How to Deploy a New ECN Windows 10 Domain Machine
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Whether you are a full-timer or student worker at Purdue's Engineering Computer Network, deploying new computers is a very important, and common task. Mastering this skill will make your job much easier. The amount of active time involved is around 30-45 minutes, and the whole process will take a few hours.

Equipment needed:
- A computer that needs to have Windows 10 deployed to it
- An ethernet connection
- AC power cord, or laptop charger
- A monitor to use (if deploying a desktop computer)
- A keyboard and mouse (if deploying a desktop computer)

1. Deploy checklist

Fill out the following items on the top of the deploy checklist (*Figure 1*). The four bold elements on the checklist are the most important, but the following list are the ones you should aim to do for each.

Staffer(s) responsible should be filled with your own username, or, if a student, supervisors-username/your-username.

Queue is the ticket queue that this deploy is for. For example, ME, IE, TECH, etc. Do *not* add the ticket number however, as all tickets are renumbered automatically each morning.

Date is the date that you started the deploy process on.
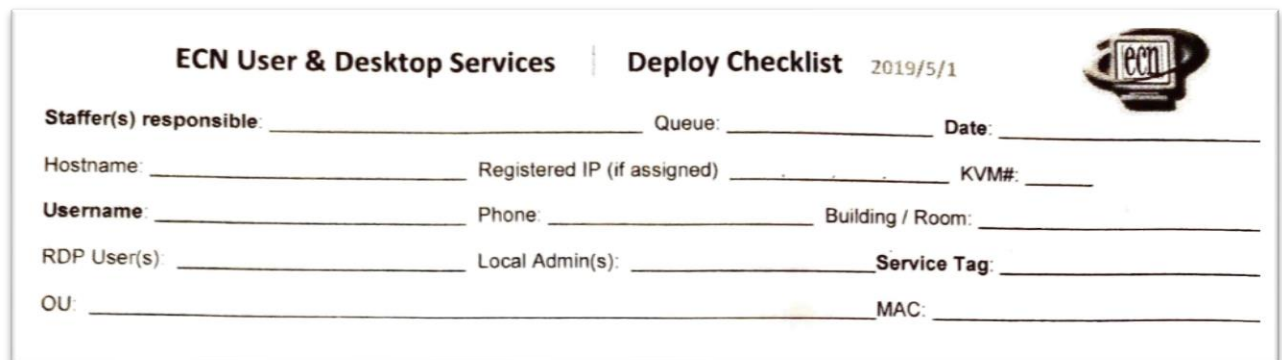
Hostname is where you put the computer's name (X-<Building><Room Number>PC<Number> for desktops, X-LT-<Username><Number> for laptops). The prefix X indicates an ECN managed machine.

Each computer (excluding laptops) gets a **Registered IP** from its DHCP reservation. Ask you supervisor for instructions on setting this.

The **username** should be the username of the user who will be using the computer, or who submitted the ticket.

OU is where you put the computer's organizational unit. This will determine the policies and software that the computer is setup with.

Fill other relevant blanks as necessary.

Figure 1: The top of the deploy checklist

2. Plug in the computer

For Desktops:

Attach the desktop's AC adapter, keyboard/mouse USB, display cable, and ethernet cable to the desktop in a free spot on one of the deploy racks.

For Laptops:

Find some empty desk space, and plug in the laptop's charger, along with attaching an ethernet cable either directly to the computer, or through an ethernet to USB adapter.

3. Preflight the computer in Arrow

Preflighting the computer will prepare it to be deployed and assign it to the correct Organization Unit (OU). To do so, first start the Arrow.Client program on your computer, and run it as administrator, authenticating with your personal admin account. Then, open Arrow (boilerad-arrow.ecn.purdue.edu), and sign in with your personal admin account. Navigate to *Computers* in the navigation menu on the left and select the sub option *Deployment Info* (**Figure 2**).
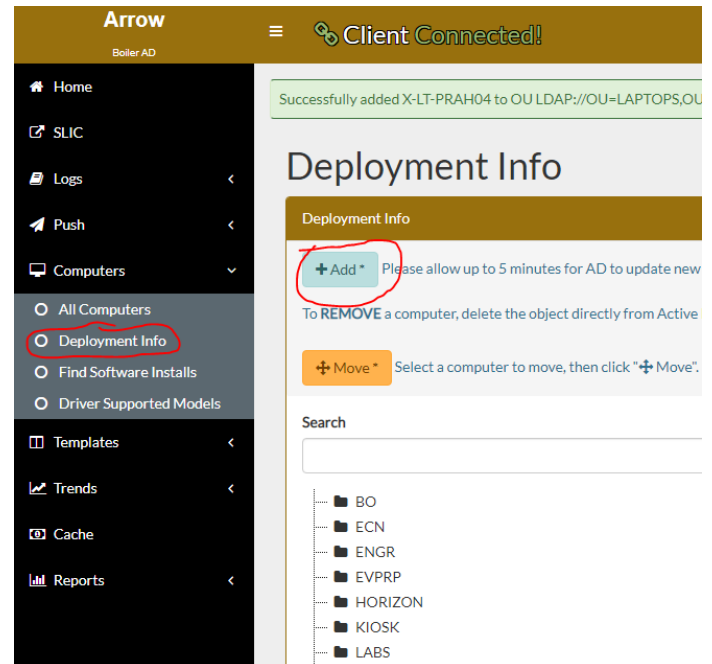

