In this post, I will show you how to build and capture of Windows 10 operating system with very basic applications and few store apps.

So far, I have written 2 blogs on the above covering install and post configuration. Now we will explore operating system deployment.

I will be using below link as reference for writing this blog.


**Overview – Build and Capture Windows 10**

- Create a provisioning template to capture the image
- Install a PXE Representative
- Prepare the Windows 10 Computer for Capturing the Image
- Run SYSPREP.EXE to Prepare the OS for Capturing
- Add a Bare Metal Server Entry
- Create a Scheduled Task for the Capture Template
- Network Boot the Windows 10 Computer to Capture the Image

1. Create a provisioning template to capture the image
2. PXE Configuration/Setting

I did configure PXE in Part 2. Here is the screen shot

Tools – Configuration - Agents Settings – Client Connectivity - PXE

Tools – Configuration – Self extracting Subnet Services - PXE
3. Prepare Windows 10 computer (virtual machine).

Install Windows 10 on a computer or get a computer that already has Windows 10 installed. Make sure the LANDesk Agent is not already installed on the computer or it will need to be removed before capturing the image.
**Specify Generation**

Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Installation Options
Summary

Choose the generation of this virtual machine.

- **Generation 1**
  This virtual machine generation supports 32-bit and 64-bit guest operating systems and provides virtual hardware which has been available in all previous versions of Hyper-V.

- **Generation 2**
  This virtual machine generation provides support for newer virtualization features, has UEFI-based firmware, and requires a supported 64-bit guest operating system.

⚠️ Once a virtual machine has been created, you cannot change its generation.

**More about virtual machine generation support**

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**Assign Memory**

Before You Begin
Specify Name and Location
Specify Generation
Specify Memory
Configure Networking
Connect Virtual Hard Disk
Installation Options
Summary

Specify the amount of memory to allocate to this virtual machine. You can specify an amount from 32 MB through 325892192 MB. To improve performance, specify more than the minimum amount recommended for the operating system.

**Startup memory:** 32 MB

- **Use Dynamic Memory for this virtual machine.**

**Information:** When you decide how much memory to assign to a virtual machine, consider how you intend to use the virtual machine and the operating system that it will run.
Configure Networking

Each new virtual machine includes a network adapter. You can configure the network adapter to use a virtual switch, or it can remain disconnected.

Connection: Realtek PCIe GBE Family Controller - Virtual Switch

Connect Virtual Hard Disk

A virtual machine requires storage so that you can install an operating system. You can specify the storage now or configure it later by modifying the virtual machine’s properties.

○ Create a virtual hard disk
  Use this option to create a VHDX dynamically expanding virtual hard disk.

Name: [T1-WIN10.vhdx]
Location: C:\\W1D-WIN10\Virtual Hard Disks\
Size: 127 GB (Maximum: 64 TB)

○ Use an existing virtual hard disk
  Use this option to attach an existing virtual hard disk, either VHD or VHDX format.

Location: C:\\W1D\

○ Attach a virtual hard disk later
  Use this option to skip this step now and attach an existing virtual hard disk later.
Installation Options

Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Installation Options
Summary

You can install an operating system now if you have access to the setup media, or you can install it later.

- [ ] Install an operating system later
- [ ] Install an operating system from a bootable CD/DVD-ROM
  - Media
    - [ ] Physical CD/DVD drive: E:\~
    - [ ] Image file (.iso):
      - 1000 updated Feb 2020 x64 dvd fastbst32.iso
  - [ ] Install an operating system from a bootable floppy disk
    - Media
      - Virtual floppy disk (.vdi):
    - [ ] Install an operating system from a network-based installation server

Completing the New Virtual Machine Wizard

Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Installation Options
Summary

You have successfully completed the New Virtual Machine Wizard. You are about to create the following virtual machine.

Description:

- **Name**: LD-WIN10
- **Generation**: Generation 1
- **Memory**: 3048 MB
- **Network**: Realtek PCIe GBE Family Controller - Virtual Switch
- **Hard Disk**: C:\VM\LD-WIN10\Virtual Hard Disks\LD-WIN10.vhdx (VHDX, dynamically expanded)
- **Operating System**: Will be installed from F:\Trekker Backup Jul 2017\Software\Operating Systems\

To create the virtual machine and close the wizard, click **Finish**.
Power on the virtual machine
Where do you want to install Windows?

<table>
<thead>
<tr>
<th>Name</th>
<th>Total size</th>
<th>Free space</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive 0 Unused Space</td>
<td>127.0 GB</td>
<td>127.0 GB</td>
<td></td>
</tr>
</tbody>
</table>

- Refresh
- Delete
- Format
- New

1. Collecting information
2. Installing Windows

Status: Running

Windows Setup

Installing Windows

Status

- Copying Windows files
- Getting files ready for installation
- Installing features
- Installing updates
- Finishing up

Status: Running
Let's start with region. Is this right?

