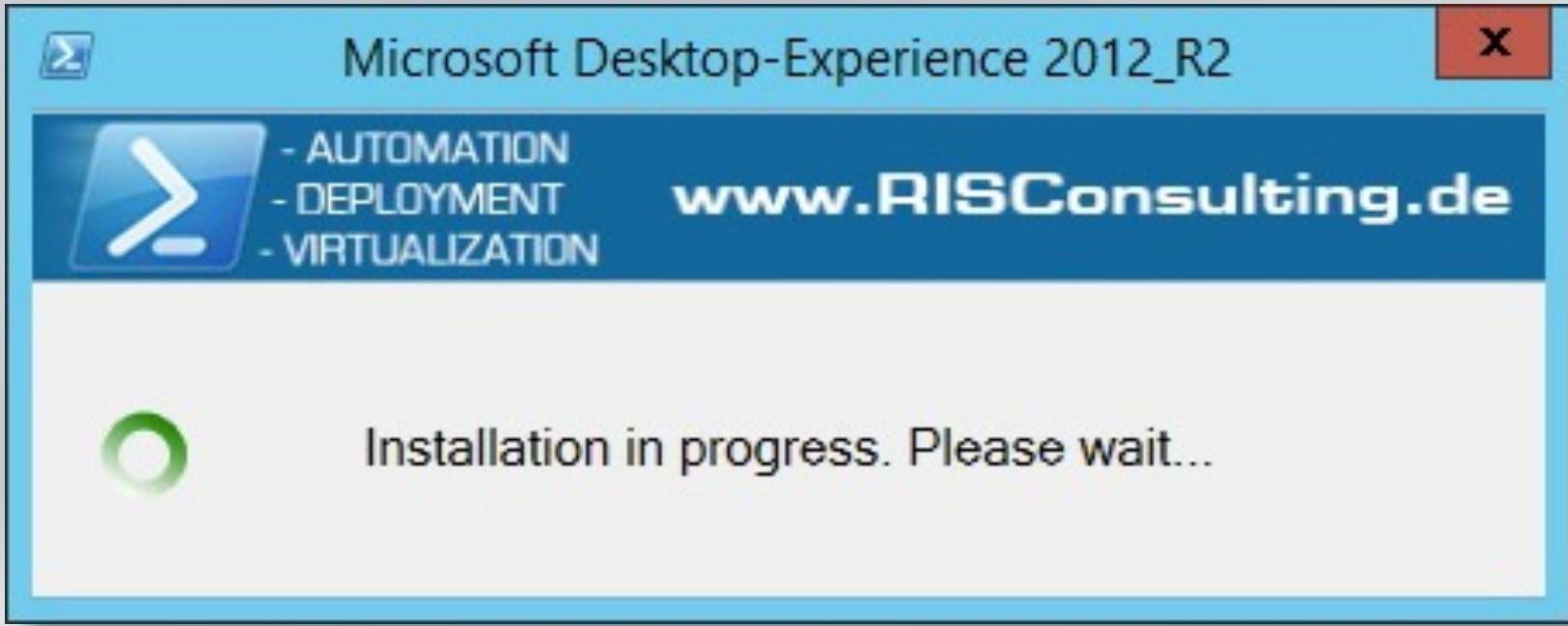
You can choose to defer the installation until the deferral expires:

Remaining Deferrals: 1

Once the deferral has expired, you will no longer have the option to defer.

Defer

Continue





Citrix XenDesktop 76 Controller

File Home Share View

PACKAGES > Citrix > Citrix XenDesktop 76 Controller

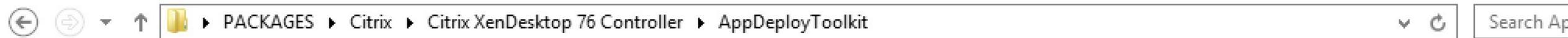
Favorites

- Desktop
- Downloads
- Recent places
- This PC
- Network

Name	Date modified	Type	Size
AppDeployToolkit	24.01.2016 15:49	File folder	
Files	30.03.2016 19:22	File folder	
Deploy-Application	22.09.2015 17:09	Application	308 KB
Deploy-Application.exe.config	22.09.2015 17:09	CONFIG File	1 KB
Deploy-Application	30.03.2016 19:22	Windows PowerS...	9 KB