Figure 2: Navigating to Deployment Info within Arrow

After that, click the *'+ Add'* button, and in the dialog that appears, type in the hostname of the computer that will be deployed and the OU it will be in. Then click *'+ Create'* to finalize it (**Figure 3**). You should soon see a notification from the Arrow Client on your computer.
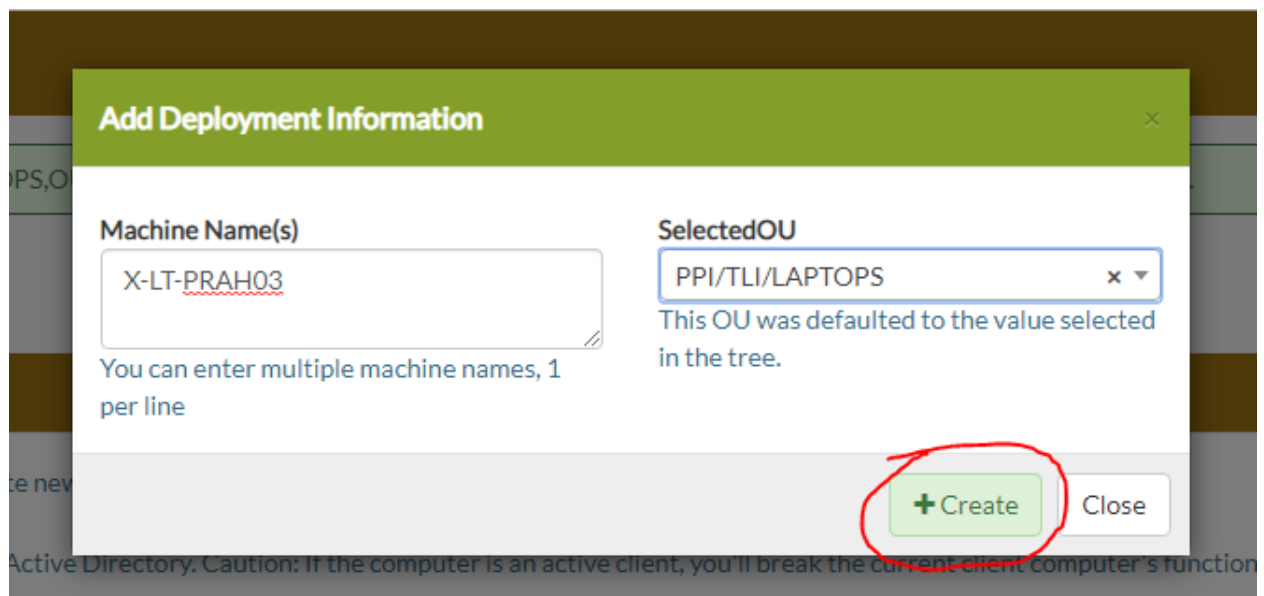

Figure 3: The Add Deployment Information dialog within Arrow

4. Change BIOS settings

Changing the BIOS settings is an important step in the deployment of a new ECN computer. This describes steps for a Dell computer, and steps may be different for non-Dell machines.

To enter the BIOS, spam the F2 button after pressing the computer's power button. After a bit, the BIOS setup will appear.

1. Navigate to *General > Boot Sequence*. Ensure that booting from you Network Interface Card (NIC) is enabled. It should be by default.
2. Navigate to *System Configuration > Integrated NIC* (this option is not available on some laptops) and check the box next to *Enable UEFI Network Stack*. Make sure *Enabled w/PXE* is selected below that.
3. Navigate to *System Configuration > SATA Operation*, and select *'AHCI'* from the list.
4. Navigate to *Secure Boot > Secure Boot Enable*, and make sure that Secure Boot is disabled.
5. (Desktop only) Navigate to *Power Management > AC Recovery* and select *Power On*.
6. Navigate **to *Security > Admin Password*** and enter the default ECN BIOS password. Please ask your supervisor to tell you what this is for security's sake. After entering it, press the *OK* button next to the password, and then click *Apply*, followed by *Exit* at the bottom of the page.

