



one-X Attendant with Citrix XenDesktop

Installation of a XenDesktop environment with Provisioning Services to operate one-X Attendant in a virtual desktop

10th.April.2013

Version 2.0

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Version: 04/13

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Documentation

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1 Introduction

This document describes in brief the installation and configuration of the necessary components to build a XenDesktop environment for operating the one-X Attendant client in a virtual desktop.

The virtual desktop is realized with a streamed desktop. For this the component 'Citrix Provisioning Services' is required.

The XenDesktop environment is built on a XenServer 6.1 virtual platform, except the Citrix License Server. It's installed on a separate physical machine. The installation as well as the configuration of the License Server is not described in this document.

The names of virtual machines, IP addresses, etc., as well as the dimensioning of the VMs (CPU, RAM, HD) are examples, and belong to a specific test installation. The host name is always identical with the VM name.

The arrangement of the sub chapters in chapter 2 (Installation and Configuration) represents the installation sequence.

2 Prerequisites

2.1 Citrix XenServer

The XenServer runs Version 6.1.0 and is installed according to the instructions of the Citrix installation guide, available on the Citrix HP.

The following hot fixes are installed:

XS61E001, XS61E003, XS61E004, XS61E006, **XS61E009**, **XS61E010**

The hot fixes have to be installed **before** starting to deploy XenDesktop.

XS61E009 and XS61E010 are very important. Without these fixes, a streamed Windows 7 desktop cannot boot. The result is a blue screen.

2.2 one-X Attendant Server

The one-X Attendant Server (version 4.02.010, lower versions are not supported) is installed in a XenServer VM named **1XAServer** with W2k8 R2 standard SP1 (1 CPU, 1024 MB RAM, 25 GB HD).

The Absence Info Server (AIS) is also installed in this VM. The AIS has connection to an Exchange Server 2007. The Exchange Server is installed on a VMware virtual server machine.

The one-X Attendant Server and the AIS are installed as described in the corresponding installation manual.

3 Installation and Configuration

3.1 Domain, AD, DHCP Server and DNS Server

- Create a VM named **vDmC** with W2k8 R2 standard SP1 (1 CPU, 1024 MB RAM, 25 GB HD).
- Install XenServer Tools (xs-tools.iso)
- Install Active Directory (AD) (domain: **xd.icc**)
 - Create domain users **xduser01**, ..., **xduser05** and put them into the Administrators Group
 - Create user group **xdusers** and add users xduser01, ..., xduser05 to it
 - Create Organizational Unit (OU) **PVS vDesktops**
- Install and configure DHCP Server
 - Create IPv4 Scope with an *Address Pool* of at least 3 IP addresses
 - Configure IPv4 Scope Options:
 - ☒ 066 Boot Server Host Name = **vpvs.xd.icc**
 - ☒ 067 Bootfile Name = **ARDBP32.BIN**
- Install and configure DNS Server
 - Forward Lookup Zone
 - Reverse Lookup Zone

3.2 XenDesktop

3.2.1 Desktop Delivery Controller (DCC)

- Create a VM named **vController** with W2k8 R2 standard SP1 (1 CPU, 1024 MB RAM, 25 GB HD).
- Install XenServer Tools (xs-tools.iso)
- Assign static IP address
- Add the VM to the domain (xd.icc)
- Login with the domain administrator (xd\Administrator)
- Turn firewall off
- Insert the XenDesktop installation image (XenDesktop56.iso) into the virtual DVD drive and run **AutoSelect.exe**
- Click **Install XenDesktop**

- **License Agreement**

- ☒ I accept the terms and conditions

- **Select Components to Install**

- ☒ XenDesktop Controller
- ☒ Web Access
- ☒ Desktop Studio
- ☒ Desktop Director
- ☒ License Server

Install location: C:\Program Files\Citrix

- ☒ Install SQL Server Express

- **Firewall Configuration**

Windows Firewall is enabled

- License Server (TCP ports 27000, 7279)
- ☒ Enable these ports

- **Summary**

- > Install

- **Installation Successful**

- ☒ Configure XenDesktop after closing
- > close

3.2.2 Deploy XenDesktop

- In the right-hand window of the Citrix Desktop Studio select **Desktop deployment**

- **Site**

Site: <site> (AvayaXDsite)

Database configuration:

- ☒ Use default database
- ☐ Use existing database:

- **Licensing**

Connect to your license server:

License server: <license server address>:27000 -> Connect

Set your XenDesktop edition and licensing model:

