



Whitepaper



## Upgrading UpdateXpress CD Device Drivers with UXLive Packages

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## I. Introduction

This white paper explains how to upgrade the device drivers of a current UpdateXpress CD with packages downloaded from UpdateXpress Live, also referred to as UXLive in this document.

Customers can use UXLive to download the latest UpdateXpress device driver packages for specific systems. After downloading the packages, the only options the customer had were to either extract or execute the packages locally.

This white paper shows how to use the content of said packages to upgrade the device drivers of a current UpdateXpress CD.

The process to upgrade the firmware updates of a current UpdateXpress CD is different and is not covered in this document. Please refer to the "Upgrading UpdateXpress CD Firmware with UXLive Packages" whitepaper for that process.

This white paper was written for use with UpdateXpress version 3.01A and supported Windows operating systems.

For demonstration purposes, this whitepaper will use an x345 and the "IBM Gigabit and 10.100 Ethernet Device Driver for Windows NT and Windows 2000" Version 6.2 package downloaded via UXLive as examples. The package name for this device driver is 02R8675W.EXE.



## II. Significant UpdateXpress CD File and Directories

Below is a list and a brief description of the files and directories that are significant to upgrade the contents of the UpdateXpress device drivers.

\SGUIDE\ADAPT - Common firmware and device driver updates  
\SGUIDE\MACH - Machine specific firmware and driver updates  
\SGUIDE\MACH\XXXX\DRIVER2K.TAB - Device driver table for Windows 2000/XP  
\SGUIDE\MACH\XXXX\DRIVERNT.TAB - Device driver table for Windows NT

Please note that the device driver portion of the UpdateXpress CD uses the machine type sub-directories (8670 for an x345) and not the machine name (x345) sub-directories located in the \SGUIDE\MACH directory. The machine name (x345) sub-directories are used for the firmware portion of UpdateXpress. For example, we will be modifying items in the \SGUIDE\MACH\8670 sub-directory for the x345. We will not modify anything in the \SGUIDE\MACH\x345 directory.

Please note that this whitepaper will use the following files and directories listed below for demonstration purposes.

\SGUIDE\ADAPT\Networking\BCOM345 - New x345 network device drivers  
\SGUIDE\MACH\8670 - x345 specific directory  
\SGUIDE\MACH\8670\DRIVER2K.TAB - x345 device driver table for Windows 2000/XP  
\SGUIDE\MACH\8670\DRIVERNT.TAB - x345 device driver table for Windows NT

Please note that the directory \SGUIDE\ADAPT\Networking\BCOM345 does not currently exist. It will be created while following the directions in this document.

**It is highly recommended that you do not delete or overwrite the current contents of any sub-directories within the \SGUIDE\ADAPT directory as they may be common to other systems and modifying the contents could cause the UpdateXpress CD not to function. When upgrading device drivers or firmware, you should always create a separate directory for the new updates.**



### III. Format of the Device Driver Table Files

It is important to first understand the formatting of the UpdateXpress device driver table files. These are the main files UpdateXpress uses to determine which device drivers are currently loaded and running in the operating system which is then compared to what the CD has to offer.

**You must use extreme caution when modifying these files as any mistakes could cause UpdateXpress to malfunction.**

The format of both tables, DRIVER2K.TAB and DRIVERNT.TAB, are the same. Each line of the table signifies a device driver that is supported for that system. The lines are broken up into three arguments, described below, all of which are separated by a colon (:). We will examine the Windows 2000/XP Broadcom network device driver line in the DRIVER2K.TAB file.

The actual line from the table file is:

```
\SGUIDE\ADAPT\Networking\BROADCOM\WIN2K\b57w2k.sys:\SGUIDE\ADAPT\Networking\BROADCOM\PKGS\90p4116w.exe -s -a -s
```

1. The first argument is the full path and name of the actual device driver from the root of the UpdateXpress CD. The name of the Broadcom network device driver for an x345 running Windows 2000/XP is b57w2k.sys which is located in the \SGUIDE\ADAPT\Networking\BROADCOM\WIN2K directory on the UpdateXpress CD.
  - a. Note that there are two exceptions to this rule. UpdateXpress has the ability to install as well as update the service processor device drivers. It also has the ability to flash the IBM Remote Supervisor Adapter 2 (also referred to as RSA II) under the operating system. Because of that, the lines in the table that deal with the service processor device drivers and the RSA II flash are different.
    - i. If you are upgrading the service processor device drivers, you must leave the wrf and raptor key words in front of the path and name of the device driver.
    - ii. If you are upgrading the RSA II flash, you must only modify the build ID in the first section of the line. This is the value after the = sign in the line. For example, if you download a new flash for the RSA II that has a build ID of GEE825AUS, you would change  
“\* IBM Remote Supervisor Adapter 2=**GEE824AUS**” to  
“\* IBM Remote Supervisor Adapter 2=**GEE825AUS**”
2. The second argument is the path, name, and command line options of the update program. The name of the current Broadcom update package is 90p4116w.exe and is located in the \SGUIDE\ADAPT\Networking\BROADCOM\PKGS directory. The command line options for the package are -s -a -s.
3. The third, optional, argument is the name of the currently installed device driver if it is different than the one on the UpdateXpress CD. For example, the name of the currently installed device driver is xxxxxxxx.sys and the name of the new device driver is xxxxxxxy.sys. You would add the xxxxxxxx.sys as the third argument. The line would look like \SGUIDE\...\xxxxxy.sys:\SGUIDE\...\PackageName-Options:xxxxxx.sys.



