WHITE PAPER

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COMPAQ

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Compaq Guide to PC Deployment

Network Installation of Microsoft Windows 95 on Compaq Deskpro EP and Deskpro EN Series of Personal Computers Using Microsoft Tools

This Guide provides information useful to departments charged with initial deployment of Microsoft Windows 95 over a network connection to Compaq Deskpro EP and Deskpro EN Series of Personal Computers. Many of the deployment strategies explained in this Guide are also useful in a more general sense.

NOTICE

The information in this publication is subject to change without notice.

Compaq Guide to PC Deployment
Network Installation of Microsoft Windows 95 on Compaq Deskpro EP and Deskpro EN Series of Personal Computers Using Microsoft Tools

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ASSUMPTIONS

The following assumptions are made in this paper:

- You understand how to create a network boot diskette used to access the Microsoft Windows 95 installation share.

- You understand or can locate information on how to configure the non-hardware specific portions of Microsoft Windows 95 for your specific installation (i.e. networking configuration, optional components, etc.)

- You know what hardware must be supported.

- You can access the Web and download the appropriate SoftPAQs containing the device driver software from http://www.compaq.com/support.

- The deployment team has access to the Microsoft Windows 95 Resource Kit.

- Each client computer has a licensed copy of Windows 95.

HIGH LEVEL OVERVIEW OF THE PROCESS

The following steps outline the network installation process:

1. Copy the operating system software to the server.

2. Download all of the necessary device drivers (SoftPAQs) from the Compaq Web site at http://www.compaq.com/support.

3. Install device drivers in MSBATCH.INF and CUSTOM.INF scripts. (This paper provides more detailed information on this step in the process.)

4. Set up a network share for the installation files. (Referred to throughout this paper as the installation share.)

5. Boot the client computer.

6. Copy the operating system and device drivers from the installation share to the client computer.

7. Run Setup on the client computer.

CONVENTIONS

In this paper, generic drive letters are used to represent actual drive letters. The following conventions are used where drive letters are specified:

A:\ = Bootable diskette drive
C:\ = Local hard drive where Windows 95 will be installed
D:\ = CD-ROM drive
N:\ = Drive letter mapped to a network share

Installation Share refers to the location on a network drive where the Windows 95 operating system files that will be deployed exist.

REFERENCES TO MICROSOFT DOCUMENTATION

Use the following resources to help you deploy Microsoft Windows 95 on Compaq Deskpro EP or Deskpro EN Series client systems:

- The Microsoft Windows 95 Resource Kit. This is very useful for understanding the deployment strategies described in this paper. It gives specific information on the options used to automate the installation of Windows 95. Sections of particular interest include: Chapters 1-6 (Deployment Planning Guide and Installation), along with Appendices C & D (INF files and MSBATCH.INF)

- Microsoft's Knowledge Base, located on the Web at http://support.microsoft.com/support, contains articles describing known installation issues and solutions.

- SETUP.TXT from the Windows 95 CD provides useful information about setting up Windows 95 and describes some known issues.

HARD DRIVE AND HARDWARE PREPARATION

You should make file system decisions **before** installing the operating system. Microsoft Windows 95 OSR2 supports both FAT16 and FAT32, however OSR1 and retail (OSR0) only support FAT16.

Ensure that all factory-installed Compaq hardware is properly connected in each target computer. Refer to the *Guide to Features & Upgrades* included with the Compaq Deskpro EP Series and Deskpro EN Series computers if you have any questions regarding how the hardware is installed in the system.

BASE OS LAYOUT

Operating System File Layout

The Microsoft Windows 95 setup files should be placed on a network share. The Compaq drivers and software should be integrated into this installation share. This will allow end users to boot their system from a network boot diskette and start the Windows 95 Setup program from the installation share. The installation will proceed as described in the MSBATCH.INF file that must be provided for automated installations.

Complete the following steps to configure the installation files:

1. Obtain the required device drivers for the systems you will be supporting. This can be done by downloading the appropriate SoftPAQs, located on the Web at http://www.compaq.com/support/. Each SoftPAQ should be stored and executed in its own directory. Refer to the following sections for specific information regarding individual device driver sets.

2. Copy the \Win95 directory from the Microsoft Windows 95 CD to the network share. Alternatively, if you are using OSR1 or the retail version (OSR0), you can use NETSETUP.EXE from the \ADMIN\NETTOOLS\NETSETUP directory to copy the files.