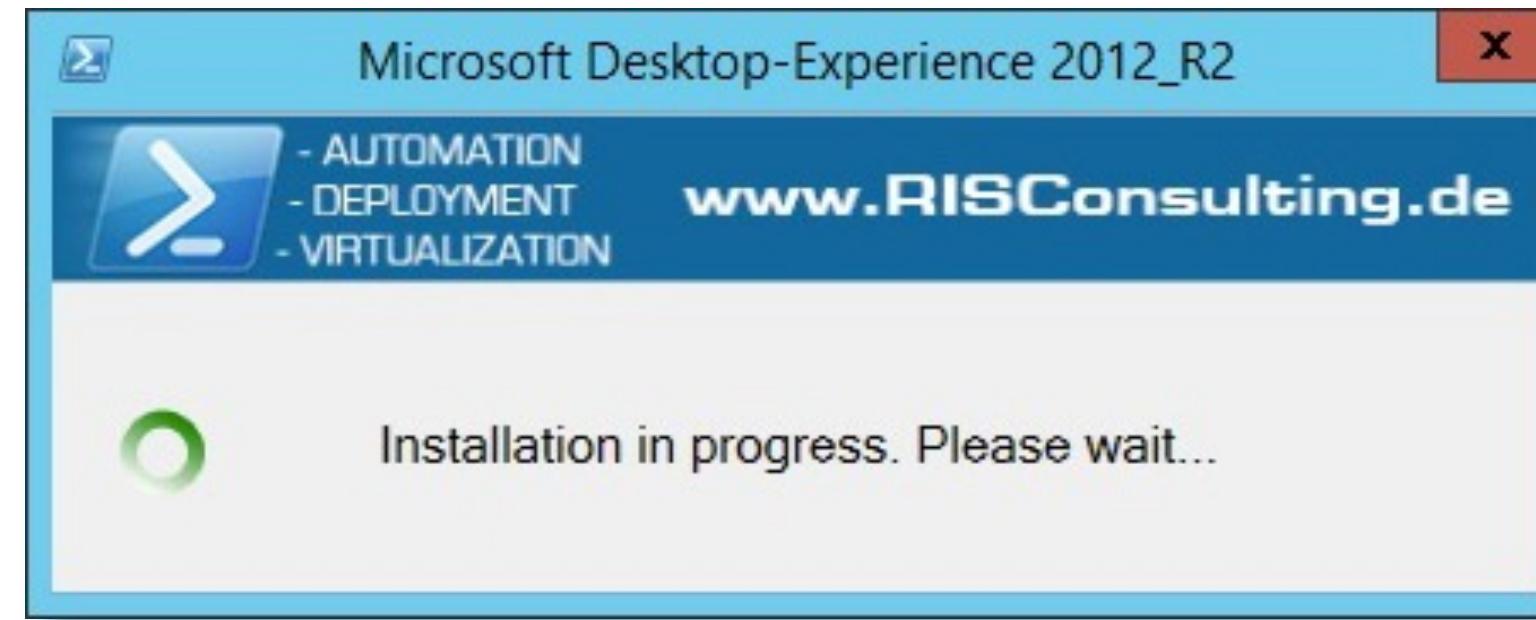
5 items

# PSADK STRUCTURE

**Favorites**

- Desktop
- Downloads
- Recent places
- This PC
- Network

Name	Date modified	Type	Size
AppDeployToolkitBanner	22.09.2015 17:09	PNG image	7 KB
AppDeployToolkitConfig	19.11.2015 16:29	XML Document	132 KB
AppDeployToolkitExtensions	22.09.2015 17:09	Windows PowerS...	2 KB
AppDeployToolkitHelp	22.09.2015 17:09	Windows PowerS...	6 KB
AppDeployToolkitLogo	22.09.2015 17:09	Icon	294 KB
AppDeployToolkitMain.cs	22.09.2015 17:09	CS File	26 KB
AppDeployToolkitMain	22.09.2015 17:09	Windows PowerS...	448 KB



