



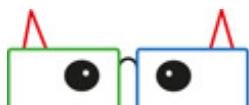
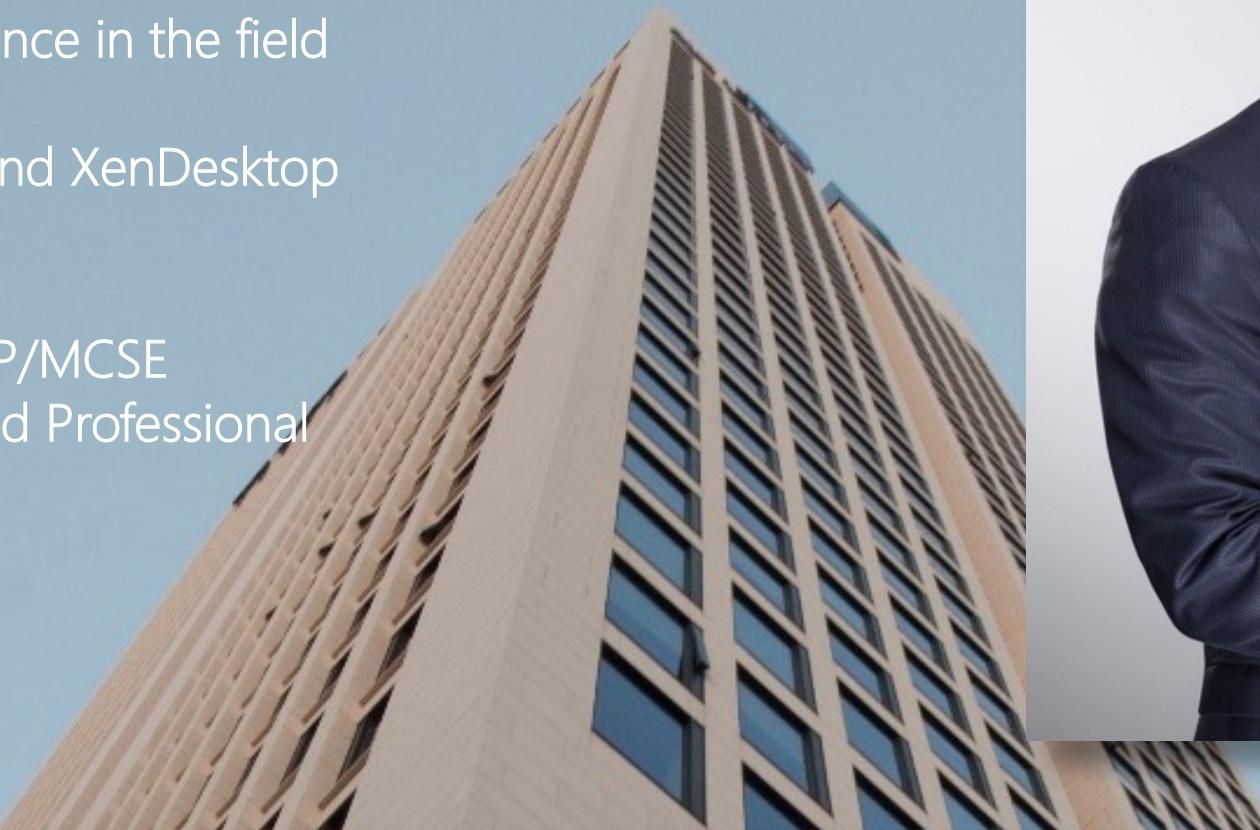
THE JOY AND PAIN OF DEPLOYING XENAPP IN ENTERPRISE ENVIRONMENTS

A Survival Guide by Sinisa Sokolic

SINISA SOKOLIC

- CTO@RISC
- 17 Years Experience in the field
- Citrix XenApp and XenDesktop
- Citrix CCP-V
- Microsoft MCITP/MCSE
- Unidesk Certified Professional
- VMware VCP

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THE JOY

We Citrix guys have such a cool job...



NEED TO KNOW SO MUCH...

- People
- File Services
- Storage
- Networking
- Active Directory
- Application Deployment
- Infrastructure Services
- And many more...



THE PAIN...

...and its cause.



Framework
Data Services
Team Services
Delivery Services
Service Virtualization
Department Virus
Antie-Business
Department Packaging
Directory Security
Active Users
Operations
File Marketing
Storage
Networking
Applications
Software
Storage
Marketing
Management
Database

Managers Desk
Hardware Incident
Internet
Procurement Application
Access

CITRIX

↑
GUILTY

DATABASE GUYS

You can have a database, but no permissions.

Manually

In the Site creation wizard, select the Generate scripts option

Scripted

```
Get-XDDatabaseSchema -SiteName SITENAME -DataStore Site -  
DatabaseName DBNAME -DatabaseServer DBSERVERNAME -ScriptType  
FullDatabase > c:\dev_create_site_script.sql
```

```
Get-XDDatabaseSchema -SiteName SITENAME -DataStore Logging -  
DatabaseName DBNAME -DatabaseServer DBSERVERNAME -ScriptType  
FullDatabase > c:\dev_create_logging.sql
```

```
Get-XDDatabaseSchema -SiteName SITENAME -DataStore Monitor -  
DatabaseName DBNAME -DatabaseServer DBSERVERNAME -ScriptType  
FullDatabase > c:\dev_create_monitor_script.sql
```

HOW TO CREATE DATABASE SCRIPTS?

ADD CONTROLLERS

- Controllers on which the scripts are created will be joined automatically
- How to add additional Controllers:

```
Get-XDDatabaseSchema -AdminAddress  CONTROLLERNAME-SiteName  
SITENAME -DataStore Site -DatabaseName DBNAME-DatabaseServer  
DBSERVERNAME -ScriptType AddController >  
C:\dev_add_controller_site_script.sql
```

GO ON...

- Give those scripts to your database administrator.
- Citrix recommends using a collation that ends with "_100_CI_AS_KS"
- Scripts must be run in SQLCMD Mode
- In Studio, you will be prompted to continue the Site creation. Enter the addresses:
 - ServerName
 - ServerName\InstanceName
 - ServerName,PortNumber
- If something is missing you won't be able to create the site
 - Start over checking what's wrong with the Database or Firewall guys

PACKAGING GUYS

I think it should work now...



- Don't do it manually!
- Use packaging standards
 - psappdeploymenttoolkit.com
- Use deployment standards
 - SCCM or something similar that provides consistent redeployments
- Take care of the complete delivery process
- Don't expect knowledge about multi-user-environments
- Expect that there will be no just-in-time delivery of packages
- Integrate only minimal settings into the installation package

INSTALLATION GUIDELINES

CITRIX STAND ALONE INSTALLERS

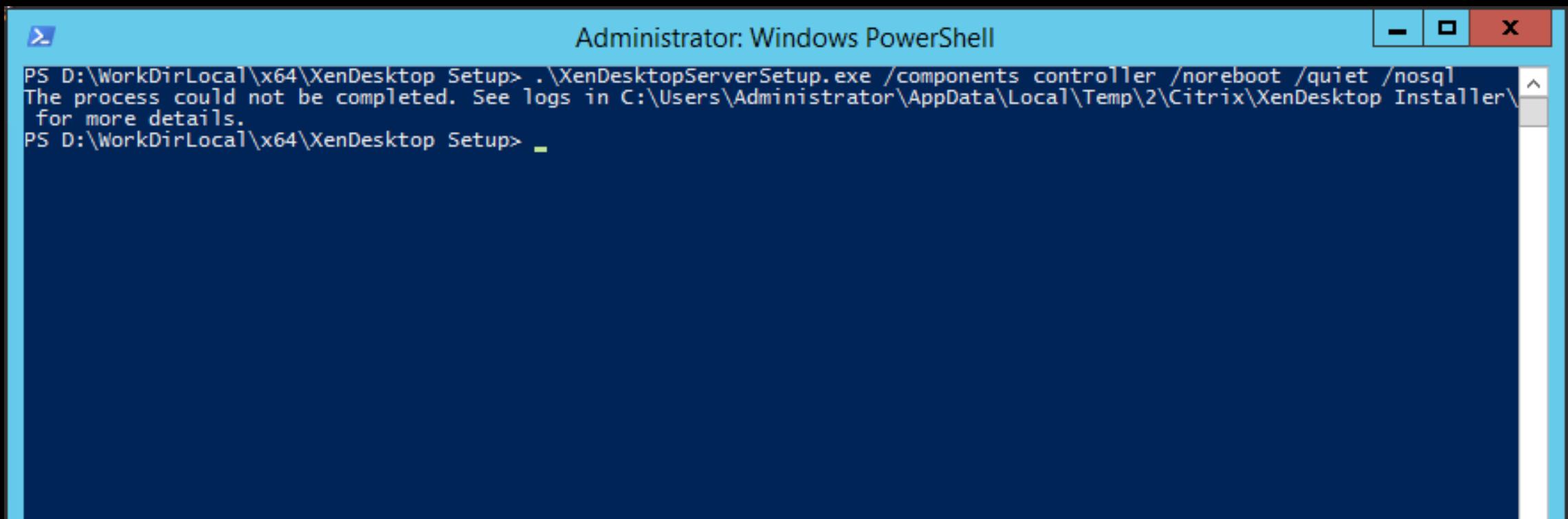
- StoreFront
- VDA
- Licensing
- Director
- Receiver
- ?

The screenshot shows a Windows File Explorer window with the title bar "XenDesktop Setup". The left sidebar includes "Favorites" (Desktop, Downloads, Recent places), "This PC" (D on HOMEWWS01C, Local Disk (C:), Local Disk (D:), DVD Drive (E:)), and "Network". The main area displays a list of files and folders in the directory "This PC > Local Disk (D:) > CTRL_76 > x64 > XenDesktop Setup".