3. Use the "Batch INF Script Editor" from the Microsoft Windows 95 Resource Kit (also found on the Windows 95 CD in the \ADMIN\NETTOOLS\NETSETUP directory) to configure an MSBatch file to automate the installation. This file can be created manually. This paper will show you how to edit this file to add support for Compaq software.

4. Use Notepad to save the CUSTOM.INF file shown in Appendix B to the Windows 95 installation share on the network. This will integrate Compaq and Microsoft INFs into the Windows 95 installation share.

5. Add any other software to the installation share. Additional software can be installed using the MSBATCH.INF file. Please see the Microsoft Windows 95 Resource Kit for more information on adding additional software to be installed via this process.

The installation share is now ready. To perform installation, complete the following steps:

NOTE: These steps may be automated using batch files.

1. Boot the target system from a bootable MS-DOS diskette containing network drivers configured for the NIC in the system.

2. Log on to the network (as required) and map a drive to the network share where the Windows 95 installation files reside.

3. Partition and format the hard drive (if necessary). If you want to use the FAT32 file system (OSR2 or later only), you should enable large hard drive support in FDISK and create the desired partitioning size.

4. Execute the Windows 95 SETUP.EXE program and specify the MSBATCH.INF file as a command line parameter (i.e. SETUP.EXE /is MSBATCH.INF).

Machine Specific Information

Compaq recommends obtaining and installing the following Microsoft updates to Windows 95. For general information, refer to the Microsoft documentation at http://support.microsoft.com/support/kb/articles/q161/0/20.asp. For more detailed instructions on locating, downloading, and installing Microsoft updates, refer to http://support.microsoft.com/support/kb/articles/Q119/5/91.asp.

USBSUPP.EXE – OSR2 only – USB supplement

LPT.VXD – Retail (OSR0) only – information and instructions can be found at http://support.microsoft.com/support/kb/articles/q157/9/49.asp.

ESDI506.PDR and **VOLTRACK.VX**D – information can be found at http://support.microsoft.com/support/kb/articles/q171/3/53.asp.

VMM.VXD and **VMM32.VXD** – information can be found at http://support.microsoft.com/support/kb/articles/q179/8/97.asp.

INTEGRATING VIDEO DRIVERS

General Process

1. Download each required SoftPAQ to its own directory (under the N:\WIN95 directory) named for the contents (ex: N:\WIN95\ATI\ for the ATI Technologies video drivers) and execute the SoftPAQ. This will lay out the files in a directory structure specified by the SoftPAQ.

2. If there are DISKx subdirectories move the contents down one level. For Example ATI\DISK1 would move to ATI\.

3. Edit the [SourceDisksFiles] section in the driver's installation INF (named in the Errata) to add the subdirectory name to all of the files listed

For example change:

[SourceDisksFiles]
;<file> = <disk number>,<subdir>,<filename>,<size>,<checksum>
install.exe = 1,,91648

to:

[SourceDisksFiles]
;<file> = <disk number>,<subdir>,<filename>,<size>,<checksum>
install.exe = 1,DIAMOND,91648

or change:

[SourceDisksFiles]
;<file> = <disk number>,<subdir>,<filename>,<size>,<checksum>
install.exe = 1,Win95,91648

to:

[SourceDisksFiles]
;<file> = <disk number>,<subdir>,<filename>,<size>,<checksum>
install.exe = 1,DIAMOND\Win95,91648

or change:

[SourceDisksFiles]
;<file> = <disk number>,<subdir>,<filename>,<size>,<checksum>
install.exe = 1

to:

[SourceDisksFiles]
;<file> = <disk number>,<subdir>,<filename>,<size>,<checksum>
install.exe = 1,DIAMOND

4. Copy the driver's installation INF (named in the Errata) from the driver's directory to N:\WIN95

5. The video driver is now integrated into the Windows 95 installation share.

Specific Errata

Diamond NVidia Viper 330

Use DMDISP.INF as the installation INF.

Matrox

- Use MGAPDX64.INF as the installation INF.

- The Matrox drivers will be added to the installation files as described above but the Power Desk utility will not be integrated into the installation by this method.

ATI

Use MACXW4.INF as the installation INF.

Edit MACXW4.INF to set the value for signature in the [version] section to be "$CHICAGO$"

For example change from:

```
[version]
signature="$Windows 95$"
```

to:

```
[version]
signature="$CHICAGO$"
```

STB

Use V128II.INF as the installation INF.

INTEGRATING NIC DRIVERS

General Process

1. Download each required SoftPAQ to its own directory (under the N:\WIN95 directory) named for the contents (ex: N:\WIN95\ATI\ for the ATI Technologies video drivers) and execute the SoftPAQ. This will lay out the files in a directory structure specified by the SoftPAQ.