File Edit Format View Help

```
<?xml version="1.0" encoding="utf-16"?>
<AppDeployToolkit_Config>
  <!--Configuration File Details-->
  <Config_File>
    <Config_Version>3.6.6</Config_Version>
    <Config_Date>09/21/2015</Config_Date>
  </Config_File>
  <!--Toolkit Options-->
  <Toolkit_Options>
    <Toolkit_RequireAdmin>True</Toolkit_RequireAdmin>
    <!-- Specify if Administrator Rights are required. NB: Some functions won't work if this is set to false, such as deferral, blockexecution, file -->
    <Toolkit_TempPath>$envSystemDrive\Users\Public</Toolkit_TempPath>
    <!-- Path used to store temporary Toolkit files (with PSAppDeployToolkit as subdirectory), e.g. cache toolkit for cleaning up blocked apps. -->
    <Toolkit_RegPath>HKLM:SOFTWARE</Toolkit_RegPath>
    <!-- Registry key used to store toolkit information (with PSAppDeployToolkit as child registry key), e.g. deferral history. -->
    <Toolkit_LogPath>$envWinDir\Logs\Software</Toolkit_LogPath>
    <!-- Log path used for Toolkit logging. -->
    <Toolkit_CompressLogs>False</Toolkit_CompressLogs>
    <!-- Specify if the log files should be bundled together in a compressed zip file -->
    <Toolkit_LogStyle>CMTrace</Toolkit_LogStyle>
    <!-- Specify if log file should be a CMTrace compatible log file or a Legacy text log file. -->
    <Toolkit_LogDebugMessage>False</Toolkit_LogDebugMessage>
    <!-- Specify if debug messages such as bound parameters passed to a function should be logged. -->
    <Toolkit_LogMaxSize>10</Toolkit_LogMaxSize>
    <!-- Specify maximum file size limit for log file in megabytes (MB). -->
    <Toolkit_LogWriteToHost>True</Toolkit_LogWriteToHost>
    <!-- Specify if log messages should be written to the console. -->
  </Toolkit_Options>
  <!--MSI Options-->
  <MSI_Options>
    <MSILoggingOptions>/L*v</MSILoggingOptions>
    <!-- Logging level used for MSI logging. -->
  </MSI_Options>
</AppDeployToolkit_Config>
```

Convert-RegistryPath
Copy-File
Disable-TerminalServerInstallMode
<b>Enable-TerminalServerInstallMode</b>
Execute-MSI
Execute-Process
Execute-ProcessAsUser
Exit-Script
Get-FileVersion
Get-FreeDiskSpace
Get-HardwarePlatform
Get-IniValue
Get-InstalledApplication
Get-LoggedOnUser
Get-PendingReboot
Get-RegistryKey
Get-ScheduledTask
Get-ServiceStartMode
Get-UniversalDate
Get-UserProfiles
Get-WindowTitle
Install-MSUpdates
Install-SCCMSoftwareUpdates
Invoke-HKCURegistrySettingsForAll
Invoke-RegisterOrUnregisterDLL
Invoke-SCCMTask
New-Folder
New-MsiTransform
New-Shortcut
Refresh-Desktop
Refresh-SessionEnvironmentVariable
Remove-File
Remove-Folder
Remove-MSIApplications

**NAME**  
Enable-TerminalServerInstallMode

**SYNOPSIS**  
Changes to user install mode for Remote Desktop Session Host/Citrix servers.

**SYNTAX**  
`Enable-TerminalServerInstallMode [[-ContinueOnError] <Boolean>] [<CommonParameters>]`

**DESCRIPTION**  
Changes to user install mode for Remote Desktop Session Host/Citrix servers.

**PARAMETERS**

- ContinueOnError <Boolean>  
Continue if an error is encountered. Default is: \$true.
- <CommonParameters>  
This cmdlet supports the common parameters: Verbose, Debug, ErrorAction, ErrorVariable, WarningAction, WarningVariable, OutBuffer, PipelineVariable, and OutVariable. For more information, see about\_CommonParameters (<http://go.microsoft.com/fwlink/?LinkID=113216>).

----- EXAMPLE 1 -----

PS C:\>Enable-TerminalServerInstall

**REMARKS**  
To see the examples, type: "get-help Enable-TerminalServerInstallMode -examples".  
For more information, type: "get-help Enable-TerminalServerInstallMode -detailed".  
For technical information, type: "get-help Enable-TerminalServerInstallMode -full".  
For online help, type: "get-help Enable-TerminalServerInstallMode -online"