- ☐ Use XenDesktop 30-day free trial
- ☒ Select from existing licenses

<i>Product</i>	<i>Model</i>
<input checked="" type="radio"/> Citrix XenDesktop Enterprise	User/Device

- **Connection**

Host type: *Citrix XenServer*
Address: http://<xenserver ip-address>
User name: root
Password: <password>
HA Servers: None selected

Connection name: <connection name> (AvayaXDconn)

Virtual machines:

- ☒ Use XenDesktop to create virtual machines
- ☐ Manually create virtual machines

- **Host**

Network

- ☒ Network 0

- **Storage**

Virtual machine storage

- ☒ Local storage

Personal vDisk storage:

- ☒ Use same storage for virtual machines and personal vDisk
- ☐ Use different storage for personal vDisk

- **Summary**

Host name: <host name> (AvayaXDhost)

3.3 Provisioning Services

3.3.1 Provisioning Server

- Create a VM named **vPvS** with W2k8 R2 standard SP1 (1 CPU, 1024 MB RAM, 25 GB HD).
- Install XenServer Tools (xs-tools.iso)
- Add the VM to the domain (xd.icc)
- Assign static IP address
- Login with the domain administrator (xd\Administrator)
- Turn firewall off
- Insert the Provisioning Services installation image (PVS_61.iso) into the virtual DVD drive and open folder *SQL Server 2005 Express*
- Run SQLEXPRESS.EXE and follow the instructions on the screen (ignore warning *ASP.Net ...*)
- Run autorun.exe
- Click **Console Installation**

- **Setup Type**

- ☒ Complete

- Click **Server Installation**
accept default settings

- Server configuration (starts automatically after server installation complete)

- **DHCP Services**

- ☒ The service that runs on another computer

- **PXE Services**

- ☒ The service that runs on this computer
Provisioning Services PXE Service

- **Farm Configuration**

- ☒ Create farm

- **Database Server** -> Browse...

Server name: <name sql-server>
Instance name: <instance name>
Optional TCP port: <leer>

- ☐ Specify database mirror failover partner

- **New Farm**

Database name: ProvisioningServices (default)
Farm name: <farm> (AvayaPVSfarm)
Site name: <site> (AvayaPVSSite)
Collection name: <collection> (Win7devices)

- ☒ Use Active Directory groups for security

Farm Administrator Group:
<domain>/Builtin/Administrators (default)

- **New Store**

Store Name: <store> (vDiskStore)
Default Path: <local | CIFS(Windows Share) | NFS> Browse ...

- **License Server**

License server name: <name or IP-address of Citrix License Server>

License server port: 27000 (default)

☒ Validate license server version and communication

- **User Account**

☒ Network service account

☐ Specify user account (Required when using a Windows Share)

☐ Local system account (Use with SAN)

☒ Configure the Database for the account

- **Active Directory Computer Account Password**

☐ Automate computer account password updates

- **Network Communications**

Available network cards for stream services: ☒ <ip-address NIC (XenServer)>

First communications port: 6890 (default)

Console port: 54321 (default)

- **TFTP Option and Bootstrap Location**

☒ Using the Provisioning Services TFTP service

C:\ProgramData\Citrix\Provisioning Services\Tftpboot\ARDPB32.BIN

- **Stream Servers Boot List**

IP Address	Subnet Mask	Gateway	Port
<ip-address NIC>	0.0.0.0	0.0.0.0	6910 (default)

Advanced... (default)

- **Finish**

☒ Automatically Start Services

-> Finish

3.3.2 Base Image

- Create a VM named **Win7PVSBBase** with Windows 7 SP1 (1 CPU, 1024 MB RAM, 25 GB HD).
- Install XenServer Tools (xs-tools.iso)
- Set network adapter to DHCP
- Insert the Provisioning Services installation image (PVS_61.iso) into the virtual DVD drive
- Run autorun.exe
- Click **Target Device Installation**
 - accept default settings
 - **Installation Wizard Completed**
 - ☐ Launch Imaging Wizard
 - Reboot -> Yes

3.3.3 Boot Image (iso)

- On VM **vPvS** start the Provisioning Services Boot Device Manager (BDM)
(Start -> All Programs -> Citrix -> Provisioning Services -> **Provisioning Services Boot Device Manager**)
 - **Specify the Login Server**
 - ☒ Use static IP address for the server