This is also a good time to label the computer. If you are deploying a desktop, label it with the hostname and registered IP, found at the top of the deploy checklist. For example:

X-HOSTNAME
127.0.0.1

If you are deploying a laptop, simply include the hostname as follows:

X-LT-HOSTNAME

Labels should be stuck to the front of the top of the desktop, and somewhere not obvious on laptops. A good place is on the back of the laptop, where it doesn't cover any vents or other labels.

5. PXE Boot the Computer

After the BIOS is configured, and the computer is preflighted in Arrow, you are ready to deploy it. Be sure to wait at least 5-10 minutes between completing the preflight and beginning the deploy.

First, spam the F12 button after pressing the power button to turn it on.

After a little bit, the one-time boot menu will appear. In this menu, select the NIC or PXE option with IPv4 (**Figure 4**). If step 4 was done properly, you will now be prompted for the admin password. Enter the same ECN BIOS password from the previous step, and press *enter.*
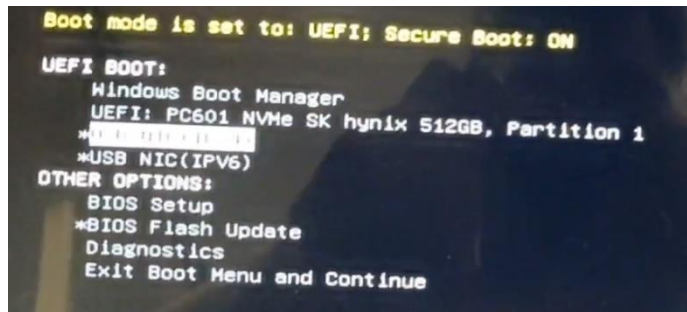
Figure 4: Selecting NIC (IPV4)

The computer will now begin the PXE boot process.

6. Follow the Task Sequence Wizard

After less than 5 minutes, Windows will start, and the *ECN – Windows Infrastructure* window will appear. Shortly after, the *Task Sequence* window will appear and prompt you for the ECN Deploy password (**Figure 5**). As with the BIOS password, please consult your supervisor for this. Press *Next.*

Figure 5: The Task Sequence Wizard

After a few seconds, a prompt will appear to select the task sequence for the deploy. Unless told otherwise, use the top option, *Install Windows 10 1809 New Drivers,* and click *Next >* (**Figure 6**).
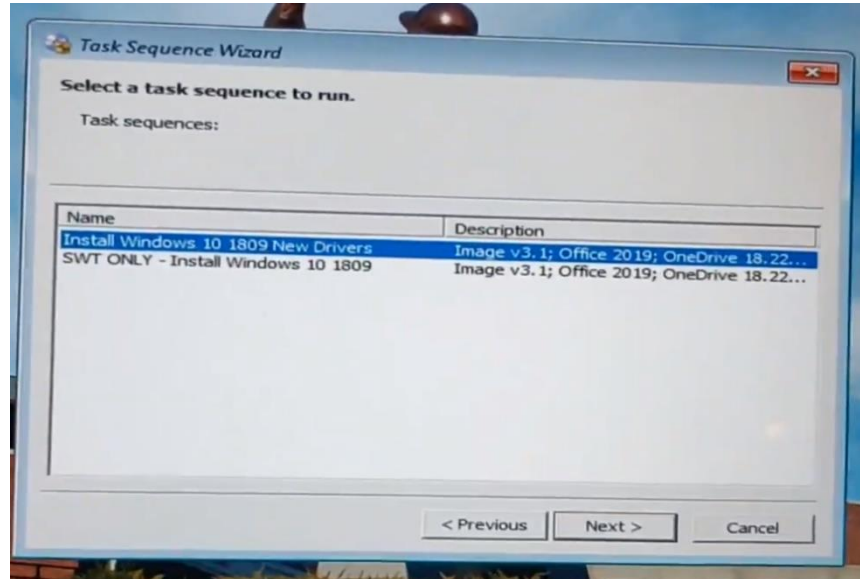

Figure 6: Task sequence selection within the Task Sequence Wizard

After less than a minute, a new window while appear, called *ECN Deploy Info Entry* (**Figure 7**). In this window, enter the computer name. This MUST be spelled the same as the computer name entered into Arrow during the preflight step.

Note:
This is NOT case sensitive, however. It is OK to leave the description empty. Press *OK*.