- Bulgaria
- Burkina Faso
- Burundi
- Cabo Verde
- Cambodia
- Cameroon

Yes

Is this the right keyboard layout?

If you also use another keyboard layout, you can add that next.

- US
- Canadian Multilingual Standard
- English (India)
- Irish
- Scottish Gaelic
- United Kingdom
- United States-Dvorak

Yes
Want to add a second keyboard layout?

Add layout
Skip

Sign in with Microsoft
Work or school account

Which account should I use?
Sign in with the username and password you use with Office 365 or other business services from Microsoft.

Domain join instead  Privacy & cookies  Terms of use

Next
Who’s going to use this PC?
What name do you want to use?

Or, even better, use an online account

Create a super memorable password
Make sure to pick something you’ll absolutely remember.

Or, even better, use an online account

Password: ********
Get help from your digital assistant

Cortana helps you manage your time, get things done, and stay connected

To let Cortana provide personalized experiences and relevant suggestions, Microsoft collects and uses information including your location and location history, contacts, voice input, speech and handwriting patterns, typing history, search history, calendar details, content and communication history from Microsoft services, messages and apps. In Microsoft Edge, Cortana uses your browsing history. You can always change these choices in the Notebook and disable Cortana in Microsoft Edge.

Learn more
Decline
Accept

Leave everything to us

Don’t turn off your PC
Windows stays up to date to help protect you in an online world

Don't turn off your PC
Windows Update

Updates available
Last checked: Today, 2:01 PM

2020-04 Cumulative Update for Windows 10 Version 1909 for x64-based Systems (KB4549991)
Status: Pending install

Windows Malicious Software Removal Tool x64 - March 2020
(KB4590330)
Status: Pending install

2020-02 Cumulative Update for .NET Framework 3.5 and 4.8 for Windows 10 Version 1909 for x64 (KB4537572)
Status: Pending install

Optional updates available
- 2020-04 Cumulative Update for Windows 10 Version 1909 for x64-based Systems (KB4550945)

Download and install

Pause updates for 7 days
Visit Advanced options to change the pause period

Change active hours

Working on updates
19% complete
Don't turn off your computer
I have installed all the updates. Will not be removing any built-in store apps. Will not be installing Office 2019. So, the image is bare minimum. The system is not joined to domain and LanDesk agent is not installed.
4. Add Bare Metal entry

![Diagram of the interface showing the process of adding a Bare Metal device.]

- In the configuration section, select 'Bare Metal Devices'.
- Click on 'Add Devices' to open the 'Add Bare Metal Device' window.
- Enter the name 'LD-WIN10' in the Name field.
- Under Server Identifiers, select 'MAC address' and enter the MAC address '0015D75F80F1'.
- Click 'Add' to add the MAC address.
- Click 'OK' to save the changes.

![Final configuration showing the Bare Metal device 'LD-WIN10' added to the list.]

- The device 'LD-WIN10' is now listed under the Bare Metal Devices section in the configuration.
5. Schedule Task

Drag and drop the Bare Metal device that was created previously.
6. Network Boot – F12

- PXE SERVER

Loading files...

IP: 192.168.0.105. File: \boot\boot_x64.wim
The template is running. This window cannot be closed now.

Template Progress

Action 01: Ensure the OS petition is mounted as C.
Status: SUCCESS
Output:

Action 02: Capture image

IPv4 Address: 192.168.0.112
IPv6 Address: fe80::656:7ee:2a8:b:4e:320/64

Status Running

LANDESK OS Deployment (2/4)

Operation
Creating image...
Processing item 4 of 4
Backup Drive 0 (C:) Basic data partition (04) 129402MB HPFS/NTFS

TM: win10.db

Item Progress

 Overall Progress:

Statistics
MB Remaining: 9,500 Time Elapsed: 0:00:00:07
MB Processed: 146 Time Remaining:

Power Options

Process Priority

IPv4 Address: 192.168.0.112
IPv6 Address: fe80::656:7ee:2a8:b:4e:320/64
Host Name: minstr01

Cancel
The template is running. This window cannot be closed now.

Template Progress

Actions Completed: 1 of 2

- Ensure the OS partition is mounted as C:
  - Description: 
  - Status: SUCCESS
  - Action Count: 1
  - Output:

Action #1
Ensure the OS partition is mounted as C:
SUCCESS
Action #2
Capture image

IPv4 Address: 192.168.0.112
IPv6 Address: fe80::545e:7eea:2a68:c4c9%3
Host Name: minint-099dg1

---

The template is completed. This window will be closed after 26 seconds.

Template Progress

Actions Completed: 2 of 2

- Ensure the OS partition is mounted as C:
  - Description: 
  - Status: SUCCESS
  - Action Count: 2
  - Output:

Action #1
Ensure the OS partition is mounted as C:
SUCCESS
Action #2
Capture image
SUCCESS

IPv4 Address: 192.168.0.112
IPv6 Address: fe80::545e:7eea:2a68:c4c9%3
Host Name: minint-099dg1
The captured imaged is saved on the Preferred Server (CB.RAMLAN.CA)
Here are the task sequence details
This concludes build and capture Windows 10 Enterprise version.
Deploying Windows 10

I will be using below link as reference for writing this blog.