Name	Date modified	Type	Size
de	5/15/2016 3:57 PM	File folder	
es	5/15/2016 3:57 PM	File folder	
fr	5/15/2016 3:57 PM	File folder	
ja	5/15/2016 3:57 PM	File folder	
resource	5/15/2016 3:57 PM	File folder	
zh-cn	5/15/2016 3:57 PM	File folder	
AutoSelectHelper	9/4/2014 5:05 PM	Application	330 KB
AutoSelectHelper.exe.config	5/7/2014 2:24 PM	CONFIG File	1 KB
Chrome.dll	7/3/2014 4:35 PM	Application extens...	189 KB
Citrix.MetalInstaller.UI.Common.dll	9/4/2014 5:05 PM	Application extens...	65 KB
Citrix.MetalInstaller.UI.Common.dll.config	5/7/2014 2:25 PM	CONFIG File	1 KB
Citrix.MetalInstaller.WizardFramework.dll	9/4/2014 5:05 PM	Application extens...	52 KB
Citrix.MetalInstaller.WizardFramework.dll....	5/7/2014 2:25 PM	CONFIG File	1 KB
Common.dll	7/3/2014 4:35 PM	Application extens...	159 KB
CommonControls.dll	7/3/2014 4:35 PM	Application extens...	695 KB
ConfigurationApp	9/4/2014 5:05 PM	Application	15 KB
FMAUtils.dll	7/3/2014 4:35 PM	Application extens...	131 KB
Interop.NetFwTypeLib.dll	9/4/2014 5:05 PM	Application extens...	35 KB
LicServVerify	7/15/2014 5:07 PM	Application	1,188 KB
LSCompCheck	9/4/2014 5:05 PM	Application	43 KB
LSCompCheck.exe.config	5/7/2014 2:24 PM	CONFIG File	1 KB
MetalInstallerCore.dll	9/4/2014 5:05 PM	Application extens...	516 KB
MetalInstallerCore.dll.config	5/7/2014 2:24 PM	CONFIG File	3 KB
Microsoft.Practices.Unity.dll	5/7/2014 2:45 PM	Application extens...	131 KB
Microsoft.WindowsAPICodePack.dll	5/7/2014 2:27 PM	Application extens...	110 KB
Microsoft.WindowsAPICodePack.Shell.dll	5/7/2014 2:27 PM	Application extens...	537 KB
NativeUtilities.dll	9/4/2014 5:05 PM	Application extens...	45 KB
UI.dll	9/4/2014 5:05 PM	Application extens...	511 KB

THIN THE CONTROLLER INSTALLATION DOWN

ERRORS

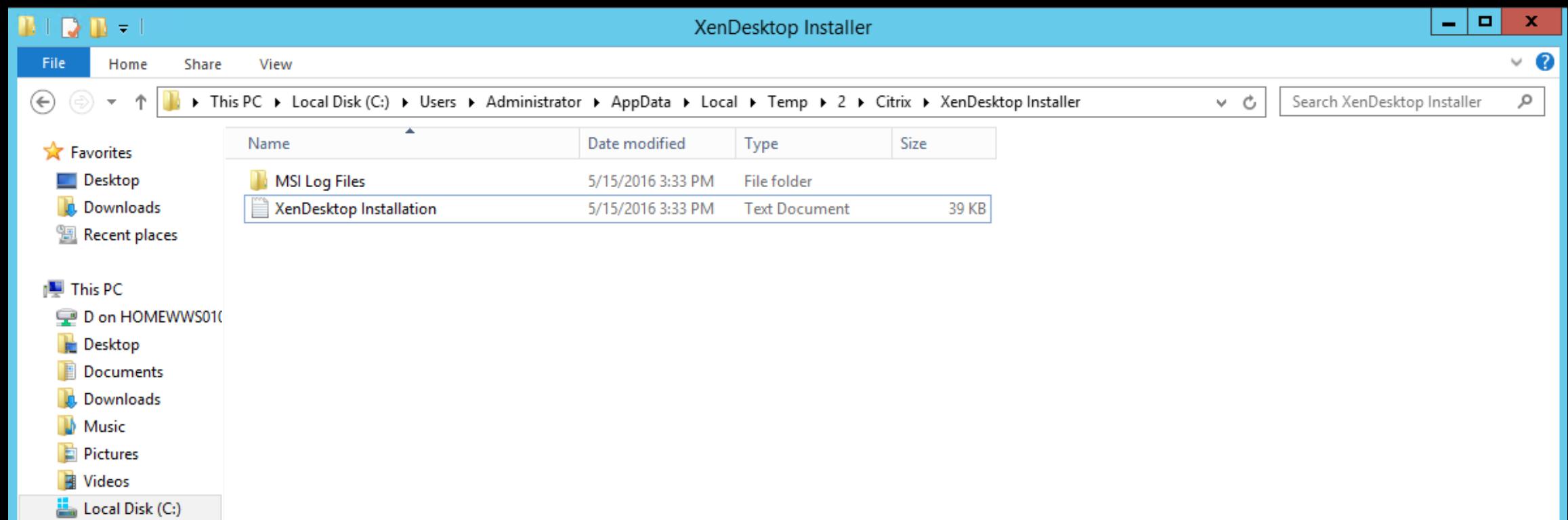


The screenshot shows a Windows PowerShell window titled "Administrator: Windows PowerShell". The command entered was `PS D:\WorkDirLocal\x64\XenDesktop Setup> .\XenDesktopServerSetup.exe /components controller /noreboot /quiet /nosql`. The output indicates that the process could not be completed, with a reference to logs located at `C:\Users\Administrator\AppData\Local\Temp\2\Citrix\XenDesktop Installer\`. The window has a blue header bar and a dark blue body.

```
Administrator: Windows PowerShell
PS D:\WorkDirLocal\x64\XenDesktop Setup> .\XenDesktopServerSetup.exe /components controller /noreboot /quiet /nosql
The process could not be completed. See logs in C:\Users\Administrator\AppData\Local\Temp\2\Citrix\XenDesktop Installer\
for more details.
PS D:\WorkDirLocal\x64\XenDesktop Setup>
```

THIN THE CONTROLLER INSTALLATION DOWN

LOG FILES



File Edit Format View Help

```
15:33:02.7421 : XenDesktopSetup:InstallComponent: About to install component 'Monitoring Service'
15:33:02.7421 : XenDesktopSetup:VerifyCDRoot: Found MediaID file at 'D:\WorkDirLocal\x64'
15:33:02.7421 : XenDesktopSetup:VerifyCDRoot: Found MediaID file at 'D:\WorkDirLocal\x64'
15:33:02.7421 : XenDesktopSetup:Media found, Continuing.
15:33:02.7421 : XenDesktopSetup:InstallComponent: Installed component 'Monitoring Service'
15:33:02.7421 PROC : XenDesktopSetup:InstallComponent: Exit (return True)
15:33:02.7421 PROC : XenDesktopSetup:InstallComponent: Entry, component name = 'Environment Test Service'
15:33:02.7421 : XenDesktopSetup:InstallComponent: About to install component 'Environment Test Service'
15:33:02.7421 : XenDesktopSetup:VerifyCDRoot: Found MediaID file at 'D:\WorkDirLocal\x64'
15:33:02.7421 : XenDesktopSetup:VerifyCDRoot: Found MediaID file at 'D:\WorkDirLocal\x64'
15:33:02.7421 : XenDesktopSetup:Media found, Continuing.
15:33:02.7421 : XenDesktopSetup:InstallComponent: Installed component 'Environment Test Service'
15:33:02.7421 PROC : XenDesktopSetup:InstallComponent: Exit (return True)
15:33:02.7421 PROC : XenDesktopSetup:InstallComponent: Entry, component name = 'StoreFront Service'
15:33:02.7421 : XenDesktopSetup:InstallComponent: About to install component 'StoreFront Service'
15:33:02.7421 : XenDesktopSetup:VerifyCDRoot: Found MediaID file at 'D:\WorkDirLocal\x64'
15:33:02.7421 : XenDesktopSetup:VerifyCDRoot: Found MediaID file at 'D:\WorkDirLocal\x64'
15:33:02.7421 : XenDesktopSetup:Media found, Continuing.
15:33:02.7421 : XenDesktopSetup:InstallComponent: Installed component 'StoreFront Service'
15:33:02.7421 PROC : XenDesktopSetup:InstallComponent: Exit (return True)
15:33:02.7421 PROC : XenDesktopSetup:InstallComponent: Entry, component name = 'Scout'
15:33:02.7421 : XenDesktopSetup:InstallComponent: About to install component 'Scout'
15:33:02.7421 : XenDesktopSetup:VerifyCDRoot: Found MediaID file at 'D:\WorkDirLocal\x64'
15:33:02.7421 : XenDesktopSetup:VerifyCDRoot: Found MediaID file at 'D:\WorkDirLocal\x64'
15:33:02.7421 : XenDesktopSetup:Media found, Continuing.
15:33:02.7421 $ERR$ : XenDesktopSetup:MSI file D:\WorkDirLocal\x64\Citrix Desktop Delivery Controller\Scout.msi not found on media.
15:33:02.7421 : XenDesktopSetup:Product with upgrade code {9B64E8FE-1A35-4E1C-A977-0F9F9D6F1119} is not installed.
15:33:02.7421 : XenDesktopSetup:About to install MSI File 'D:\WorkDirLocal\x64\Citrix Desktop Delivery Controller\Scout.msi' using params 'INSTALLLOCATION="C:\Program F'
15:33:02.7565 : XenDesktopSetup:Starting synchronous process 'msiexec' with args '/i "D:\WorkDirLocal\x64\Citrix Desktop Delivery Controller\Scout.msi" /lv "C:\Users\Adi
15:33:02.7721 : XenDesktopSetup:Process output: This installation package could not be opened. Verify that -
15:33:02.7721 : XenDesktopSetup:Process output:
15:33:02.7721 : XenDesktopSetup:Process output:
15:33:02.7721 : XenDesktopSetup:Process completed with error code 1619
15:33:02.7721 $ERR$ : XenDesktopSetup:Installation of MSI File 'Scout.msi' failed with code 'InstallPackageOpenFailed' (1619).
15:33:02.7721 $ERR$ : XenDesktopSetup:InstallComponent: Failed to install component 'Scout'. Installation of MSI File 'Scout.msi' failed with code 'InstallPackageOpenFailed'
15:33:02.7721 $ERR$ : XenDesktopSetup:Recording installation failure. Installation of MSI File 'Scout.msi' failed with code 'InstallPackageOpenFailed' (1619).
15:33:02.7721 PROC : XenDesktopSetup:InstallComponent: Exit
15:33:02.7721 : XenDesktopSetup:Install tasks for this session have finished.
15:33:02.7721 : XenDesktopSetup:Installation failed
15:33:02.7721 : XenDesktopSetup:Installation Manager returned Failed
15:33:02.7721 : XenDesktopSetup:MetaInstaller terminating
```

CONTROLLER PACKAGE

- Size: 152 MB
- Further information about the necessary files

<http://www.sinisasokolic.com/reduce-citrix-xenapp-xendesktop-7-x-controller-setup-size/>

SOFTWARE UPDATE GUYS

Patching is crucial

SOFTWARE UPDATES

- It's weird when production is patched before acceptance and development
- Will kill your automated deployment if not taken care of
- Updates can kill your complete environment
 - Internet Explorer 11 consumes high memory and CPU cycles after you install update MS15-106 <https://support.microsoft.com/en-us/kb/3119070>