## IV. Retrieving New Updates with UpdateXpress Live

Below are brief instructions on how to retrieve new updates from IBM using UpdateXpress Live.

1. Insert the UpdateXpress CD into any system that has a direct connection (not via a proxy) to the internet.
2. Click on the "UpdateXpress Live" button.
3. Enter the four digit machine type and click the "OK" button. We used 8670 for the IBM eServer xSeries 345. This will retrieve a list of updates from IBM that are newer than those on the current UpdateXpress CD.
4. Click on the "Download" button. This will download all of the available updates to the %SystemDrive%\Program Files\IBM\UpdateXpress\Live directory and then display a web page that describes all of the updates that were retrieved.
  - a. Clicking on any of the links for the updates will display a page that has the details for the update. You will need to get the package name of the update(s) you want from the details page(s).
  - b. You must note the path and name of the new packages that were downloaded as they will be used later in these instructions.
5. Click on the "Exit" button then the "OK" button to exit UpdateXpress.



## V. Upgrading the UpdateXpress CD

Now that you understand the format of the device driver table files and have downloaded the latest updates with UpdateXpress Live, you can follow the instructions below to upgrade the current UpdateXpress CD.

Please note that D:\CustomUXCD directory used throughout the rest of these instructions is a fictitious directory. You can substitute any valid directory name you wish.

As a reminder, these instructions are using an x345 and the "IBM Gigabit and 10.100 Ethernet Device Driver for Windows NT and Windows 2000" Version 6.2 package downloaded via UXLive as examples. The package name for this device driver is 02R8675W.EXE.

1. Copy the entire contents of the UpdateXpress CD to a working directory.
  - a. Create a working directory (D:\CustomUX)
  - b. Xcopy all of the contents of the UpdateXpress CD to the working directory.
  - c. Reset the read-only attributes of the files that were copied (attrib D:\CustomUX\\*. \* -r /s).
2. Merge the new update package into the UpdateXpress CD structure
  - a. Create the directories for the new update
    - i. D:\CustomUXCD\SGUIDE\ADAPT\Networking\BCOMX345
    - ii. D:\CustomUXCD\SGUIDE\ADAPT\Networking\BCOMX345\PKGS
    - iii. D:\CustomUXCD\SGUIDE\ADAPT\Networking\BCOMX345\win2k
    - iv. D:\CustomUXCD\SGUIDE\ADAPT\Networking\BCOMX345\winnt
  - b. Copy the new package (02R8675W.EXE), XML file (02R8675W.XML), and text file (02R8675W.TXT) from the download directory (%SystemDrive%\Program Files\IBM\UpdateXpress\Live) to the D:\CustomUXCD\SGUIDE\ADAPT\Networking\BCOMX345\PKGS directory created above
3. Unpack the contents of the new package that was downloaded
  - a. Execute the new package (%SystemDrive%\Program Files\IBM\UpdateXpress\Live\02R8675W.EXE)
  - b. Click on the "Accept" button for the license agreement
  - c. Click the "Extract to Folder:" radio button
  - d. Enter the path to extract it to
    - i. Use a temporary directory. Do NOT extract it into the UpdateXpress CD structure created in step 1
  - e. Click the "Next" button
  - f. Click the "Next" button
  - g. Click the "Finish" button



4. Merge the new device drivers to the UpdateXpress CD structure
  - a. Copy the new device drivers only to the appropriate directories created in step 2, part a  
(D:\CustomUXCD\SGUIDE\ADAPT\Networking\BCOMX345\win2k and D:\CustomUXCD\SGUIDE\ADAPT\Networking\BCOMX345\winnt)
    - i. Do not copy the entire contents of the package. All that is required is the single device driver file that will be referred to by the table file
    - ii. If the name of the new device driver(s) is different than that of the previous device driver(s), do not rename them

NOTE: The name of the Broadcom network device drivers was changed from the previous release. The new name of the device drivers are E1000NT4.SYS for Windows NT and E1000NT5.SYS for Windows 2000/XP. Therefore, I copied the E1000NT4.SYS device driver into the D:\CustomUXCD\SGUIDE\ADAPT\Networking\BCOMX345\winnt directory and the E1000NT5.SYS device driver into the D:\CustomUXCD\SGUIDE\ADAPT\Networking\BCOMX345\win2k directory.

