

Running XenDesktop & Provisioning Server With VMware ESX

Mike Nelson

Senior SME - Virtualization

Kimberly-Clark Corp.

mike@techdecode.com

Twitter - [@nelmedia](https://twitter.com/nelmedia)

What Are We Going To Talk About?

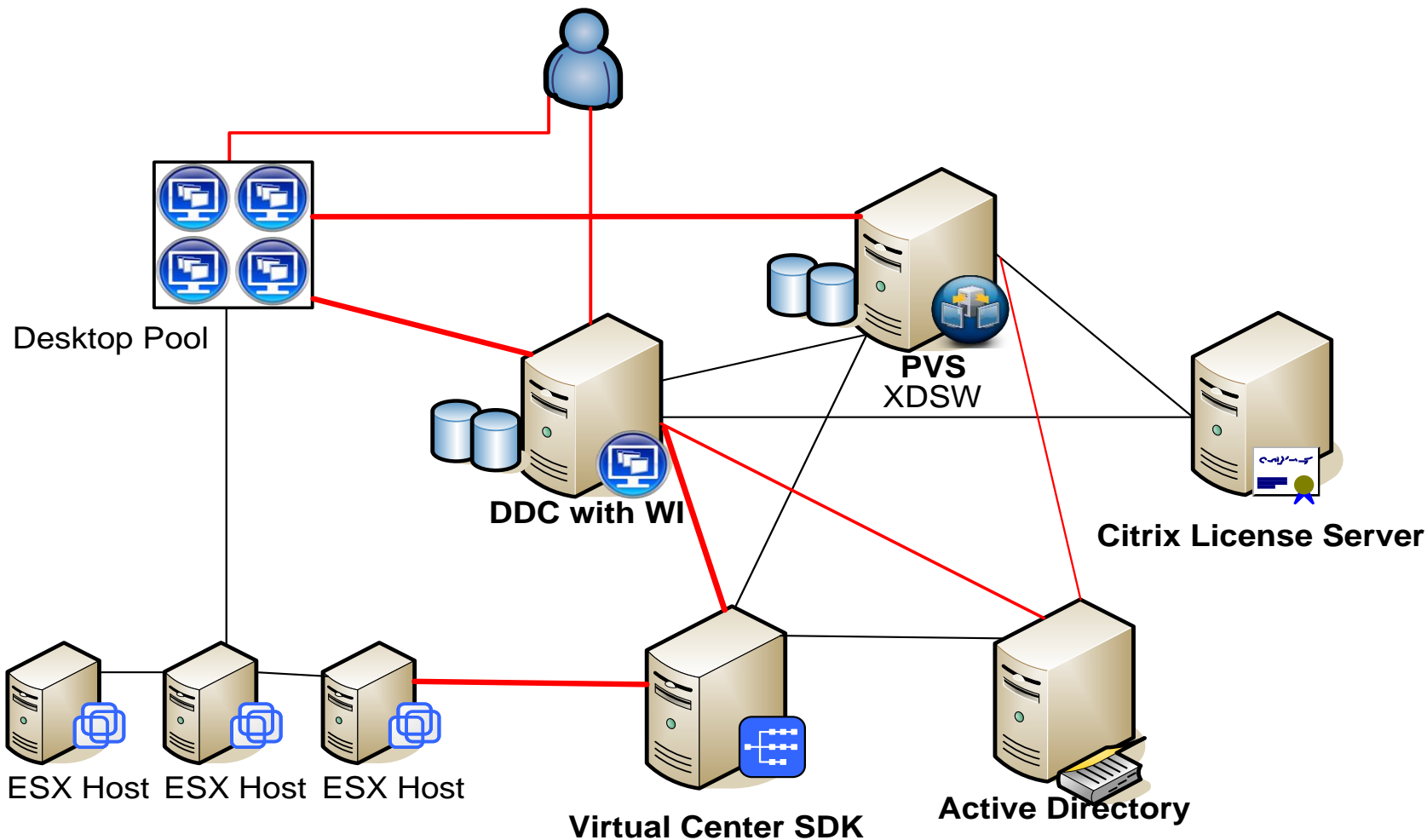
- How to get the DDC & PVS working with Virtual Center
- How, what, when & why of communications between them... and the VDA.
- A bit on the XDSW
- Things to watch for, plan for, and just avoid
- Demos

What Are We Not Going To Talk About?