RECOMMENDED PATCHES 2012 R2

- Recommended Hotfixes for XenApp 7.x
- <http://support.citrix.com/article/CTX142357>
- Available Updates for Remote Desktop Services (Terminal Services) in Windows Server 2012 R2
- <https://support.microsoft.com/en-us/kb/2933664>
- Further help
- <http://www.sinisasokolic.com/windows-server-2012-r2-rds-updates-revealed/>

```
[13:15:35] [C:\Users\administrator.Lab\Desktop\2]\# .\RDS_Updates_Revealed.ps1
#####
You are running the following Operating System:
Microsoft Windows Server 2012 R2 Standard
Microsoft Windows NT 6.3.9600.0

#####
Getting installed Server Roles and Features and installed Updates
#####
RDS-RD-Server is installed

#####
Checking Rollups
#####
KB2903939 is not installed
Get it here: https://support.microsoft.com/de-de/kb/2903939
KB2928680 is not installed
Get it here: https://support.microsoft.com/de-de/kb/2928680
KB2919355 is installed
KB2955164 is not installed
Get it here: https://support.microsoft.com/de-de/kb/2955164
KB2975719 is not installed
Get it here: https://support.microsoft.com/de-de/kb/2975719
KB3000850 is installed
KB3013769 is installed

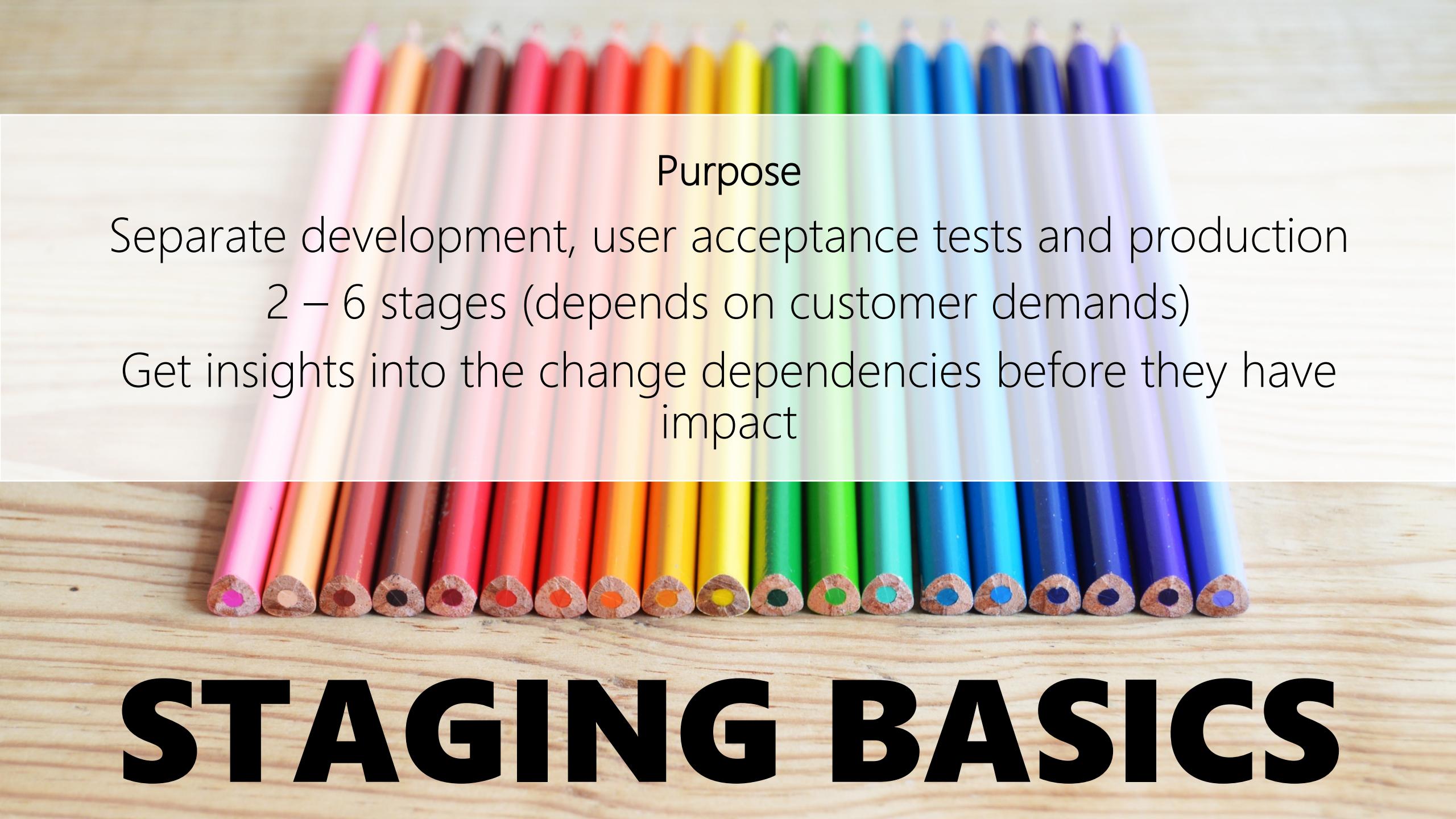
#####
Checking General OS Updates
#####
KB3127673 is not installed
Get it here: https://support.microsoft.com/de-de/kb/3127673
KB3092688 is not installed
Get it here: https://support.microsoft.com/de-de/kb/3092688
KB3078689 is not installed
Get it here: https://support.microsoft.com/de-de/kb/3078689
KB3053667 is not installed
Get it here: https://support.microsoft.com/de-de/kb/3053667
KB3047296 is not installed
Get it here: https://support.microsoft.com/de-de/kb/3047296
```

GENERAL RECOMMENDATIONS

- Don't use Active Setup to inject user settings
 - It will slow down your logon process
- Use GPO instead (carefully)
- Take care of the exit codes when running SCCM
 - Citrix VDA stand alone installer uses Exit Code 3
 - Many others use Exit Code 1 for success

A close-up, low-angle shot of a stack of antique books. The spines are dark and show significant wear, with visible discoloration and peeling. The pages are thick and layered, showing various colors from deep reds to blues and yellows. The lighting is dramatic, coming from the side, which creates strong highlights on the edges of the books and deep shadows in the stack.

STAGING

A horizontal row of approximately 20 colored pencils, arranged in a gradient from pink to purple. They are positioned at the top of the slide, overlapping a white rectangular area where the text is placed.

Purpose

Separate development, user acceptance tests and production

2 – 6 stages (depends on customer demands)

Get insights into the change dependencies before they have impact

STAGING BASICS

STAGING (SELF DESTRUCT EDITION)

- I update everything directly in production



Production
Server

STAGING (HOW IT SHOULD BE)

Test Servers

Pre-
Production
Servers

Applications
Published Apps
Published Desktops
Group Policies
Certificates
Virus Scan
Operating System
...

Production
Servers

REALITY...

- Teams don't align staging to their processes
- Leads to real problems
 - Patches are deployed in production before being tested
 - Group Policies on domain level overwrite every stage at once
- Processes are not used
 - Mainly because of project management and wrong communication between the teams

SECURITY GUYS



Printer Spooler is disabled by design in our environments. Why do you want to print?

SINGLE SIGN ON IS BROKEN BECAUSE...

Group Policy Management Editor

File Action View Help

Presentation Settings

Remote Desktop Services

- RD Licensing
- Remote Desktop Connection Client
- Remote Desktop Session Host
 - Application Compatibility
 - Connections
 - Device and Resource Redirection
 - Licensing
 - Printer Redirection
 - Profiles
 - RD Connection Broker
- Remote Session Environment
 - Security
 - Session Time Limits
 - Temporary folders

Setting	State	Comment
Server authentication certificate template	Not configured	No
Set client connection encryption level	Not configured	No
Always prompt for password upon connection	Enabled	No
Require secure RPC communication	Not configured	No
Require use of specific security layer for remote (RDP) conn...	Not configured	No
Do not allow local administrators to customize permissions	Not configured	No
Require user authentication for remote connections by usin...	Not configured	No

HARDENING CAN SUCK

File Name	Processor	Status	User	Type	Size	Description
CdfSvc.exe	18...	Running	NETWORK SERVICE	00	1,660 K	Citrix Diagno...
CitrixCseEng...	19...	Running	SYSTEM	00	3,856 K	Citrix Group ...
concentr.exe	47...	Running	Administrator	00	3,940 K	Citrix Connec...
concentr.exe	67...	Running		00	3,968 K	Concentr
conhost.exe	40...	Running	SYSTEM	00	1,328 K	Console Win...
conhost.exe	64...	Running	SYSTEM	00	1,332 K	Console Win...
CpSvc.exe	10...	Running	LOCAL SERVICE	00	1,984 K	Printer Mana...
cssrss.exe	736	Running		00	1,048 K	Csrss
cssrss.exe	812	Running		00	808 K	Csrss
cssrss.exe	18...	Running		00	1,156 K	Csrss
cssrss.exe	43...	Running		00	1,152 K	Csrss
CtxPvDSvc.e...	13...	Running	SYSTEM	00	1,648 K	Citrix person...
cbrdr.exe	19...	Running	LOCAL SERVICE	00	1,688 K	Citrix Remote...
CtxSvcHost....	13...	Running	NETWORK SERVICE	00	1,960 K	Citrix Service ...
CtxSvcHost....	20...	Running	LOCAL SERVICE	00	1,756 K	Citrix Service ...
CtxSvcHost....	21...	Running	LOCAL SERVICE	00	648 K	Citrix Service ...
CtxSvcHost....	21...	Running	LOCAL SERVICE	00	716 K	Citrix Service ...
CtxSvcHost....	22...	Running	LOCAL SERVICE	00	828 K	Citrix Service ...
CtxSvcHost....	23...	Running	LOCAL SERVICE	00	712 K	Citrix Service ...
dwm.exe	724	Running		00	13,796...	Dwm
dwm.exe	32...	Running		05	10,324...	Dwm
dwm.exe	48...	Running		00	5,920 K	Dwm
encsvc.exe	18...	Running	LOCAL SERVICE	00	1,512 K	Encryption S...
explorer.exe	37...	Running	Administrator	01	36,516...	Windows Ex...
explorer.exe	56...	Running		00	28,920...	Explorer
ImaAdvance...	28...	Running	SYSTEM	00	1,776 K	IMA Secure S...
inetinfo.exe	23...	Running	SYSTEM	00	6,108 K	Internet Infor...
LogonUI.exe	932	Running	SYSTEM	00	8,500 K	Windows Lo...
lsass.exe	944	Running	SYSTEM	00	6,104 K	Local Securit...
mmc.exe	59...	Running	Administrator	01	6,364 K	Microsoft Ma...
mmc.exe	64...	Running	Administrator	00	8,188 K	Microsoft Ma...
msdtc.exe	42...	Running	NETWORK SERVICE	00	2,768 K	Microsoft Dis...
PvsVmAgen...	14...	Running	SYSTEM	00	460 K	Citrix XenDes...

