The Edge HP-Zbook System Build Guide

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Summary

These laptops are for running in-house programming and fee-for-service using a mix of commercial and FOSS software. Basic specs are;

- System Manufacturer: Hewlett-Packard
- System Model: HP ZBook 15
- Processor: Intel(R) Core(TM) i7-4800MQ CPU @ 2.70GHz (8 CPUs), ~2.7GHz
- Memory: 8192MB RAM

Once we have enough staff feedback and edgeuser use the plan was to identify a stable, useful install, a create a base image, clone with the fog server and re-deploy when needed.

In July 2016, with the impetus of the Windows 10 free upgrade ending, I started this build guide.

This build is based on OEM licenses for identical computers. Any other OS/hardware combination is gonna be out of scope

Procedure

1. *Identify Existing System Info*
2. *Specify Required Software*
3. *Upgrade to Windows 10*
4. *Clean Install Windows 10*
5. *First Image - base install*
6. *First Image - test deploy*
7. *Install applications, updates and drivers*
8. *Second Image*
9. *Second Image - Test Deploy*
10. *Create and customise edgeuser Mandatory Profile*
11. *Final Image*
12. *Final Image - test Deploy*
13. *Final Image Deploy*

1. Identify Existing System Info : 2 HOURS

At this point the system is already established and has been running for in-house and fee-for-service usage. We can grab the system info by running in the command prompt on one machine:

```
dxdiag.exe
```

Our required programs are based on the list of already installed, which have been in use since mid-2015.

The is command in powershell was used to generate the list and output to file:

```
C:\Users\edgeamin> Get-ItemProperty
HKLM:\Software\Wow6432Node\Microsoft\Windows\CurrentVersion\Uninstall\* |
Select- Object   DisplayName, DisplayVersion, Publisher, InstallDate |
Format-Table -AutoSize > C:\Users\edgeamin\Documents\InstalledPrograms-
PS.txt
```

Next we grab the windows 8.1 Licence Key. This is not an essential step, as the HPs store it in BIOS, but its worth doing as a precaution. You can dig it out using linux -

```
ls /sys/firmware/acpi/tables
```

or in windows with this freeware app magic jellybean.

> This is no longer needed - doing the update from windows
> 8.1 pre-authorises for Windows 10

2. Specify Required Software

Current Installs

Of interest to us are the apps used in workshops and fee-for-service that are not contained in either of the Autodesk Suites. We also note the apps we cannot re-install due to license issues.

- Chrome
- Firefox
- VLC
- Meshmixer
- Make human
- Arduino
- WinIPAC
- Adobe AIR
- Bleachbit
- Digital Microscope Suite (for celestron microscopes)
- UP! version 2.13

The apps that we cannot re-install include;

- Solidworks
- Unity game engine

Projected Installs

Windows 10

With the free update period for Windows 10 ending shortly we have upgraded to Windows 10 Pro. Windows 10 takes a lot of the pain out of updates and driver management, but does require manual tweaking of privacy settings for our users.

Autodesk

Based on anticipated usage of Autodesk products for with the CNC and laser cutter we will be installing the entire range of Autodesk products available.

Autodesk Product Design Suite Ultimate English 2017 Win 64

- Fusion 360
- Inventor Professional
- AutoCAD
- 3ds Max Design
- Alias Design
- AutoCAD Electrical
- AutoCAD Mechanical
- AutoCAD Raster Design
- Navisworks
- Navisworks Manage
- Recap

Autodesk Entertainment Creation Suite Ultimate

- Maya
- 3ds Max
- Softimage
- MotionBuilder
- Mudbox 4

Additional Software from Autodesk (which use to be available under our education site license but is no longer)

- Revit2017

Chocolatey - Package Management for Windows

Chocolatey is a software installation management system for windows, similar to homebrew + caskroom on a Mac or package management on Linux. We'll use this to simplify the install of open source software when we can.

Open Source Creative Software

Open source apps

- Gimp,
- Inkscape
- Krita
- Blender
- Libraoffice

Alternative Game Engines To Unity

Previously we've been running Unity game engine for workshops but under the new licenses The Edge is ruled out as part of SLQ. In this case we'll try Unreal Engine 4.

3: Upgrade to Windows 10 : 2 HOURS

As all the zbooks were running windows 7 or 8.1 they were entitled to be freely upgraded. This was done using the standard windows upgrade tool before July 31 2016.

4: Clean Install Windows 10 : 2 HOURS

1: Make Installer

We'll use the windows 10 media creation tool from here.

Use it to create an ISO but then use rufus to make it into a bootable USB - rufus is much quicker.