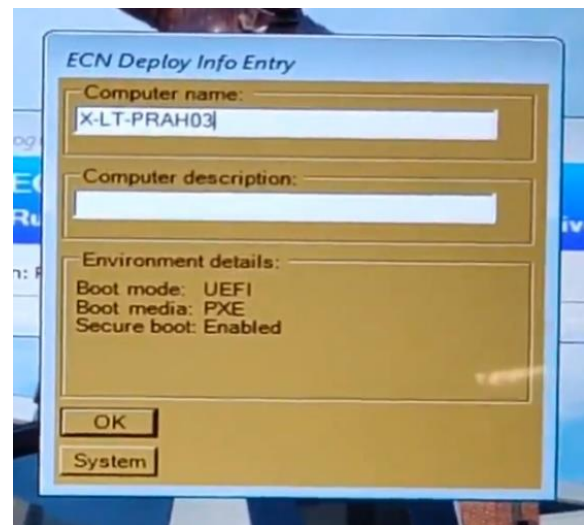Find something else to do! The installation will take around 1-2 hours and requires no user input.

Figure 7: The ECN Deploy Info Entry form

7. Post-Deploy checklist

First, log into the computer with your test account. If you don't have a test account, just use your regular account. Check off *Log in with test account*.

After logged in, open *Device Manager*, and take a quick look to make sure there aren't any driverless devices. Check off *Fix Driverless devices*.

Proceed to open Google Chrome, and search "Dell Drivers and Downloads". Click the first link, **Drivers & Downloads | Dell US** and enter the computer's service tag into the *Service Tag* box, and press *enter*. Click *download* next to the BIOS option from the list that appears. Open the downloaded .exe file, and enter your personal admin credentials.

In the window that appears, type in the ECN BIOS password from earlier. Press *enter*. Then click the *Install* button in the next window. Take note of the new version of the BIOS, writing it in the correct blank on the deploy checklist. Check off *BIOS update (new PCs) Version: _____*

After a few minutes, the computer will prompt you to reboot it. Press the *Reboot* button. When booting up, the computer should take ~5 minutes to flash the BIOS, and then reboot.

Once the computer is rebooted, login again. On a desktop, skip this step. For laptops, open the *File Explorer*, click to open *My Computer*, and right click on *Windows (C:)*, and select *Enable Bitlocker encryption* in the context menu. Walk through the steps, pressing *Next* each time, until asked for the Bitlocker PIN. Type in the standard ECN password. Ask your supervisor for what this password is. When asked to reboot, reboot the computer. While the computer boots up, you will be asked for the Bitlocker PIN you just set. Enter it, and then login when the computer boots.

Next, ensure that everything about the machine is in Arrow and correct. This may require you to run the Hardware Inventory Cycle. First, click *Computers > All Computers* from the side menu, and search for the name of the computer you are deploying. When you find it, click on the name, and click **Hardware Inventory Cycle** after checking that the BIOS Version, OU, Service Tag, etc. are correct (*Figure 8*).
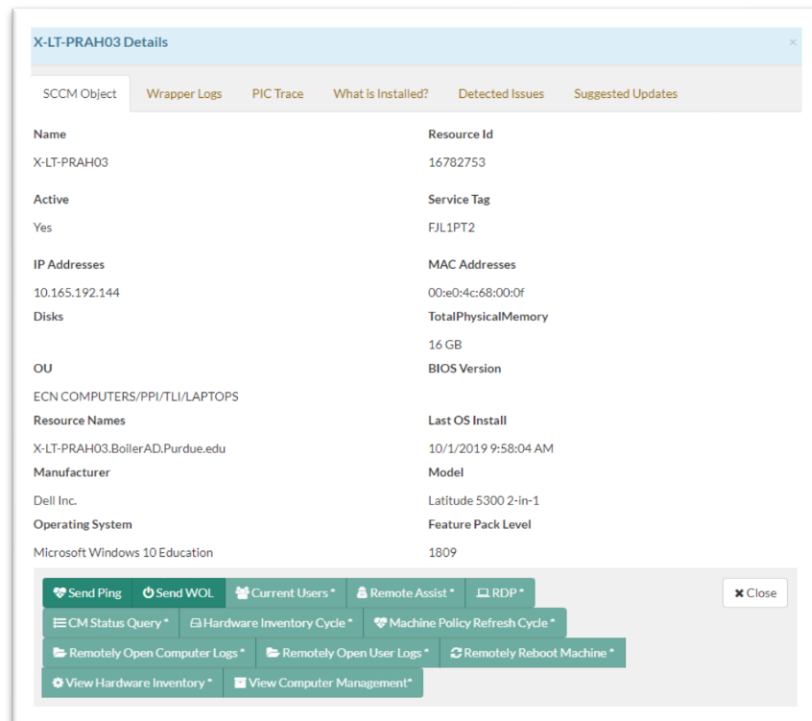

Figure 8: Checking for correct values in Arrow

Conclusion

Congratulations! Now you know how to deploy a new Windows 10 PC for ECN. For the next few deploys you complete, consult this tutorial to double-check accuracy, or until you are comfortable with the process.