File Name	Processor	Status	User	Type	Size	Description
CdfSvc.exe	18...	Running	Administrator	00	4,076 K	Citrix Authen...
CitrixCseEng...	19...	Running	TestUser1	00	4,116 K	Citrix Authen...
concentr.exe	66...	Running	NETWORK SERVICE	00	29,420...	Citrix XenDes...
concentr.exe	39...	Running	TestUser1	00	4,016 K	Citrix Connec...
conhost.exe	68...	Running	SYSTEM	00	1,332 K	Console Win...
conhost.exe	67...	Running	SYSTEM	00	1,332 K	Console Win...
CpSvc.exe	10...	Running	LOCAL SERVICE	00	1,984 K	Printer Mana...
cssrss.exe	736	Running	SYSTEM	00	1,052 K	Client Server ...
cssrss.exe	812	Running	SYSTEM	00	824 K	Client Server ...
cssrss.exe	65...	Running	SYSTEM	00	1,080 K	Client Server ...
cssrss.exe	14...	Running	SYSTEM	01	1,100 K	Client Server ...
CtxPvDSvc.e...	13...	Running	SYSTEM	00	1,660 K	Citrix person...
cbrdr.exe	19...	Running	LOCAL SERVICE	00	1,688 K	Citrix Remote...
CtxSvcHost....	13...	Running	NETWORK SERVICE	00	1,976 K	Citrix Service ...
CtxSvcHost....	20...	Running	LOCAL SERVICE	00	1,768 K	Citrix Service ...
CtxSvcHost....	21...	Running	LOCAL SERVICE	00	660 K	Citrix Service ...
CtxSvcHost....	21...	Running	LOCAL SERVICE	00	728 K	Citrix Service ...
CtxSvcHost....	22...	Running	LOCAL SERVICE	00	840 K	Citrix Service ...
CtxSvcHost....	23...	Running	LOCAL SERVICE	00	732 K	Citrix Service ...
dwm.exe	724	Running	DWM-1	00	13,796...	Desktop Win...
dwm.exe	56...	Running	DWM-3	00	7,260 K	Desktop Win...
dwm.exe	38...	Running	DWM-4	00	9,976 K	Desktop Win...
encsvc.exe	18...	Running	LOCAL SERVICE	00	1,512 K	Encryption S...
explorer.exe	66...	Running	TestUser1	00	22,972...	Windows Ex...
explorer.exe	56...	Running	Administrator	00	24,032...	Windows Ex...
ImaAdvance...	28...	Running	SYSTEM	00	1,772 K	IMA Secure S...
inetinfo.exe	23...	Running	SYSTEM	00	6,112 K	Internet Infor...
LogonUI.exe	932	Running	SYSTEM	00	8,512 K	Windows Lo...
lsass.exe	944	Running	SYSTEM	00	6,332 K	Local Securit...
msdtc.exe	42...	Running	NETWORK SERVICE	00	2,768 K	Microsoft Dis...
PvsVmAgen...	14...	Running	SYSTEM	00	460 K	Citrix XenDes...
rdpclip.exe	29...	Running	TestUser1	00	2,352 K	RDP Clipboa...
rdpclip.exe	59...	Running	Administrator	00	2,352 K	RDP Clipboa...

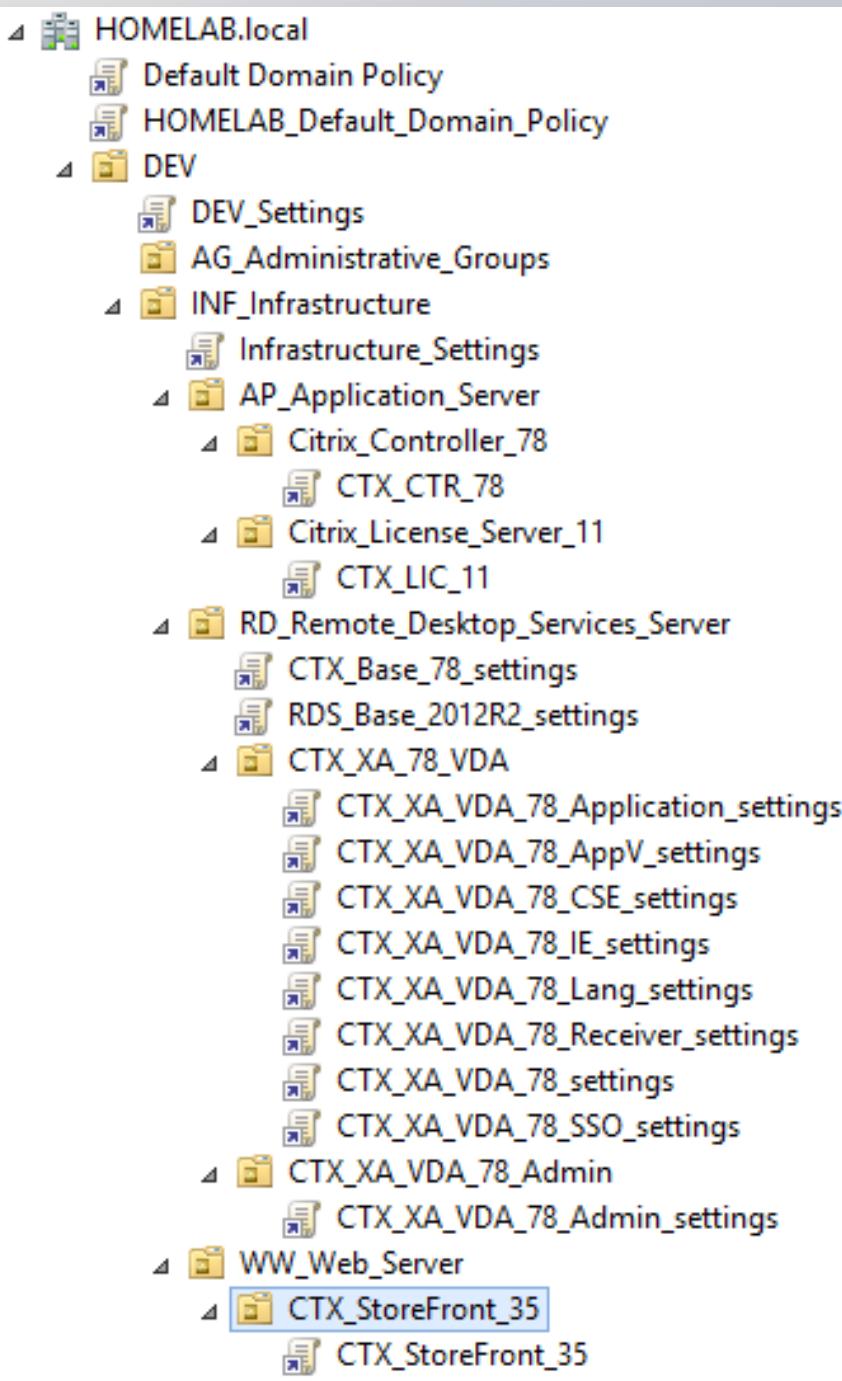
"Debugging Privilege" (sedebugprivilege) Policy in Local Policies\User rights assignment\Debug programs without „Administrators”

A wide-angle photograph of a densely populated hillside town, likely Tijuana, Mexico. The town is built on a steep slope, with numerous small houses, apartment complexes, and larger institutional buildings packed closely together. The architecture is mostly concrete or brick with some colorful accents. Sparse vegetation, including palm trees and other tropical plants, is scattered among the buildings. The sky is clear and blue.

GROUP POLICIES

GROUP POLICIES

- Expect to have lots of GPOs affecting your servers
 - 40 – 60 is no curiosity
- Set Group Policy refresh interval times
 - This policy setting specifies how often Group Policy for computers is updated while the computer is in use (in the background). This setting specifies a background update rate only for Group Policies in the Computer Configuration folder.
 - Can have a huge impact on user experience depending on environment
- Use GPOs for different topics
 - Internet Explorer
 - Applications
 - Receiver Settings...



- Organize your stages
- Try to build groups of servers
- Group settings for these servers in special GPO's
- Use only as many GPO's as needed
- avoid WMI filters
- Set GPO Loopback-mode on RDS OU

CITRIX GROUP POLICIES VS CITRIX POLICIES

- Keep your fingers on XenApp Settings when GPOs are not editable
- It can speed up your logons because it's faster than GPO (a little)
- It will make Troubleshooting easier or more complex
 - Depends from which side you are looking

ANTI VIRUS GUYS

Ooops, did I move that server to another group?