2. If there are DISKx subdirectories move the contents down one level. For Example ATI\DISK1 would move to ATI\.

3. Edit the [SourceDisksFiles] section in the driver's installation INF (named in the Errata) to add the subdirectory name to all of the files listed. For example, for DIAMOND change:

```
[SourceDisksFiles]
;<file> = <disk number>,<subdir>,<filename>,<size>,<checksum>
install.exe = 1,,91648
```

to:

```
[SourceDisksFiles]
;<file> = <disk number>,<subdir>,<filename>,<size>,<checksum>
install.exe = 1,DIAMOND,91648
```

or change:

```
[SourceDisksFiles]
;<file> = <disk number>,<subdir>,<filename>,<size>,<checksum>
install.exe = 1,Win95,91648
```

to:

```
[SourceDisksFiles]
;<file> = <disk number>,<subdir>,<filename>,<size>,<checksum>
install.exe = 1,DIAMOND\Win95,91648
```

or change:

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[SourceDisksFiles]
;<file> = <disk number>,<subdir>,<filename>,<size>,<checksum>
install.exe = 1

to:

[SourceDisksFiles]
;<file> = <disk number>,<subdir>,<filename>,<size>,<checksum>
install.exe = 1,DIAMOND

4. Copy the driver's installation INF (named in the Errata) from the driver's directory to N:\WIN95.

5. The NIC driver is now integrated into the Windows 95 installation files.

Specific Errata

3com NIC driver

- Disk 1 is not needed.

- Use W95EL90X.INF as the installation INF.

- Edit W95EL90X.INF and Win95\DRMON95.INF to set the value for signature in the [version] section to be "$CHICAGO$"

  For example change from:

  [version]
  signature="$Windows 95$"

  to

  [version]
  signature="$CHICAGO$"

Intel NIC

- Edit NETCPQI.INF to set the value for signature in the [version] section to be "$CHICAGO$"

  For example change from:

  [version]
  signature="$Windows 95$"

  to

  [version]
  signature="$CHICAGO$"

- Copy 82557ndi.dl_ from the drivers directory to N:\WIN95

- Use NETCPQI.INF as the installation INF.

NetFlex3 (TLAN)

▪ After extracting the SoftPAQ, there are 2 directories to choose the driver set from: NDIS3 and NDIS4. Select NDIS4 for OSR2 and NDIS3 for earlier versions.

▪ Make the following modification to the NETFLX3.INF

Change:

[NetFlex3.ndis3.CopyFiles]
NetFlx3.sys,NetFlx3.sy_,,2

to:

[NetFlex3.ndis3.CopyFiles]
NetFlx3.sys,netflx3\NetFlx3.sy_,,2

▪ Copy all of the files from the appropriate directory to the N:\Win95\NETFLEX3 directory.

▪ Use NETFLX3.INF as the installation INF.

INTEGRATING AUDIO DRIVERS

General Process

1. Download each required SoftPAQ to its own directory (under the N:\WIN95 directory) named for the contents (ex: N:\WIN95\ATI\ for the ATI Technologies video drivers) and execute the SoftPAQ. This will lay out the files in a directory structure specified by the SoftPAQ.

2. If there are DISKx subdirectories move the contents down one level. For Example ATI\DISK1 would move to ATI\.

3. Edit the [SourceDisksFiles] section in the driver's installation INF (named in the Errata) to add the subdirectory name to all of the files listed. For example for DIAMOND change:

[SourceDisksFiles]
;<file> = <disk number>,<subdir>,<filename>,<size>,<checksum>
install.exe = 1,,91648

to:

[SourceDisksFiles]
;<file> = <disk number>,<subdir>,<filename>,<size>,<checksum>
install.exe = 1,DIAMOND,91648

or change:

[SourceDisksFiles]
;<file> = <disk number>,<subdir>,<filename>,<size>,<checksum>
install.exe = 1,Win95,91648

to:

[SourceDisksFiles]
;<file> = <disk number>,<subdir>,<filename>,<size>,<checksum>
install.exe = 1,DIAMOND\Win95,91648

or change:

[SourceDisksFiles]
;<file> = <disk number>,<subdir>,<filename>,<size>,<checksum>
install.exe = 1

to:

[SourceDisksFiles]
;<file> = <disk number>,<subdir>,<filename>,<size>,<checksum>
install.exe = 1,DIAMOND

4. Copy the driver's installation INF (named in the Errata) from the driver's directory to N:\WIN95.

5. The audio driver is now integrated into the Windows 95 installation files.

Specific Errata

ESS

▪ Rename OEMSETUP.INF to ESS1869.INF.