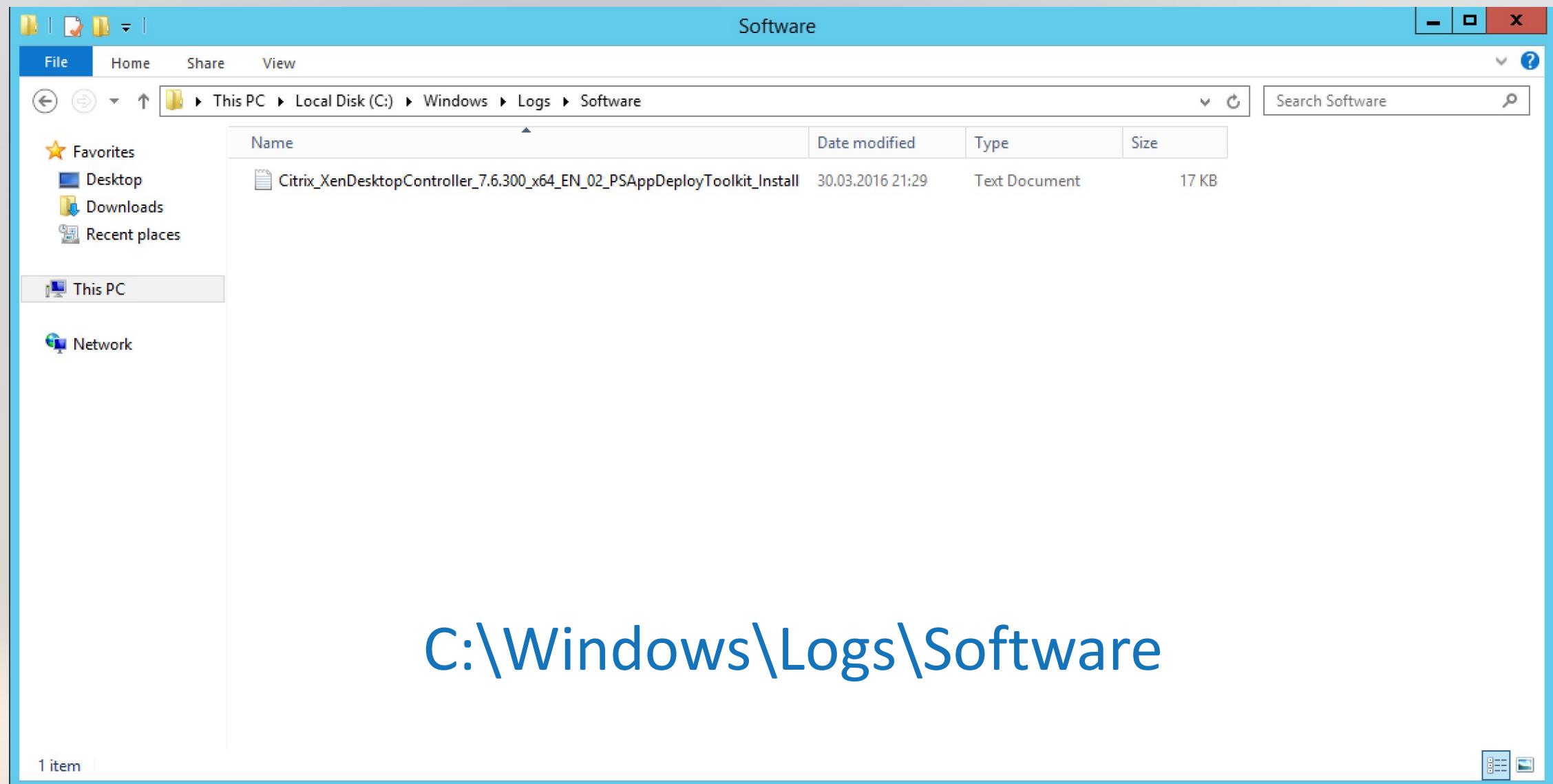


# HANDS ON...

ALL I AM IS YOURS

ALL I AM IS YOURS

# PSADK TROUBLESHOOTING



File Edit Format View Help

```

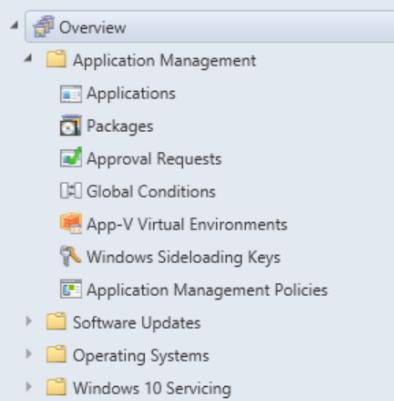
k![LOG[[Initialization] :: ****LOG*****]LOG!]><time="21:28:39.588120" date="03-30-2016" component="PSAppDeployToolkit">
<!LOG[[Initialization] :: ****LOG*****]LOG!]><time="21:28:39.588120" date="03-30-2016" component="PSAppDeployToolkit">
<!LOG[[Initialization] :: [Citrix_XenDesktopController_7.6.300_x64_EN_02] setup started.]LOG!]><time="21:28:39.666120" date="03-30-2016" component="PSAppDeployToolkit" context="WIN-N9QA4LEL4IR">
<!LOG[[Initialization] :: Script [C:\Users\Administrator\Desktop\PACKAGES\Citrix\Citrix XenDesktop 76 Controller\AppDeployToolkit\AppDeployToolkitMain.ps1] dot-source invoked]LOG!]><time="21:28:39.713120" date="03-30-2016" component="PSAppDeployToolkit">
<!LOG[[Initialization] :: Script [C:\Users\Administrator\Desktop\PACKAGES\Citrix\Citrix XenDesktop 76 Controller\AppDeployToolkit\AppDeployToolkitExtensions.ps1] dot-source invoked]LOG!]><time="21:28:39.713120" date="03-30-2016" component="PSAppDeployToolkit">
<!LOG[[Initialization] :: [Citrix_XenDesktopController_7.6.300_x64_EN_02] script version is [1.0.0]]LOG!]><time="21:28:39.713120" date="03-30-2016" component="PSAppDeployToolkit">
<!LOG[[Initialization] :: [Deploy Application] script version is [3.6.5]]LOG!]><time="21:28:39.713120" date="03-30-2016" component="PSAppDeployToolkit" context="WIN-N9QA4LEL4IR">
<!LOG[[Initialization] :: [App Deploy Toolkit Main] script version is [3.6.7]]LOG!]><time="21:28:39.713120" date="03-30-2016" component="PSAppDeployToolkit" context="WIN-N9QA4LEL4IR">
<!LOG[[Initialization] :: [App Deploy Toolkit Extensions] version is [1.5.0]]LOG!]><time="21:28:39.729120" date="03-30-2016" component="PSAppDeployToolkit" context="WIN-N9QA4LEL4IR">
<!LOG[[Initialization] :: Computer Name is [WIN-N9QA4LEL4IR]]LOG!]><time="21:28:39.729120" date="03-30-2016" component="PSAppDeployToolkit" context="WIN-N9QA4LEL4IR\Administrator">