At least not in this session!

- The “general” install, config, and setup of XenDesktop, PVS, or Virtual Center
- General operations and maintenance of either platform.
- Deep dives into the agents - VDA, PSA, & PSO.
- Biased personal opinions on hypervisors or VDI solutions are not allowed!!
- The presenter reserves the right to claim memory loss and forget the previous statement

Basic XD, PVS & VC Topology



Which Backend To Use?

- Experienced staff, training, out-sourcing?
- DRS & HA (FT) capabilities (plus-minus)
- Ballooning – yes, I mean over-commit
- VC is the (v)center of your universe
- You have a love/hate relationship with <enter hypervisor vendor here>?
- Your budget
- “Free” should be given consideration for some deployments

Why To Not Use An ESX Backend?

- Single point of failure (Don't they all though?)
- Separate VC may be required
- Permissions on VC can be variable.
- Cost
- Training, knowledge base
- Web API – not consistent, not guaranteed, and it is a SOAP service, not integrated DLL
- Not completely integrated into XD & PVS like Xenserver (or future Hyper-V)

Getting It To Work

What you need besides vendor bits, hardware, & licenses (and a little luck):

- SSL Cert or proxy.xml change on VC
- Service account with:
 - Administrator access to VC (Datacenter or Hosts/Clusters – organization is key!) and DDC/PVS servers (next slide)
 - Domain Admin account (to start), then delegation
- SQL “sa” access (to start – no matter what Citrix says), then dbo
- Service account login to do installs (could be same as dbo) and login from then on.
- Make sure web access sdk on VC is working.

Permissions Required

Several responses, not always the same. But this appears closer....

At the Hosts and Clusters Node

Global.Manage Custom Attributes

On the data center(s) that will contain the virtual machines

Data Store.Browse Data Store

Virtual Machine.Provisioning.Deploy Template

Virtual Machine.Inventory.Create

Resource.AssignVMToPool

On the container (folder, cluster, etc.) that the virtual machines will be located in

Global.Set Custom Attributes

Virtual Machine.Interaction.Power On

Virtual Machine.Interaction.Power Off

Virtual Machine.Interaction.Power Suspend

Virtual Machine.Interaction.Power Reset

Proxy.xml change

<http://www.vmware.com/support/developer/vcsdk/visdk25pubs/visdk25setupguide.pdf>

In C:\Documents and Settings\AllUsers\Application Data\Vmware

```
<e id="1">
  <_type>vim.ProxyService.LocalServiceSpec</_type>
  <serverNamespace>/sdk</serverNamespace>
  <accessMode>httpAndHttps</accessMode>
  <port>8085</port>
</e>
```

Certificate Import

CTX116928

- Must be imported to DDC and PVS servers
- Host file change *may* be needed – DNS FQDN is key!
- Default certificate only good for 2 years. “Repair” of VC may add 2 more years, but not tested.

Can You Hear Me Now?

- **How do they communicate?**
 - The DDC does most of the talking – lots of talking.
 - XDSW is next in line, but brief.
 - PVS is only flapping it's gums when it needs to.
 - It's almost all XML, random high ports, and some secret stuff too. (besides the regular Citrix talk)

My People Will Call Your People

- Poweron/Poweroff/Status/Timesync are the main conversations between the DDC & VC.
- PVS (& XDSW) chat about the same, as well as Create
- More talking between DDC/PVS & AD (pass sync, create, destroy, authentication, etc.)