Overview – Deploying Windows 10

➢ Capture the Windows 10 image
➢ Import the UNATTEND.XML file
➢ Import the Provisioning Template
➢ Modify the Imported Provisioning Template
➢ Enter the Variables
➢ Add Drivers for Hardware Independent Imaging (HII)
➢ Add Devices to be Imaged
➢ Add the Image Server as a Preferred Server
➢ Schedule the Template and start the Task
➢ Network Boot the Devices and Wait for the Task to Complete
➢ Alternate Method to Start a Provisioning Template on a Computer

1. Capture Windows 10 Image – See above (Page 1 to Page 27)
2. Import UNATTENDED.XML file – Download the file from above link (the file is at the bottom of the page)

Related Files

Provisioning.zip
Click browse to import the script, name it, description it, click Import and Close.

3. Import the provisioning template

Brose the file, click import, close
4. Modify the imported provisioning template
Will install LanDesk Agent after OS deployment.
5. Enter the variables

Operating system provisioning

Provisioning templates
- 'Lab Tenant' templates
  - All team templates
  - My templates
- All my templates
- Public
  - All public templates
- Other users
  - RAML\Administrator
  - All my templates

Name
- Device Naming
- Product to Package Mapping
- Public Variables
- Install Scripts
- Provisioning Settings
- Branding

Public variables

<table>
<thead>
<tr>
<th>Search value</th>
<th>Replace value</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>coreIP</td>
<td>192.168.0.14</td>
<td>String</td>
</tr>
<tr>
<td>corename</td>
<td>LD</td>
<td>String</td>
</tr>
<tr>
<td>IdDeviceID</td>
<td>&quot;Computer&quot;,&quot;Device ID&quot;</td>
<td>Database value</td>
</tr>
<tr>
<td>IdHostname</td>
<td>&quot;Computer&quot;,&quot;Device Name&quot;</td>
<td>Database value</td>
</tr>
<tr>
<td>macAddress</td>
<td>&quot;Computer&quot;,&quot;Network&quot;,&quot;NIC...&quot;</td>
<td>Database value</td>
</tr>
</tbody>
</table>

Add | Edit | Delete

OK | Cancel | Help

User-defined variable

Search value: AdminPass
Type: String
Sensitive data: Yes
Replacement value: ********
Confirm replacement value: ********

OK | Cancel | Help

User-defined variable

Search value: WinTastKey
Type: String

OK | Cancel | Help
I will skip these steps as they are not required.

6. Add Drivers for Hardware Independent Imaging (HII) – This was deleted from template
7. Add Devices to be Imaged – Old device is in All Device Collection
8. Add the Image Server as a Preferred Server – This step was done in Part 2 blog
9. Schedule the Template and start the Task
Drag and Drop W10DEPLOY device
10. Network Boot – F10
The template is running. This window cannot be closed now.

Template Progress

Actions Completed: 0 of 6

Action #1
Deploy Image

IPv4 Address: 192.168.0.114
IPv6 Address: fe80:89c6:3176:4255:9das%3
Host Name: minnt-ogefni
The command completed successfully.
The operation completed successfully.
The operation completed successfully.
The operation completed successfully.
The operation completed successfully.
The operation completed successfully.
The operation completed successfully.
IP addresses: 192.168.0.114, 127.0.0.1
resolving core server name (LD)... success

Ping <text>: LD.RAMLAN.CA [192.168.0.14] with 32 bytes of data:
Reply from 192.168.0.14: bytes=32 time=9ms TTL=128

Ping statistics for 192.168.0.14:
Packets: Sent = 1, Received = 1, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 9ms, Maximum = 9ms, Average = 9ms
This is provisioning
A subdirectory or file \ldprovision already exists.
Action #1 Deploy Image

***Start PXE over IPv4.
Station IP address is 192.168.0.114

PXE-E21: Remote boot cancelled.
This might take several minutes

Don't turn off your PC
When I looked at the deployment status – it says FAILED – but the deployment is successful. Not sure why the scheduled status shows failed return code 1163. Need to search for solution through Google. I have opened support ticket with Ivanti today.

Other than that, everything seems to be fine. All the applications are there and windows 10 includes all the updates.

I deployed LanDesk Agent from LD Server console. The install was successful.

This concludes both Build, Capture and Deploy steps for Windows 10.

Thanks

Ram Lan
9th May 2020
If you want to add a device – follow this step. I skipped this step on Page 36.

6. Add Drivers for Hardware Independent Imaging (HII) – This was deleted from template

7. Add Devices to be Imaged - Old device is in All Device Collection

because, I planned to use the old device that is already in My Device Collection (LD-WIN10).