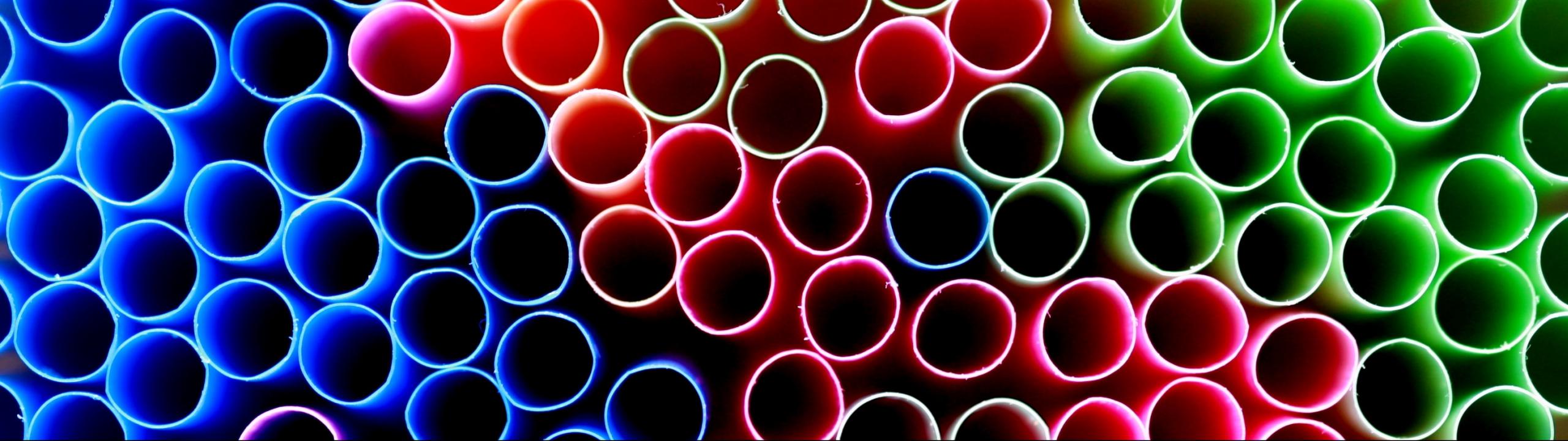


MICROSOFT RELATED ANTI-VIRUS EXCLUSIONS

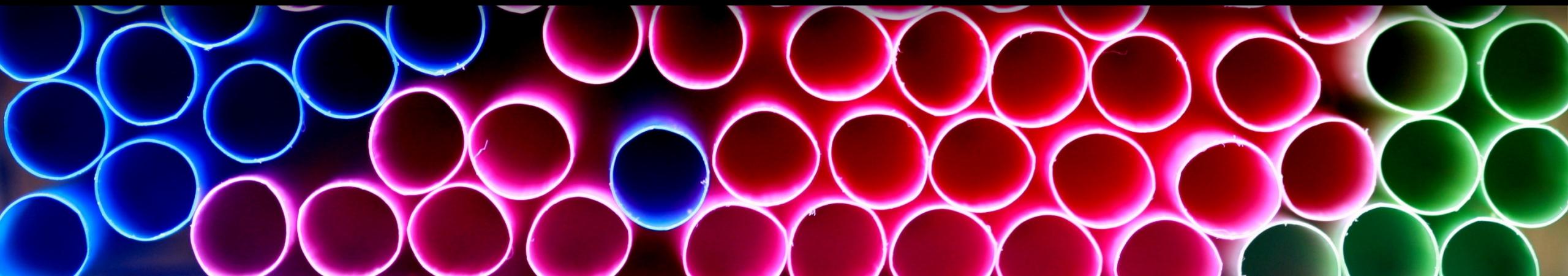
- Virus scanning recommendations for Enterprise computers that are running currently supported versions of Windows
- <https://support.microsoft.com/en-us/kb/822158>
- Recommended antivirus or antimalware exclusions when troubleshooting Application Virtualization (App-V) client issues
- <https://support.microsoft.com/en-us/kb/2576031>

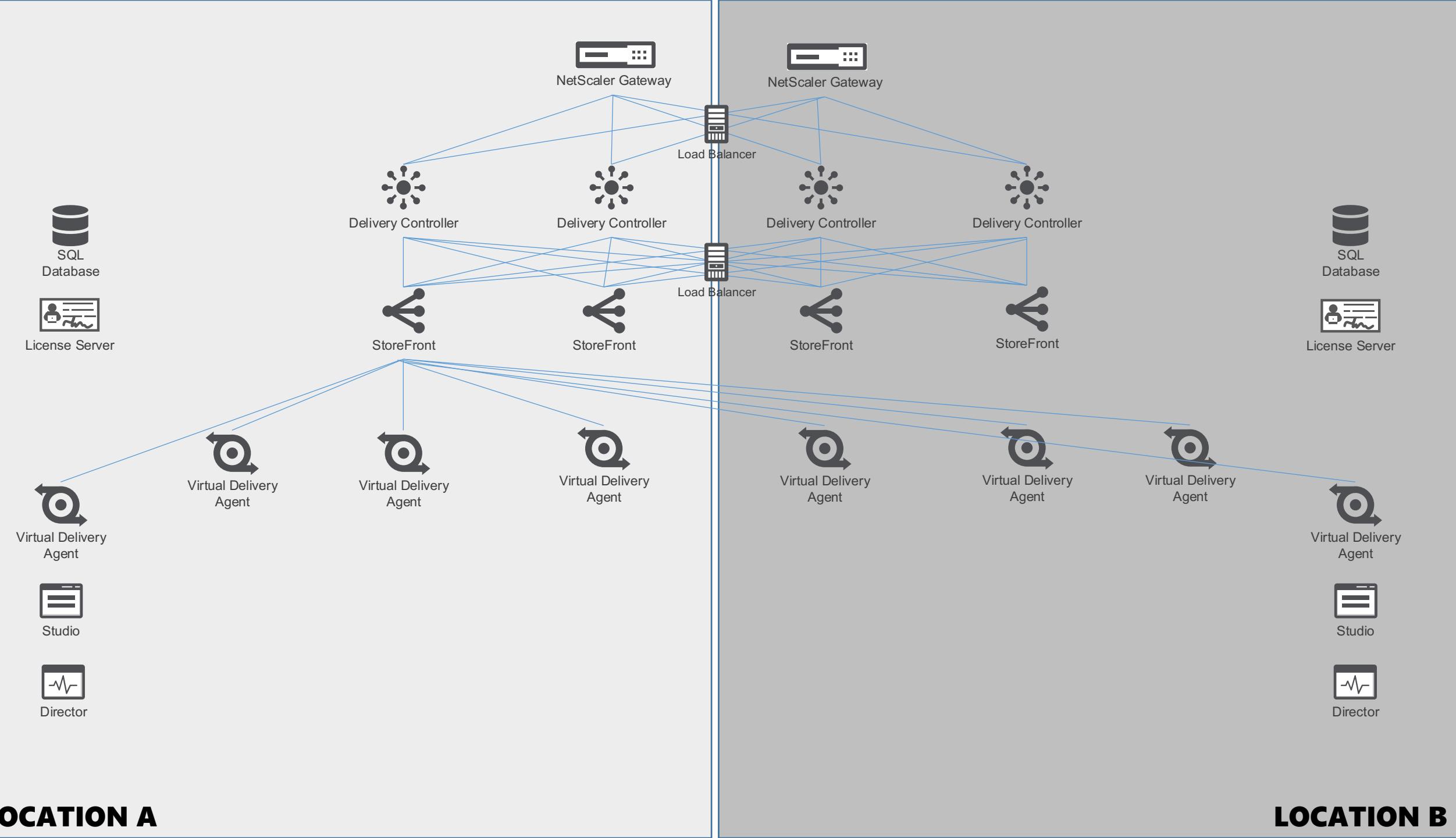
CITRIX RELATED ANTI-VIRUS EXCLUSIONS

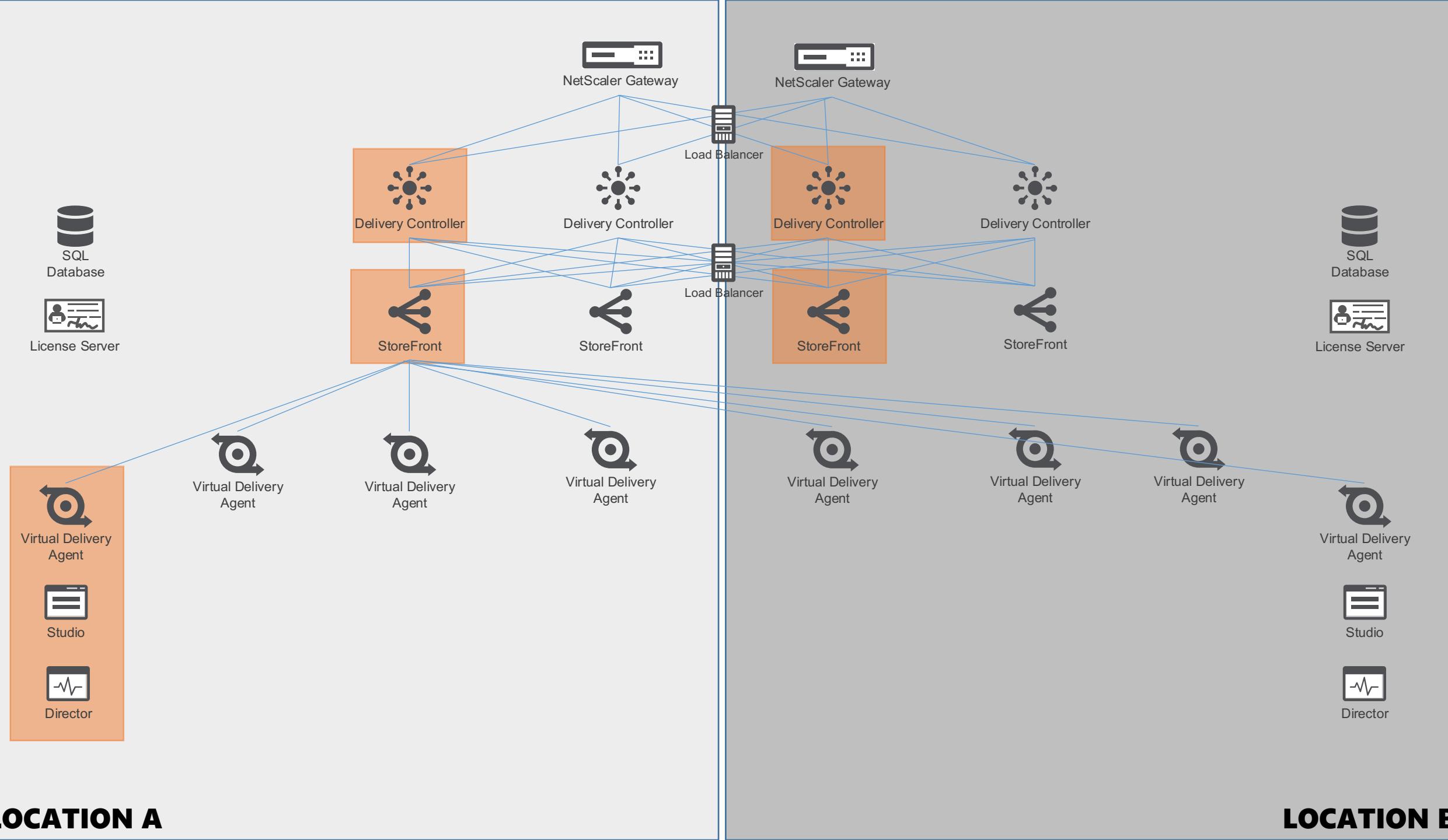
- Citrix Consolidated List of Antivirus Exclusions
- <https://www.citrix.com/blogs/2013/09/22/citrix-consolidated-list-of-antivirus-exclusions/>
- Citrix Guidelines for Antivirus Software Configuration
- <http://support.citrix.com/article/CTX127030>
- Provisioning Services Antivirus Best Practices
- <http://support.citrix.com/article/CTX124185>



INFRASTRUCTURE UPDATES







MANUAL UPGRADE

Upgrade the database and Site manually: This process includes generating and running scripts.