Clean Install for Master Image

If doing an master image for Autodesk imaging purposes, the boot sector of the drive has to be wiped as per recommended herehere

Easiest way to do this is use the dd command from a linux live disto

```
sudo dd if=/dev/zero of=/dev/sda bs=512 count=2048
```

If you do this on the zbooks the UEFI will assume the disk is corrupt and boot to a diagnostics tool. Ignore this and keep booting.

2: Boot off USB

With your new Windows USB, press f9 to bring up the boot menus then select boot from USB.

3: Installation Settings

We start with the usual 'edgeadmin' user then customise all the install options to disable m'call home' features.

> You can also do this after install by accessing privacy
> settings

4: Customize Account

Once the install is complete, we connect to EdgeProject wifi, or better still a wired connection. Windows will connect and activate, then begin updating drivers.

Windows will look for drivers for all the hardware - you can check on its progress in the device manager. The Nvidia graphics card drivers will take a while to download.

other customisations include:

- reduce zoom to 100% for display (this gets rid of the annoying blurred text in some desktop windows)
- remove tiles from the start menu
- check privacy settings
- disable background apps

4: First Image - Base Install :2 HOURS

We are now ready to make the first Fog Image. This is a clean minimal install that we can fall back to if something goes wrong. Take your computer over to the frog pond and :

On the laptop

- Connect to fog server ethernet switch
- boot up.
- Press f12 to go to network boot
- tap down quickly at fog menu to select quick inventory (otherwise fog will keep booting)
- perform a quick inventory, this registers the computer in the fog server database
- when the inventory is finished, the computer will restart - shut it down with the power button

On the fog server

- log in to the server
- create a new image - Windows 10, single disk, resizable - give it a useful name
- go to hosts - find your new computer and rename it WorkshopZBook(**)
- assign the new image to the new host.
- create a basic upload task
- start the task

ON the laptop

- boot up.
- Press f12 to go to network boot
- Fog server will start the imaging process.
- computer will reboot to windows

5: First Image - Test Deploy

Now we test whether our image is working on another workshop lappy. Grab another HP Zbook and and plug in into the fog server switch.

Boot off the network by hitting f12.

Select Quick Deploy from the fog menu.

Enter the fog server username/password

Select the image you just created, then enter

Wait for the computer to reboot to check it has worked.

Install Autodesk Software

Suites

The instructions for installing the educational version of the Autodesk Suites are can be found here. We've chosen to use the Multi-seat Stand-alone option.

Fusion 360

There are issues with multiple user accounts and fusion360. The standard web streamer install doesn't work - use this link

https://dl.appstreaming.autodesk.com/production/installers/Fusion%20360%20Admin%20Install.exe

Then at an el

Create Mandatory Profile - WINDOWS 7

Without a admin network or any ICTS support we use a simple hack to create a single local user account that refresh on log-in. The means that every time a computer reboots or a user logs out they get a clean account.

In brief, we create an edgeuser account, create new defaultuser folder copy the default user settings to it then set the profile for edgeuser to defaultedgeuser.

Create edgeuser

Login as a user in the Administrators group.

From "Computer Management" create edgeuser with password edgeuser and set:

1. Password never expires
2. User can not change password

First login

Start Menu > Change User > log in as edgeuser. This sets-up the user for the 1st time.

Log Off

Create, copy and set Path for default profile

Create a new folder in C:\Users\ and give it a name like defstudprofile.v2.

Login as Administrator and copy the profile "DEFAULT" (the default system profile) to the newly created folder using the System Settings menu > Advanced > User Profiles Settings > BUTTON "Copy to …".

IMPORTANT! Before you copy use the "Change" to allow the group "Authenticated Users" use of the new profile.

This operation overwrites the entire contents of the folder 'defstudprofile.v2' with the contents of the default profile, but allows 'Authenticated Users' to use it.

Menu "Edit Local Users and Groups" > user "edgeuser" > "Profile" - enter in the "Profile Path" box the path of the folder defstudprofile.v2 … remembering that the folder must be specified without the .v2 extension. so the path becomes C:\Users\defstudprofile

Log Off

Customise settings and desktop

login again as edgeuser

Customize the desktop settings, the home page of the browsers, the proxy, and anything else you need blocked or changed.

Log Off

Test Settings

Log back in as edgeuser and verify that the settings are all stored.

Before you continue you should Log off and back several times, opening several applications to make sure they are all properly configured.

Switch to 'Read only' Profile'

Log in as an administrator. Go to the the C:\Users\defstudprofile.v2 profile folder and rename the ntuser.dat file to ntuser.man

Log Off

DONE!

Create Mandatory Profile - WINDOWS 10

Windows 10 was a bit broken when it comes to local mandatory profiles, specifically the start menu and search function are borked.

As of the anniversary edition these issues seem to be resolved. The only difference now appears to be using .V6 for the mandatory profile.

Additional Windows 10 Settings

Resources

edge_wallpapers.zip