<!LOG[[Initialization] :: Current User is [WIN-N9QA4LEL4IR\Administrator]]LOG!]><time="21:28:39.729120" date="03-30-2016" component="PSAppDeployToolkit" context="WIN-N9QA4LEL4IR\Administrator">
<!LOG[[Initialization] :: OS Version is [Microsoft Windows Server 2012 R2 Standard 64-bit 6.3.9600.0]]LOG!]><time="21:28:39.729120" date="03-30-2016" component="PSAppDeployToolkit">
<!LOG[[Initialization] :: OS Type is [Server]]LOG!]><time="21:28:39.729120" date="03-30-2016" component="PSAppDeployToolkit" context="WIN-N9QA4LEL4IR\Administrator" type="String">
<!LOG[[Initialization] :: Current Culture is [de-DE] and UI language is [DE]]LOG!]><time="21:28:39.745120" date="03-30-2016" component="PSAppDeployToolkit" context="WIN-N9QA4LEL4IR">
<!LOG[[Initialization] :: Hardware Platform is [Virtual:VMWare]]LOG!]><time="21:28:39.838120" date="03-30-2016" component="PSAppDeployToolkit" context="WIN-N9QA4LEL4IR\Administrator">
<!LOG[[Initialization] :: PowerShell Host is [ConsoleHost] with version [4.0]]LOG!]><time="21:28:39.854120" date="03-30-2016" component="PSAppDeployToolkit" context="WIN-N9QA4LEL4IR">
<!LOG[[Initialization] :: PowerShell Version is [4.0 x64]]LOG!]><time="21:28:39.854120" date="03-30-2016" component="PSAppDeployToolkit" context="WIN-N9QA4LEL4IR\Administrator">
<!LOG[[Initialization] :: PowerShell CLR (.NET) version is [4.0.30319.42000]]LOG!]><time="21:28:39.854120" date="03-30-2016" component="PSAppDeployToolkit" context="WIN-N9QA4LEL4IR">
<!LOG[[Initialization] :: ****LOG*****]LOG!]><time="21:28:39.870120" date="03-30-2016" component="PSAppDeployToolkit">
<!LOG[[Initialization] :: Display session information for all logged on users:
```

NTAccount	:	WIN-N9QA4LEL4IR\Administrator
SID	:	S-1-5-21-2898205078-3766013570-2630186657-500
UserName	:	Administrator
DomainName	:	WIN-N9QA4LEL4IR
SessionId	:	1
SessionName	:	Console
ConnectState	:	Active
IsCurrentSession	:	True
IsConsoleSession	:	True
IsActiveUserSession	:	True
IsUserSession	:	True



Software Library \ Overview ▶

Software Library



## Software Library

### Navigation Index

**Application Management:** Manage application deployments for users and devices, and configure global conditions for all applications in the hierarchy.