Script

DisableServices.ps1

Description

PowerShell script to be run by the Studio user on a Controller to disable product services.

UpgradeSiteDatabase.sql

SQL script to be run by the database administrator on the server containing the Site database, using a tool such as SQL Server Management Studio.

UpgradeMonitorDatabase.sql

SQL script to be run by the database administrator on the server containing the Monitor database, using a tool such as SQL Server Management Studio.

UpgradeLoggingDatabase.sql

SQL script to be run by the database administrator on the server containing the Configuration Logging database, using a tool such as SQL Server Management Studio. Run this script only if this database changes (for example, after applying a hotfix).

EnableServices.ps1

PowerShell script to be run by the Studio user on a Controller to enable product services.

UPGRADING... (1/2)

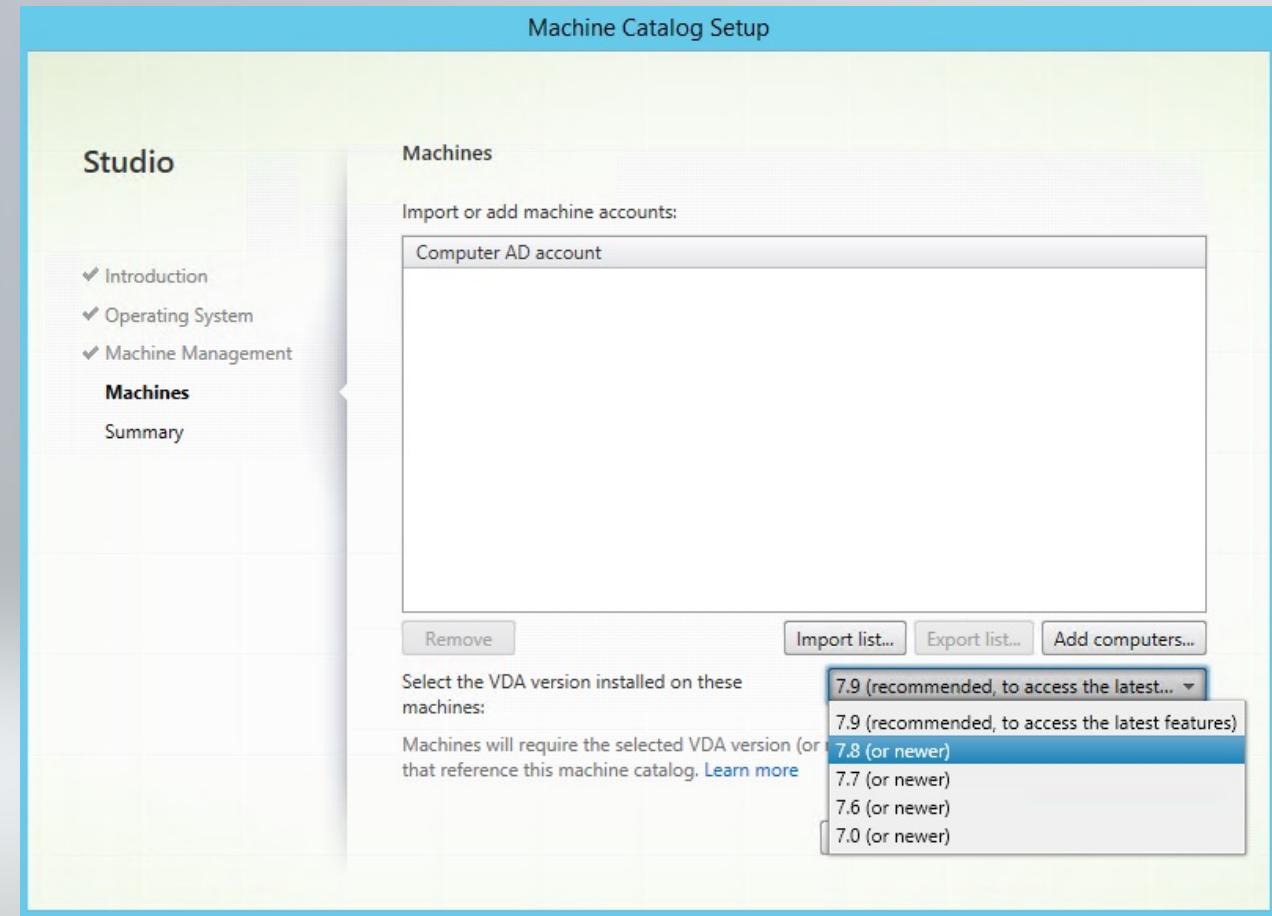
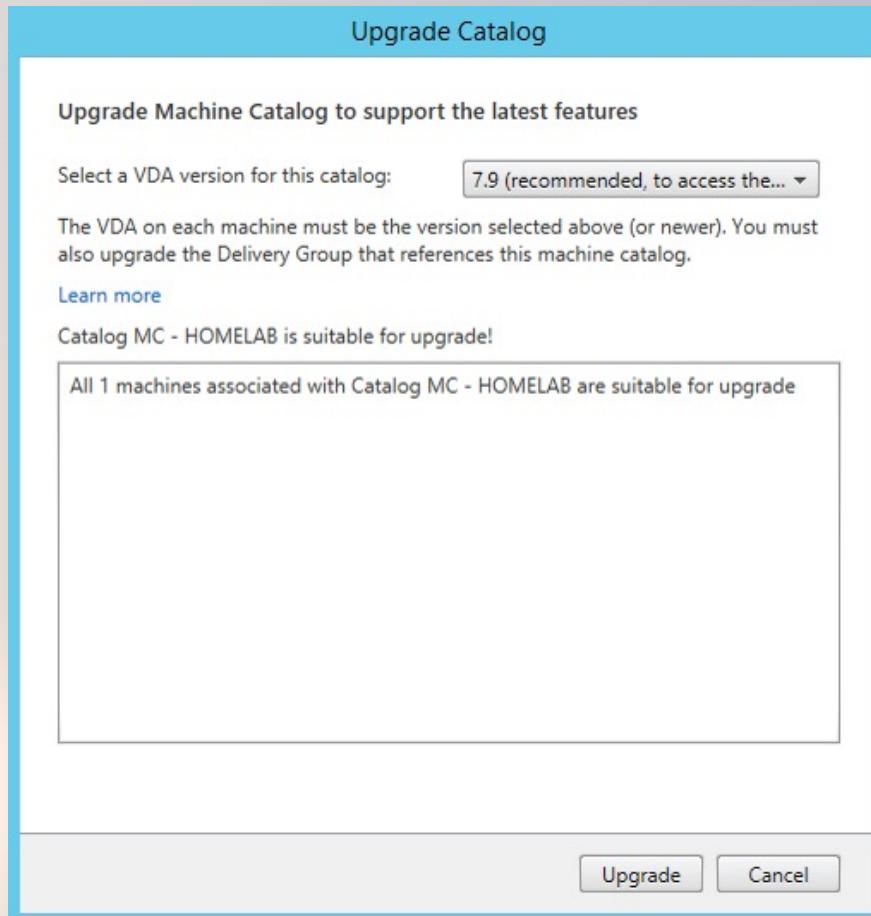
- Check your Subscription
- DB guys should do a backup (and restore test!!!)
 - Call-on-duty
- Create VM Snapshots of the infrastructure components
- Verify Site stability
 - Test-Site
 - Test-Catalog
 - Test Delivery Group
- Upgrade the first admin VDA
 - Studio
 - Director
- Upgrade half of the Controllers

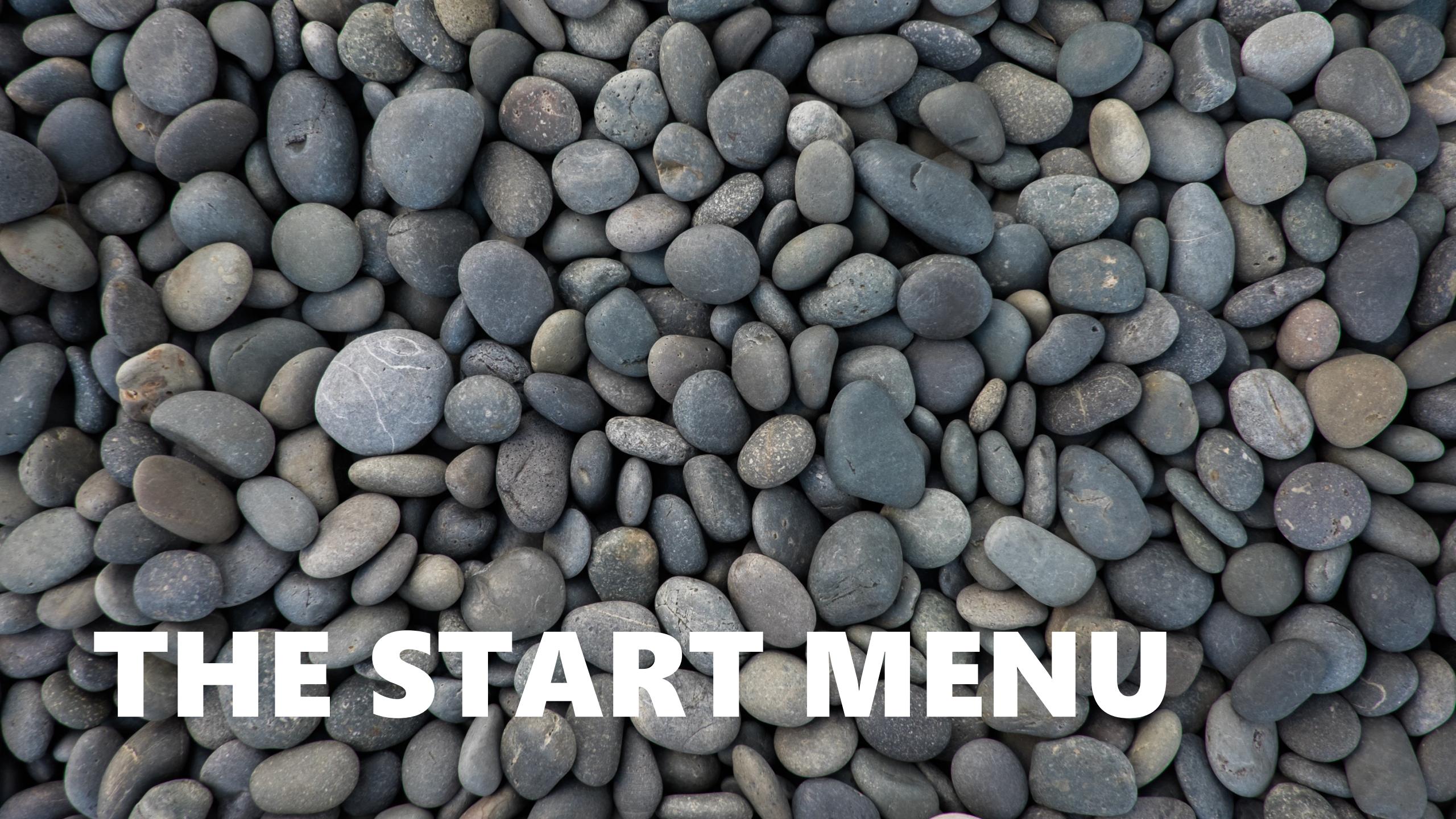
UPGRADING... (2/2)