▪ Use ESS1869.INF as the installation INF.

INTEGRATING MODEM DRIVERS (US ONLY)

General Process

1. Download each required SoftPAQ to its own directory (under the N:\WIN95 directory) named for the contents (ex: N:\WIN95\ATI\ for the ATI Technologies video drivers) and execute the SoftPAQ. This will lay out the files in a directory structure specified by the SoftPAQ.

2. If there are DISKx subdirectories move the contents down one level. For Example ATI\DISK1 would move to ATI\.

3. Edit the [SourceDisksFiles] section in the driver's installation INF (named in the Errata) to add the subdirectory name to all of the files listed. For example for DIAMOND change:

[SourceDisksFiles]
;<file> = <disk number>,<subdir>,<filename>,<size>,<checksum>
install.exe = 1,,91648

to:

[SourceDisksFiles]
;<file> = <disk number>,<subdir>,<filename>,<size>,<checksum>
install.exe = 1,DIAMOND,91648

or change:

[SourceDisksFiles]
;<file> = <disk number>,<subdir>,<filename>,<size>,<checksum>
install.exe = 1,Win95,91648

to:

[SourceDisksFiles]
;<file> = <disk number>,<subdir>,<filename>,<size>,<checksum>
install.exe = 1,DIAMOND\Win95,91648

or change:

[SourceDisksFiles]
;<file> = <disk number>,<subdir>,<filename>,<size>,<checksum>
install.exe = 1

to:

[SourceDisksFiles]
;<file> = <disk number>,<subdir>,<filename>,<size>,<checksum>
install.exe = 1,DIAMOND

4. Copy the driver's installation INF (named in the Errata) from the driver's directory to
   N:\WIN95

5. The modem driver is now integrated into the Windows 95 installation files.

Specific Errata

Netelligent 56K FAX/Modem

- Use CPQ_400.INF as the installation INF.

- Currently, the SoftPAQ for Netelligent 56K FAX/Modem requires the creation of a diskette.
  Copy the entire contents of the diskette to N:\WIN95\CPQ56K and follow the rest of the
  instructions for integrating modems.

INTEGRATING AGENTS (INTELLIGENT MANAGEABILITY AND REMOTE SERVICES)

General Process

1. Download each required SoftPAQ to its own directory (under the N:\WIN95 directory) and
   execute the SoftPAQ. This will lay out the files in a directory structure specified by the
   SoftPAQ.

2. Add the SETUP.EXE program for each agent to the RunOnce\Setup registry entry using the
   MSBATCH.INF file. For example:

[Install]
AddReg=CPQ.App.Setup

[CPQ.App.Setup]
HKLM,%KEY_RUNONCE_SETUP%,"IM Agents",,” \\SERVER\SHARENAME\IM\Setup.exe -
s”
HKLM,%KEY_RUNONCE_SETUP%,"Remote Services",,” \\SERVER\SHARENAME
    \Remote\Setup.exe -s”

[Strings]
KEY_RUNONCE_SETUP="SOFTWARE\Microsoft\Windows\CurrentVersion\RunOnce\Setup"

Specific Errata

Intelligent Manageability

▪ The SNMP network service should be added to the installation to support the Intelligent Manageability software. This can be done by copying SNMP from the \ADMIN\NETTOOLS\SNMP directory on the Windows 95 CD to the N:\Win95\SNMP directory and adding the following to the CUSTOM.INF:

[load_inf]
snmp.inf

OTHER COMPAQ SOFTWARE (WINDIAGS, SAFETY & COMFORT GUIDE, ETC)

General Process

1. Download each required SoftPAQ to its own directory (under the N:\WIN95 directory) named for the contents (ex: N:\WIN95\ATI\ for the ATI Technologies video drivers) and execute the SoftPAQ. This will lay out the files in a directory structure specified by the SoftPAQ.