**Operating Systems:** Manage drivers, operating system images, upgrade packages, boot images, and task sequences to deploy operating systems and virtual hard disks.

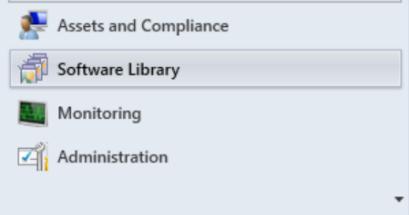
**Software Updates:** Manage software updates, software update groups, deployment packages for software updates, and automatic deployment rules.

**Windows 10 Servicing:** Manage Servicing for Windows 10

### Recent Alerts (0) - Last updated: 9/12/2016 3:12:59 PM

No recent alerts found.

# sccm



Activate Windows  
Go to System in Control Panel to activate Windows.

# INTEGRATION WITH SCCM

- Handles SCCM exit codes, including time sensitive dialogs supporting SCCM's Fast Retry feature – providing more accurate SCCM Reporting (no more Failed due to timeout errors).
- Ability to prevent reboot codes (3010) from being passed back to SCCM, which would cause a reboot prompt.
- Supports the CM12 application model by providing an install and uninstall deployment type for every deployment script.
- Bundle multiple application installations to overcome the supported limit of 5 applications in the CM12 application dependency chain.
- Compared to compiled deployment packages, e.g. WiseScript, the Toolkit utilises the SCCM cache correctly and SCCM Distribution Point bandwidth more efficiently by using loose files.



## Content

### General

#### General Information

#### Content

#### Detection Method

#### User Experience

#### Requirements

#### Dependencies

#### Summary

#### Progress

#### Completion

### Specify information about the content to be delivered to target devices

Specify the location of the deployment type's content and other settings that control how content is delivered to target devices. All the contents in the path specified will be delivered.

#### Content location:

\\Labwdc0001\d\$\PACKAGES\Applications\Adob

[Browse...](#)

Persist content in the client cache

Allow clients to share content with other clients on the same subnet

This option allows clients that use Windows BranchCache to download content from on-premises distribution points. Content downloads from cloud-based distribution points can always be shared by clients that use Windows BranchCache.

#### Specify the command used to install this content.

##### Installation program:

deploy-application.exe install

[Browse...](#)

##### Installation start in:

(empty field)

Configuration Manager can remove installations of this content if an uninstall program is specified below.

##### Uninstall program:

deploy-application.exe Uninstall

[Browse...](#)

##### Uninstall start in:

(empty field)

Run installation and uninstall program as 32-bit process on 64-bit clients.

Detection Rule

Create a rule that indicates the presence of this application.

Setting Type: Registry

Specify the registry key or value to detect:

Hive:  Browse...

Key:

Value:

Use (Default) registry key value for detection

This registry key is associated with a 32-bit application on 64-bit systems

Data Type:

This registry setting must exist on the target system to indicate presence of this application

This registry setting must satisfy the following rule to indicate the presence of this application

Operator:

Value:

# LICENSING

- <https://psappdeploytoolkit.codeplex.com/license>
- Microsoft Public License (Ms-PL)

# FURTHER READING

- <http://www.sinisasokolic.com/why-i-love-the-powershell-appdeployment-toolkit/>
- <http://psappdeploytoolkit.com/>



s.sokolic@RISConsulting.de

@sinisasokolic





**Hier finden Sie uns in Köln:**

Adresse: RIS Consulting GmbH  
Hansaring 20 | 50670 Köln  
Fon +49 221 643083 - 0  
Fax +49 221 643083 - 99

**Standort Frankfurt am Main:**

Adresse: RIS Consulting GmbH  
Poststraße 2-4 | 60329 Frankfurt am Main  
Fon +49 69 3487695 - 30  
Fax +49 69 3487695- 39

Besuchen Sie uns auf [www.RISConsulting.de](http://www.RISConsulting.de).