- Run Studio and create the upgrade scripts
- Run disable.ps1 on the Controllers
- Tell the database guys to run the upgrade scripts
- Run enable.ps1 on the Controllers
- Run Studio and the upgrade should be fine
- Verify Site stability
- If it's fine upgrade the rest of the infrastructure / the same way

- StoreFront can be updated independently
- VDAs can run in mixed mode
 - Create different Machine Catalogs if you need it

MIXED ENVIRONMENTS

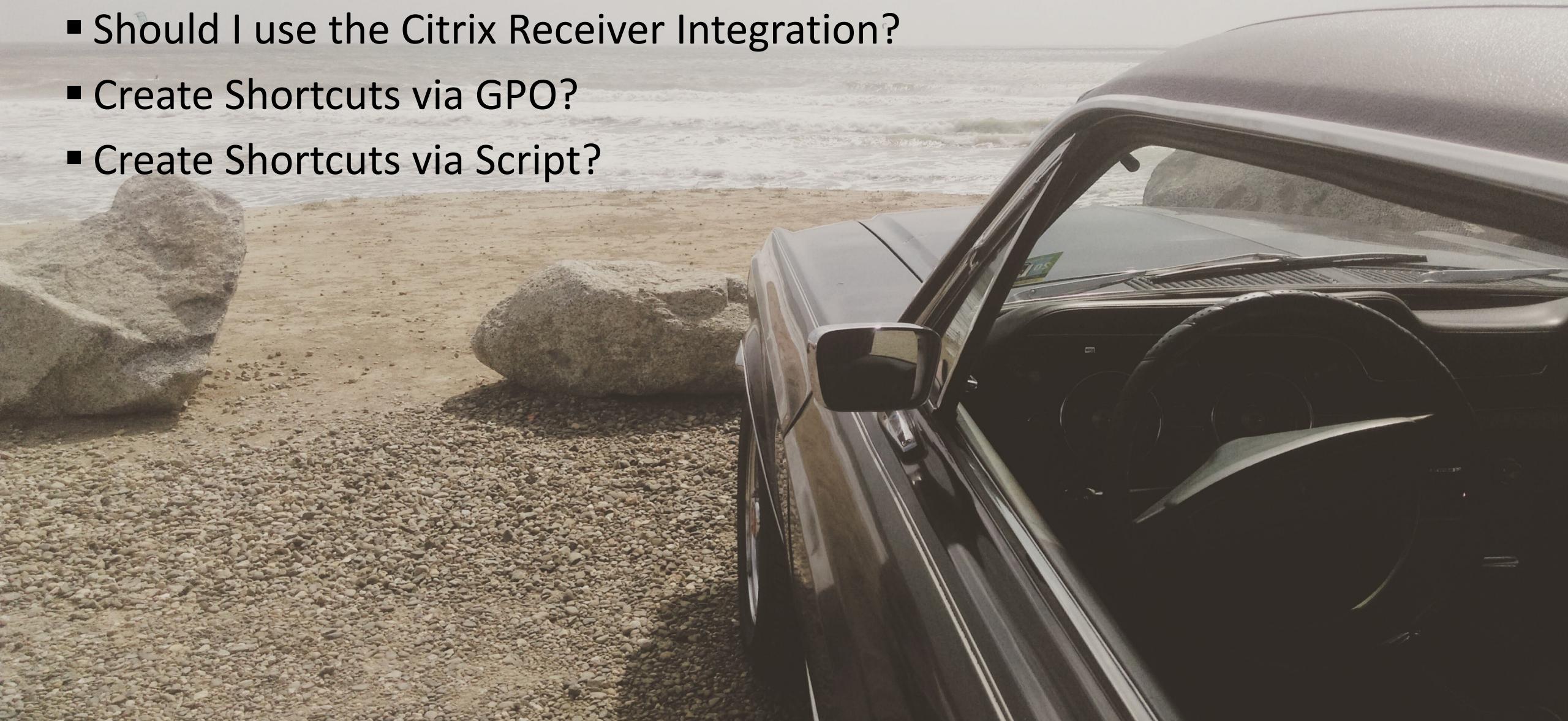




THE START MENU

RECEIVER VS. OLDSCHOOL

- Should I use the Citrix Receiver Integration?
- Create Shortcuts via GPO?
- Create Shortcuts via Script?



START MENU CONFLICTS

- Filter applications with Keywords
 - Create a Store for Published Desktops
 - Create a Store for Fat Clients
 - Choose a Keyword

Name	Description
Access 2016	KEYWORDS:prefer="Access 2016" HiddenOnFC
Calculator	Keywords:auto
Citrix Receiver	KEYWORDS:prefer="Citrix Receiver" HiddenOnFC

```
Set-DSResourceFilterKeyword -SiteId 1 -VirtualPath "/Citrix/STORENAME" -ExcludeKeywords @("HiddenOnFC")
```

<http://blogs.citrix.com/2014/03/27/hiding-applications-in-citrix-storefront/>

TROUBLESHOOTING



TROUBLESHOOTING RESOURCES

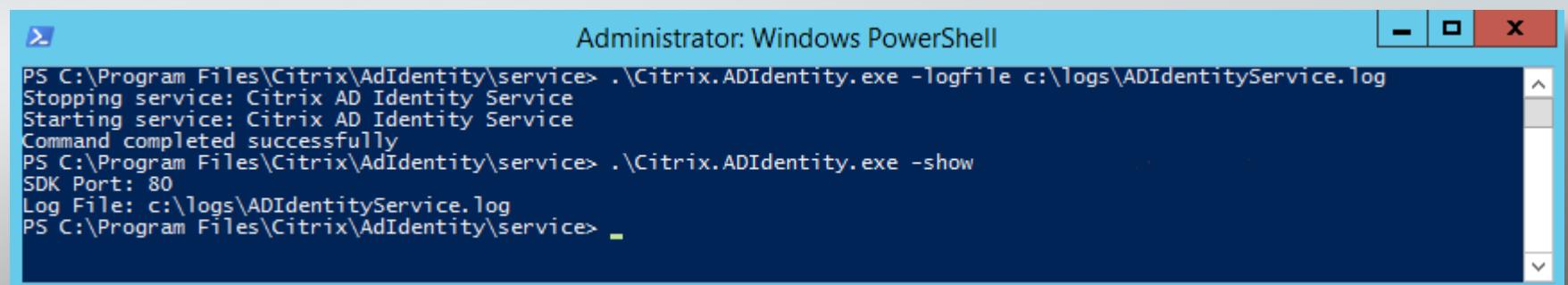
- Sysinternals
 - <https://technet.microsoft.com/en-us/sysinternals>
- Resultant Set Of policies
 - Run rsop.msc
- Citrix Supportability Pack
 - <http://support.citrix.com/article/CTX203082>
- uberAgent
 - <https://uberagent.com/>



TROUBLESHOOT CITRIX SERVICES

- C:\Program Files\Citrix
 - Citrix.ADIdentity.exe
 - Citrix.Analytics.exe
 - BrokerService.exe
 - Citrix.Configuration.exe
 - Citrix.ConfigurationLogging.exe
 - Citrix.DelegatedAdmin.exe
 - Citrix.EnvTest.exe
 - Citrix.Host.exe
 - Citrix.MachineCreation.exe
 - Citrix.Monitor.exe
 - Citrix.Storefront.exe

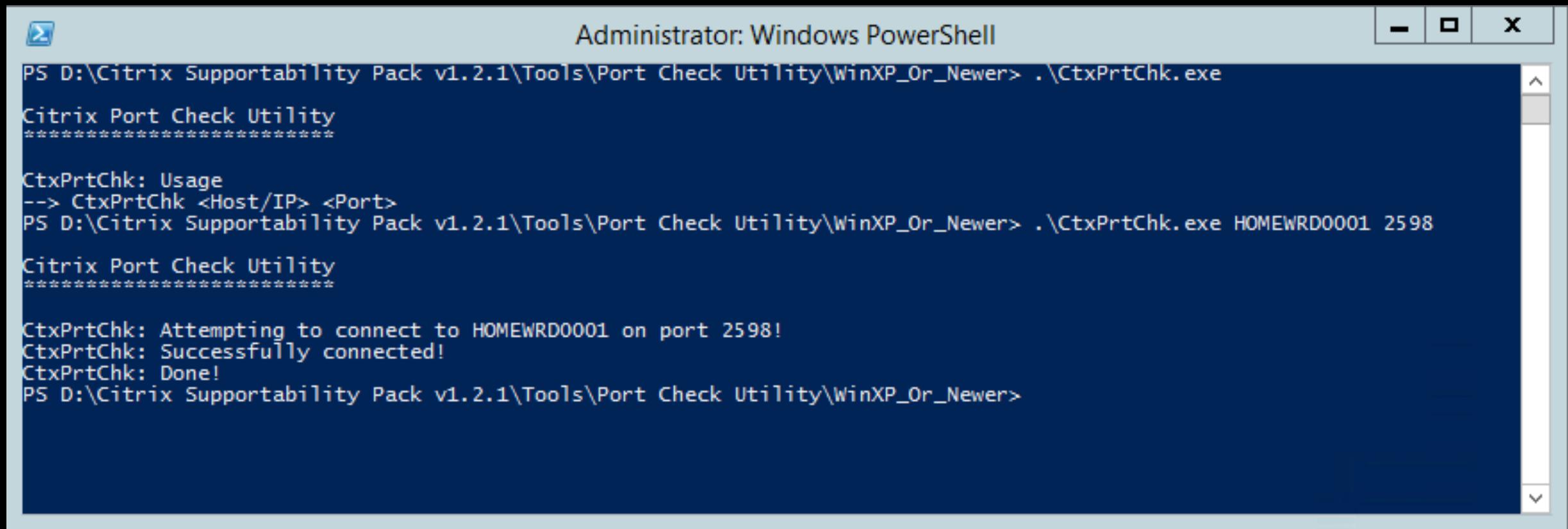
```
<appSettings>
    <add key="LogToCDF" value="1" />
    <add key="BreakOnRun" value="false" />
    <add key="LogFileName" value="c:\logs\ADIdentityService.log" />
</appSettings>
```