IP Address	Port
<ip-address PVS Server>	6910
 - **Set Options**
 - accept default settings
 - **Burn the Boot Device**
 - ☒ Use DHCP to retrieve Device IP
 - ☐ Use Static Device IP
 - Boot Device
Citrix ISO Image Recorder
Burn -> save boot image (PVS_Boot.iso)
- Copy the ISO file to a library where XenCenter has access

3.3.4 Virtual Disk (vDisk)

- On VM **Win7PVSB** start the Imaging Wizard
(Start -> All Programs -> Citrix -> Provisioning Services -> **Imaging Wizard**)

- **Connect to Farm**

Server: <ip-address PVS server> | vPvS.xd.icc
Port: 54321 (default)

- ☐ Use my Windows credentials
- ☒ Use these credentials (PVS Server)
 - User name: *Administrator*
 - Password: <administrator password>
 - Domain: xd.icc

- **Select New or Existing vDisk**

- ☒ Create new vDisk
- ☐ Use existing vDisk

- **New vDisk**

vDisk name: <vdisk> (Win7vD)
Store: <store> (vDiskStore)
VHD Type: Dynamic
VHD block size: 2 MB (default)

- **Microsoft Volume Licensing**

- ☒ None !!! for more information refer to chapter 4.3 !!!
- ☐ KMS
- ☐ MAC

- **Configure Image Volumes**

accept default settings

- **Add Target Device**

Target device name: <target device> (Win7TD)
MAC: <NIC xenserver>
Collection: <collection> (Win7devices)

- **Summary of Farm Changes**

- > Optimize for Provisioning Services <-
- Provisioning Services Device Optimization Tool
 - accept default settings
- > Finish
- > Reboot ? No

- Right click on the VM **Win7PVSBBase**, select *Properties* and go to *Boot Options*.
Enable DVD Drive, set it to first position in boot order and disable Hard Disk and Network.
- Insert the boot image PVS_Boot.iso into the virtual DVD drive
- Reboot VM and login
- The image creation process starts automatically
- After the process has completed, click *Finish* (ignore warnings, errors see log file -> *Log*)
- Shutdown VM

- Open the *Provisioning Services Console* on PVS server (VM **vPvS**)
- Navigate to *Device Collection* -> *Win7devices*
- Right click on Win7TD, select *Properties* and change Boot from: Hard Disk to **vDisk**

- Go to the *storage* tab of the VM **Win7PVSBBase** in XenCenter and *Detach* the local storage on the XenServer
- Start VM (-> VM now boots from the vDisk image over the network)
- Login with Administrator account
- Turn firewall on
- Add the VM to the domain (xd.icc)
- Login with local Administrator account
- **Install one-X Attendant Client**
- **Outlook standard installation for absence info with Exchange Server**
- Install further common software (e.g. Adobe Reader, Word, Excel, McAfee, ...)
- Add the domain group xdusers (xd\xdusers) to the group of local administrators
- Insert the XenDesktop installation image (XenDesktop56.iso) into the virtual DVD drive and run **AutoSelect.exe**
- Click **Install Virtual Desktop Agent -> Advanced Install**
 - **License Agreement**
 - ☒ I accept the terms and conditions
 - **Select the Virtual Desktop Agent you would like to install**
 - ☒ Virtual Desktop Agent
 - ☐ Virtual Desktop Agent for HDX 3D Pro
 - **Select Components to Install**
 - ☒ Virtual Desktop Agent
 - ☐ Citrix Receiver
 - **Personal vDisk Configuration**
 - ☒ No, don't enable personal vDisk right now
 - ☐ Yes, enable personal vDisk

- **Controller Location**
 - ⊙ Manually enter controller location
 <vm vcontroller on xenserver> check
 - Select from Active Directory
 - Configure at a later time
- **Virtual Desktop Configuration**
 accept default settings
- **Summary**
 Install
- **Installation successful**
 - ☒ Restart machine (required to complete install)

- Shutdown VM

- Open the *Provisioning Services Console* on PVS server (VM **vPvS**)
- Navigate to *Stores* -> *vDiskStore*
- Right click on Win7vD, select *Properties* and change **Access mode** to **Standard Image (multi-device, read only access)**

3.3.5 VM Template

- Create a **diskless** VM named **Win7PVSTemplate** with *Windows 7 (32-bit) Template* (1 CPU, 1024 MB RAM), but don't start the VM
- Right click on the VM, select *Properties* and go to *Boot Options*.
 Enable DVD Drive, set it to first position in boot order and disable Hard Disk and Network.
- Insert the boot image PVS_Boot.iso into the virtual DVD drive
- Right click on the VM and select *Convert to Template...*

3.3.6 Provisioning VMs

- Open the *Provisioning Services Console* on PVS server (VM **vPvS**)
- Navigate to *Sites*
- Right click on **AvayaPVSSite** and select *XenDesktop Setup Wizard...*

- **Welcome to XenDesktop**
- **XenDesktop Controller**
 XenDesktop Controller address:
 <ipadr | fqdn> (vController.xd.icc)

- **Hosts**

☒ <host> (AvayaXDhost)
Set Template ...