5. Update the appropriate x345 device driver table files (refer to section III)
  - a. Update the Windows NT device driver table file
    - i. Load the appropriate table file  
(D:\CustomUXCD\SGUIDE\MACH\8670\DRIVERNT.TAB) file into your favorite editor
    - ii. Locate the appropriate entry for the device driver
    - iii. Modify argument number one to point to the new directory created in step 2 above
      1. \SGUIDE\ADAPT\Networking\BROADCOM\WINNT\b57nt.sys: to \SGUIDE\ADAPT\Networking\BCOMX345\WINNT\b57nt.sys:
    - iv. If the name of the device driver file has changed...
      1. Modify argument number one to point to the new name of the device driver
        - a. \SGUIDE\ADAPT\Networking\BCOMX345\WINNT\b57nt4.sys: to \SGUIDE\ADAPT\Networking\BCOMX345\WINNT\E1000NT4.SYS:
    - v. Modify argument number two to point to the new directory created in step 2 above
      1. ...:\SGUIDE\ADAPT\Networking\BROADCOM\PKGS\90p4112w.exe -s -a -s to ...:\SGUIDE\ADAPT\Networking\BCOMX345\PKGS\90p4112w.exe -s -a -s
    - vi. Modify argument number two to point to the new package name
      1. ...:\SGUIDE\ADAPT\Networking\BCOMX345\PKGS\90p4112w.exe -s -a -s to ...:\SGUIDE\ADAPT\Networking\BCOMX345\PKGS\02R8675W.exe -s -a -s



- vii. If the name of the device driver file has changed...
    - 1. Add or modify the third argument to point to the old device driver name
      - a. In this case, we must add the third argument  
...\02R8675W.exe -s -a -s to ... \02R8675W.exe -s -a -s:  
s:b57nt4.sys
  - viii. Save and close the file
- 
- b. Update the Windows 2000/XP device driver table file
    - i. Load the appropriate table file (D:\CustomUXCD\SGUIDE\MACH\8670\DRIVER2K.TAB) file into your favorite editor
    - ii. Locate the appropriate entry for the device driver
    - iii. Modify argument number one to point to the new directory created in step 2 above
      - 1. \SGUIDE\ADAPT\Networking\BROADCOM\WIN2K\b57w2k.sys: to \SGUIDE\ADAPT\Networking\BCOMX345\WIN2K\b57w2k.sys:
    - iv. If the name of the device driver file has changed...
      - 1. Modify argument number one to point to the new name of the device driver
        - a. \SGUIDE\ADAPT\Networking\BCOMX345\WIN2K\b57w2k.sys: to \SGUIDE\ADAPT\Networking\BCOMX345\WIN2K\E1000NT5.SYS:
    - v. Modify argument number two to point to the new directory created in step 2 above
      - 1. ...:\SGUIDE\ADAPT\Networking\BROADCOM\PKGS\90p4116w.exe -s -a -s to ...:\SGUIDE\ADAPT\Networking\BCOMX345\PKGS\90p4116w.exe -s -a -s
    - vi. Modify argument number two to point to the new package name
      - 1. \SGUIDE\ADAPT\Networking\BCOMX345\PKGS\90p4116w.exe -s -a -s to \SGUIDE\ADAPT\Networking\BCOMX345\PKGS\02R8675W.exe -s -a -s
    - vii. If the name of the device driver file has changed...
      - 1. Add or modify the third argument to point to the old device driver name
        - a. In this case, we must add the third argument  
...\02R8675W.exe -s -a -s to ... \02R8675W.exe -s -a -s:  
s:b57w2k.sys
    - viii. Save and close the file



## 6. Create the new UpdateXpress CD

The CD you create **MUST** be bootable. Due to legal concerns, IBM cannot neither provide nor recommend tools that can create bootable CD's or ISO images. You must use your favorite CD producer software. The software you use must support the El-Torito specification for bootable CD's. The name of the diskette image that the UpdateXpress CD uses is D:\CustomUXCD\pcdos.img.

Please note that the current UpdateXpress is almost filled to capacity and there may not be enough room to add all of your updates. While it is not recommended that you delete any of the current content of the UpdateXpress CD, in certain cases you may have to. The only directories that could possibly be removed are those for the machines that your company does not support. For example, if your company does not support any IBM eServer xSeries 440's, you may remove the D:\CustomUXCD\SGUIDE\MACH\8687, D:\CustomUXCD\SGUIDE\MACH\x440, and D:\CustomUXCD\SGUIDE\MACH\x440-16 directories.