A screenshot of a Windows PowerShell window titled "Administrator: Windows PowerShell". The window shows command-line output related to the Citrix AD Identity Service. The commands run are:

```
PS C:\Program Files\Citrix\AdIdentity\service> .\Citrix.ADIdentity.exe -logfile c:\Logs\ADIdentityService.log
Stopping service: Citrix AD Identity Service
Starting service: Citrix AD Identity Service
Command completed successfully
PS C:\Program Files\Citrix\AdIdentity\service> .\Citrix.ADIdentity.exe -show
SDK Port: 80
Log File: c:\Logs\ADIdentityService.log
PS C:\Program Files\Citrix\AdIdentity\service>
```

POR T CHECK UTILITY



The screenshot shows an 'Administrator: Windows PowerShell' window. The command run is `PS D:\Citrix Supportability Pack v1.2.1\Tools\Port Check Utility\WinXP_Or_Newer> .\CtxPrtChk.exe`. The output is:

```
Citrix Port Check Utility
*****
CtxPrtChk: Usage
--> CtxPrtChk <Host/IP> <Port>
PS D:\Citrix Supportability Pack v1.2.1\Tools\Port Check Utility\WinXP_Or_Newer> .\CtxPrtChk.exe HOMEWRD0001 2598
Citrix Port Check Utility
*****
CtxPrtChk: Attempting to connect to HOMEWRD0001 on port 2598!
CtxPrtChk: Successfully connected!
CtxPrtChk: Done!
```

Citrix XenDesktop VDA's do not listen for incoming ICA connections until a client is actually ready to connect as signaled by the DDC. As such, port checking utilities such as this one, cannot be used as a reliable standalone mechanism to validate the connectivity to Citrix XenDesktop VDA's.

Select Administrator: Windows PowerShell

XDPING

Local Machine::

NetBIOS Name = HOMEWRD0001
OS Version = Microsoft Windows NT 6.2.9200.0
Platform = X64 Platform

Computer Domain: HOMELAB.local
Role = Member Server
Membership = Verified, SID:S-1-5-21-2776438779-3707947013-98081058-1115 [OK]

User::

User Name = administrator
User Domain = HOMELAB
Authentication = Kerberos [OK]
Groups:
HOMELAB\Domain Users
Everyone
BUILTIN\Remote Desktop Users
BUILTIN\Users
BUILTIN\Administrators
NT AUTHORITY\REMOTE INTERACTIVE LOGON
NT AUTHORITY\INTERACTIVE
NT AUTHORITY\Authenticated Users
NT AUTHORITY\This Organization
LOCAL
HOMELAB\HOME-APPV-ADMINS
HOMELAB\Domain Admins
HOMELAB\SQL_Admins
HOMELAB\Group Policy Creator Owners
HOMELAB\Schema Admins
HOMELAB\Enterprise Admins
Authentication authority asserted identity
HOMELAB\Denied RODC Password Replication Group

Local Machine Time::

UTC = 5/22/2016 3:32:11 PM
Local = 5/22/2016 5:32:11 PM (W. Europe Daylight Time)
DST = Yes
NtpServer = time.windows.com,0x9

Domain Controller(s) Time::

Date/Time from HOMELAB.local : 5/22/2016 5:32:11 PM : Time difference (mins): 0 [OK]

UPMCONFIGCHECK.PS1

```
Administrator: Windows PowerShell
TemplateProfileIsMandatory is Disabled from Default
GetPolicySingleSetting: Check HKLM:\SOFTWARE\ Policies\Citrix\UserProfileManager\ : TemplateProfileOverridesLocalProfile
GetPolicySingleSetting: Check HKLM:\SOFTWARE\ Policies\Citrix\UserProfileManagerHDX\ : TemplateProfileOverridesLocalProfile
GetPolicySingleSetting: Check INI file section General Settings, setting name: TemplateProfileOverridesLocalProfile
TemplateProfileOverridesLocalProfile is Disabled from Default
GetPolicySingleSetting: Check HKLM:\SOFTWARE\ Policies\Citrix\UserProfileManager\ : TemplateProfileOverridesRoamingProfile
GetPolicySingleSetting: Check HKLM:\SOFTWARE\ Policies\Citrix\UserProfileManagerHDX\ : TemplateProfileOverridesRoamingProfile
GetPolicySingleSetting: Check INI file section General Settings, setting name: TemplateProfileOverridesRoamingProfile
TemplateProfileOverridesRoamingProfile is Disabled from Default
-----
- Checking XenApp or XenDesktop? -
-----
/ / / / / / / / / / / / / / / / / /
/ / / / / / / / / / / / / / / / / /
non-provisioned Server - recommend to delete cached profiles
Final recommendation: non-provisioned Server - recommend to delete cached profiles
*** overwriting default for policy DeleteCachedProfilesOnLogoff : default 0 changed to autoSetting 1
GetPolicyGeneralSetting: Check HKLM:\SOFTWARE\ Policies\Citrix\UserProfileManager\ : DeleteCachedProfilesOnLogoff
DeleteCachedProfilesOnLogoff = 1
DeleteCachedProfilesOnLogoff is Enabled
DeleteCachedProfilesOnLogoff: actual/effective setting (Enabled) matches preferred setting (Enabled)
GetPolicyGeneralSetting: Check HKLM:\SOFTWARE\ Policies\Citrix\UserProfileManager\ : ProfileDeleteDelay
ProfileDeleteDelay = 10
*** Warning: ProfileDeleteDelay actual/effective setting () does not match preferred setting (0)
/ / / / / / / / / / / / / / / / / /
/ / / / / / / / / / / / / / / / / /
/ / / / / / / / / / / / / / / / / /
GetPolicySingleSetting: Check HKLM:\SOFTWARE\ Policies\Citrix\UserProfileManager\ : PSEnabled
PSEnabled is Disabled from Policy
*** overwriting default for policy PSEnabled : default 0 changed to autoSetting 1
GetPolicyGeneralSetting: Check HKLM:\SOFTWARE\ Policies\Citrix\UserProfileManager\ : PSEnabled
PSEnabled = 0
PSEnabled is Disabled
*** Warning: PSEnabled actual/effective setting (Disabled) does not match preferred setting (Enabled)
/ / / / / / / / / / / / / / / / / /
/ / / / / / / / / / / / / / / / / /
/ / / / / / / / / / / / / / / / / /
GetPolicyGeneralSetting: Check HKLM:\SOFTWARE\ Policies\Citrix\UserProfileManager\ : PSAAlwaysCache
GetPolicyGeneralSetting: Check HKLM:\SOFTWARE\ Policies\Citrix\UserProfileManagerHDX\ : PSAAlwaysCache
GetPolicyGeneralSetting: Check INI file section General Settings, setting name: PSAAlwaysCache
PSAAlwaysCache =
PSAAlwaysCache is unset and will default to Disabled
PSAAlwaysCache: actual/effective setting (Disabled) matches preferred setting (Disabled)
GetPolicyGeneralSetting: Check HKLM:\SOFTWARE\ Policies\Citrix\UserProfileManager\ : PSAAlwaysCacheSize
GetPolicyGeneralSetting: Check HKLM:\SOFTWARE\ Policies\Citrix\UserProfileManagerHDX\ : PSAAlwaysCacheSize
```

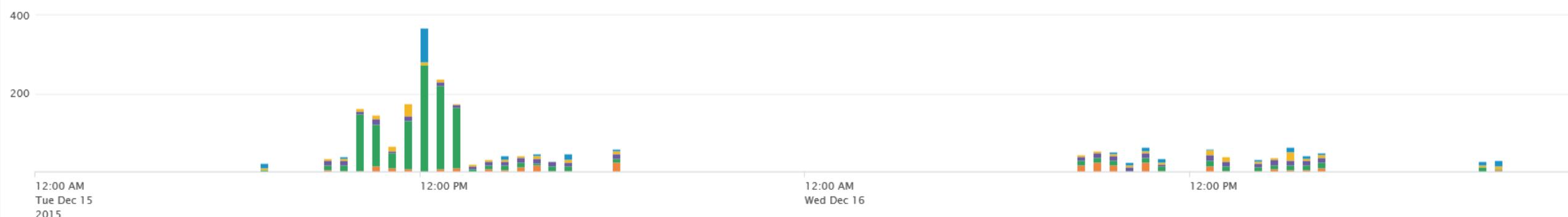
USE UBERAGENT

- WMI Filters on GPOs
- Problems with Citrix Group Policy Extensions
- Missing Virus Scan exclusions
- Backend servers with poor performance
- Logon scripts with timeouts and errors



Total duration:	User profile:	Group Policy:	AD logon script:	GP logon script:	Shell start:
94.45 s	9.49 s	20.16 s	30.29 s	n/a	24.16 s
Total duration:	User profile:	Group Policy:	AD logon script:	GP logon script:	Shell start:
39.84 s	7.45 s	10.08 s	9.94 s	n/a	5.46 s

Logon duration over time



OPERATIONS



Never forget who is doing the work after you leave



Simpler and faster

DOCUMENTATION

Carl Webster's Documentation scripts
<http://carlwebster.com/downloads/>

.\\XD7_Inventory.ps1 -AdminAddress DDC01 –MachineCatalogs –DeliveryGroups –Applications –Hardware -PDF

MAINTENANCE

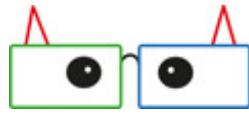
- Schedule and plan with it from the beginning
- 24/7 workloads spread all over the world need special attention for service availability
- Don't forget the deployment cycles
- Dane Young's Rolling reboot scripts
 - <http://blog.itvce.com/2013/12/09/citrix-xenapp-rolling-reboot-scripts/>
 - XenApp_XenDesktop7_Chained_Reboot.ps1

CONCLUSION....

Measure, Measure, Measure, Measure, Measure, Measure, Measure, Measure,
Measure, Measure, Measure, Measure, Measure, Measure, Measure, Measure,
Measure, Measure, Measure, Measure, Measure, Measure, Measure, Measure,
Measure, Measure, Measure, Measure, Measure, Measure, Measure, ...

- Rule #1
 - Don't be a jerk
- Rule #2
 - If the world doesn't want to be saved... you won't save it.
- Rule #3
 - Make friends wherever possible...beer and cookies help

ALWAYS SEE THE BIG PICTURE



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THANK YOU VERY MUCH!

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