- Host template

Host: <host> (AvayaXDhost)
Username: root
Password: <password> -> Log On

Select a template for the host.
<template> (Win7PVSTemplate)

☒ <host> (AvayaXDhost) <template> (Win7PVSTemplate)

- **Collection and vDisk**

Collection:
<collection> (Win7devices)

Standard-mode vDisk:
<vDisk Storage>\<vdisk> (vDiskStore\Win7vD)

- **Catalog**

☒ Create a new catalog
Machine type: *Streamed*
Catalog name: <catalog name> (XDCatalog-Win7STR)

- **Virtual machines**

Number of virtual machines to create: 2
vCPUs: 1
Memory: 1024

Active Directory computer accounts:
☒ Create new accounts

- **Active Directory accounts and location**

Domain: <domain> (xd.icc)
<domain>
↳ <organizational unit> (PVS vDesktops)
<domain>/<organizational unit> (xd.icc/PVS vDesktops)
Account naming scheme: **Win7PVSstr-##** 0-9

- **Summary**

Finish

Result:

- 2 virtual machines (**Win7PVSstr-01**, **Win7PVSstr-02**) were created (see **XenCenter**)
- A catalog (**XDCatalog-Win7STR**) was created (see Desktop Studio in VM **vController**)

3.3.7 Create Desktop Group

- Open Citrix Desktop Studio in VM **vController** and navigate to *Assignments*
- Right click and select **Create Desktop Group**

- **Catalog**

Select machines for Assignment

<i>Catalog</i>	<i>Description</i>	<i>Available</i>
XDCatalog-Win7STR	2	
Unassigned machines		
Total available:	2	
Add machines:	2	

- **Users**

Select users

xd\xdusers	-> Add...
------------	-----------

Desktops per user: 1

- **Delegation**

Delegate to:

☒ XD\Administrator (Full)

- **Summary**

Summary

Type:	<i>Share desktop</i>
Catalog	<i>XDCatalog-Win7STR</i>
Machines without users:	2
Users:	<i>XD\xdusers</i>
Delegate to:	-
Display name:	Win7STR
Desktop Group name:	XDDesktopGroup-Win7STR