Typical Conversation DDC <-> VC

- DDC – “Hey VC sdk. Is this machine <UUID> powered on?”
- VC – “Yep”.
- DDC – “Can you give me a status on these (or all) VD’s please?”
- VC – “No problem. Here comes.”
- DDC – (Gotta have ID-15476 powered on to satisfy it’s Idle Pool.) “Say, VC! Can you crank this one up for me?”
- VC – “Creating task”
- DDC – “VC – what is that task status?”
- VC – “Task is complete. ID-15476 is powered on”

WriteCache Templates

- **Template location is key. Datastore, folder, cluster, even datacenter.**
 - Create virtual with unique name. Create with 1or 2GB hard drive, RAM, & right network. **MAC address set to Automatic**. Add to AD manually.
 - Set virtual to Force into BIOS on next boot. Once in BIOS, remove un-needed ports. Set highest boot device to PXE.
 - Manually create device in PVS using MAC address of new virtual. Assign it a Private disk as primary boot.
 - Boot virtual, login with service account (admin), and format 1/2GB drive. Assign drive letter (optional).
 - Shutdown virtual. Remove vDisk assignment in PVS. Clone virtual to template.
 - Move template to desired location

“Not Registered” or “-”

Getting this state from the DDC for desktops hosted on ESX seems to be pretty common.

- VDA not responding within timeout – 3 min.
- VD not powered off within timeout – 5 min.
- VD OS hung – mainly private images
- OS Service Packs & auto updates
- OS firewall not allowing VDA
- AD password change on computer account
- AD computer accts. not in DDC pool properties (red X)
- Idle Pool Count – duh.

Gotcha's & Tips

- 4 clicks to delete!!
- XDSW doesn't always tell the truth. Verify after every creation. Also attributes to VC queuing (next slide)
- VC DB size and transaction log. Events, Tasks, & Alarms will fill it up.
- PVS DB growth. Lots of changes? Watch the growth!
- VC Failure. Current users OK, new ones not.
- VC /sdk URL. If it changes, all will fail.
- VC Role Account. Watch password changes and permissions
- Template Locations. Where they are is where XDSW creates machines. Create multiple if needed.

- **VC queuing.** Multiple requests sent to VC will cause VC to queue. low down requests to VC – CtxPoolMgr.exe.config file

```
<?xml version="1.0" encoding="utf-8" ?>
```

```
<configuration>
```

```
<appSettings>
```

```
<add key="LogToCdf" value ="1"/>
```

```
<add key="AdminActionMaximumRate" value="5" />
```

```
<add key="MaximumTransitionRate" value="5" />
```

```
</appSettings>
```

```
<system.net>
```

```
<connectionManagement>
```

```
<add address="*" maxconnection="80" />
```

```
</connectionManagement>
```

```
</system.net>
```

```
</configuration>
```

- **Stagger your Idle Pools.** Break them up and allow for less requests. “Boot Storms” are bad.

- XDSW and templates. VC may report failures if bulk cloning a template. Always verify. (3.x fixed?)
- Datastores & XDSW. Watch your datastore size and location of templates. XDSW does not check for free space.
- Enable logging. Turn them all on (Careful on disk space)
- Learn Powershell. PVS and DDC have PS extensions, although not the best yet. VC & PoSH is awesome.

Recommendations / Summary

- Don't think you should not use VMware.
- Plan ahead for cert renewal or proxy.xml change (POC is a good time)
- Have the VC organized in clusters and/or folders before you start
- Make sure you can modify AD and get the rights you need
- Watch your databases!
- Planned outages
- Make sure permissions are right
- Hotfixes, and more hotfixes

For More Information

- CTX116928- "Using VMware Infrastructure 3 with Desktop Delivery Controller"
- VC SDK / API documentation
<http://www.vmware.com/support/developer/vc-sdk/>
- Shoot me an email or Tweet. I'll be glad to assist if I can. mike@techdecode.com or Twitter @nelmedia.