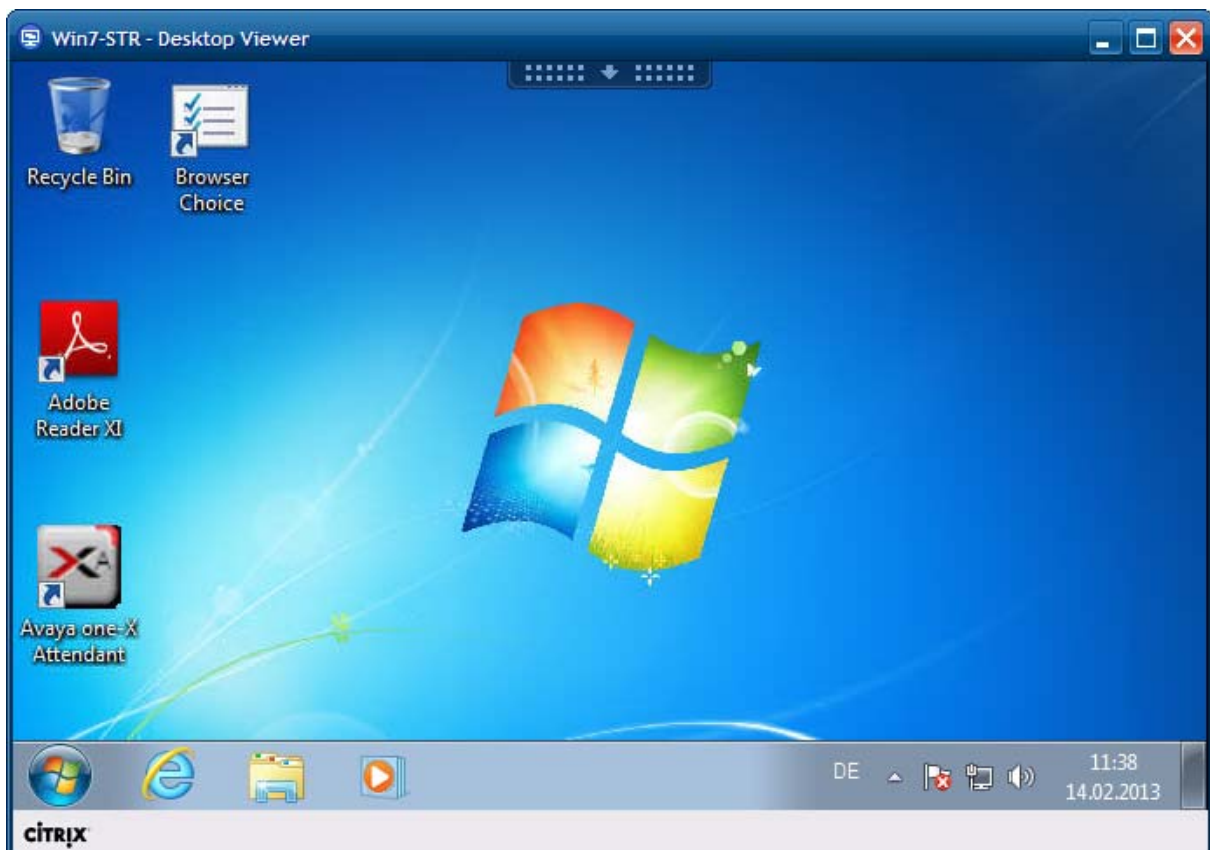
3.4 Online Plug-in

- Install the Citrix online plug-in on any Client PC (CitrixOnlinePluginFull.exe)
- Start plug-in (a symbol is placed in the notification area of the Windows taskbar)
- Enter server (DDC) URL: `http://<DDC>/Citrix/PNAgent/config.xml`
- Login:
 - User name: `<domain user> (xduser01... xduser05)`
 - Password: `<password>`
 - Domain: `<domain name> (xd)`

4 Virtual Desktop

4.1 Start

- Left click on the Citrix online plug-in symbol in the notification area and select Win7STR
- After a short period of time, the virtual desktop window appears ...



4.2 one-X Attendant Client

4.2.1 Road Warrior Mode

The Road Warrior Mode is not recommended when one-X Attendant is run in a Citrix Environment. It may come to call quality issues.

In order to use a microphone (headset's microphone), which is connected to the Client PC, an additional setting has to be made in the DDC (VM **vController**).

- Start Citrix Desktop Studio and navigate to *HDX Policy* -> **Users**
- In the lower half of the right-hand window go to the tab *Settings*
- Search for **Client microphone redirection** and click [Add](#)
- Restart the virtual desktop

4.2.2 Configuration

When a user (xduser01 ... xduser05) starts the one-X Attendant in a virtual desktop session the first time, the one-X Attendant's configuration wizard runs and the user has to do the initial configurations (extension, call server address, etc.).

The Outlook client (mail box) has also to be configured in each new virtual desktop session.

4.3 Windows Licensing

With the test installation as described here, Windows has to be activated manually each time a new virtual desktop session is started. This is so, because during the creation of the virtual disk (vDisk), the item *Microsoft Volume Licensing* is set to *none* (see chapter 3.3.4).

In the vDisk properties it is possible to set the licensing to Multiple Activation Key (MAK) or Key Management Service (KMS).

Attention:

In order to be able to set the licensing mode to KMS or MAK, the *Local Group Policy* in the Provisioning Server (VM vPvS) has to be configured.

- Run *gpedit.msc*
- In the Local Group Policy Editor navigate to

Computer Configuration
Windows Settings

Security Settings

Local Policies

User Right Assignments

- Right click on Perform volume maintenance tasks and add NETWORK SERVICE to the list

5 Appendix

5.1 Software Versions

Product	Version	Hotfixes installed
XenServer	6.1.0	XS61E001
	XS61E003	
	XS61E004	
	XS61E005	
	XS61E006	
	XS61E009	
	XS61E010	
XenDesktop	5.6	none
Provisioning Services	6.1	none
one-X Attendant Server	4.02.010	--
one-X Attendant Client	4.02.010	--
Outlook	2007	--
Outlook	2010	--

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