2. Add the SETUP.EXE program for each agent to the RunOnce\Setup registry entry using the MSBATCH.INF file. For example:

[Install]
AddReg=CPQ.App.Setup

[CPQ.App.Setup]
HKLM,%KEY_RUNONCE_SETUP%,"WinDiags",," \\SERVER\SHARENAME
\WinDiags\Setup.exe -s"
HKLM,%KEY_RUNONCE_SETUP%,"Safety Guide",," \\SERVER\SHARENAME
\SCG\Setup.exe -s"

[Strings]
KEY_RUNONCE_SETUP="SOFTWARE\Microsoft\Windows\CurrentVersion\RunOnce\Setup"

Specific Errata

Diagnostics for Windows

The Diagnostics for Windows Setup program needs to be the first Setup program added to the RunOnce\Setup registry Key. This can be accomplished by adding as the first line in the [CPQ.App.Setup] section.

APPENDIX A

Sample MSBATCH.INF File

```
;
; MSBATCH.INF
;
[SETUP]
Express=1
InstallDir="c:\WINDOWS"
ProductID=xxx-xxxxxxx
EBD=0
ChangeDir=0
OptionalComponents=1
Network=1
System=0
CCP=0
CleanBoot=0
Display=0
PenWinWarning=0
InstallType=1
DevicePath=1
TimeZone="Central"
Uninstall=0
VRC=0
NoPrompt2Boot=0
Verify=0
ProductType=1

[NameAndOrg]
Name="compaq user"
Org="Compaq"
Display=0

[Network]
Clients=VREDIR
Protocols=MSTCP,NETBEUI
Services=SNMP
PrimaryLogon=VREDIR
ComputerName="UniqueName"
Workgroup="Corpd"
Description="none at this time"
UserSecurity=Share
WorkstationSetup=0
DisplayWorkstationSetup=0
Display=0

[MSTCP]
DHCP=1
WINS=DHCP

[VREDIR]
LogonDomain="Deployed"
ValidatedLogon=0

[Printers]

[Install]
AddReg=CPQ.App.Setup
```

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[Strings]
KEY_RUNONCE="SOFTWARE\Microsoft\Windows\CurrentVersion\RunOnce"
KEY_RUNONCE_SETUP="SOFTWARE\Microsoft\Windows\CurrentVersion\RunOnce\Setup"
KEY_RUNONCE_EX="SOFTWARE\Microsoft\Windows\CurrentVersion\RunOnceEx"

[CPQ.App.Setup]
HKLM,%KEY_RUNONCE_SETUP%,"A Win
Diags",,"\\ServerName\ShareName\Deliverables\WDiags\setup.exe -s"
HKLM,%KEY_RUNONCE_SETUP%,"Compaq Value add
#1",,"\\ServerName\ShareName\Deliverables\CPQ95\DISK1\setup.exe -s"
HKLM,%KEY_RUNONCE_SETUP%,"Compaq Value add
#2",,"\\ServerName\ShareName\Deliverables\work\CPQ95\DISK2\setup.exe -s"
HKLM,%KEY_RUNONCE_SETUP%,"Compaq Value add
#3",,"\\ServerName\ShareName\Deliverables\CPQ95\DISK3\setup.exe -s"
HKLM,%KEY_RUNONCE_SETUP%,"Desktop
Management",,"\\ServerName\ShareName\Deliverables\SNMPAGNT\DM351\setup.exe -s"
HKLM,%KEY_RUNONCE_SETUP%,"Remote
Services",,"\\ServerName\ShareName\Deliverables\REMOTE\setup.exe -s"
HKLM,%KEY_RUNONCE_SETUP%,"S&CG",,"\\ServerName\ShareName\Deliverables\SCG\set
up.exe -s"

APPENDIX B

Sample CUSTOM.INF file

```
;
; custom.inf
;
[Version]
Signature="$CHICAGO$"
SetupClass=BASE

[SourceDisksNames]
; Cabinet file names and associated disks
; <cab#>=<disk#>,<cabinet filename>, ID (Unused, must be 0)
101="Custom INF Precopy files",,0

[SourceDisksFiles]
;<file>=<cabinet number>,<subdir>,<filename>,<size>,<checksum>
;Note: File is not in a cabinet if cab# is 0

[DestinationDirs]
infinst.temp.dir.files=2
infinst.inf.files=17

[CUSTOM_PRECOPY]
CopyFiles=infinst.temp.dir.files

[infinst.temp.dir.files]
macxw4.inf
w95el90x.inf
dmdisp.inf
netcpqi.inf
netflx3.inf
cpq_400.inf
snmp.inf
mgapdx64.inf

[BaseWinOptions]
infinst.install

[infinst.install]
CopyFiles=infinst.inf.files

[infinst.inf.files]
macxw4.inf
w95el90x.inf
dmdisp.inf
netcpqi.inf
netflx3.inf
drmon95.inf
cpq_400.inf
snmp.inf
mgapdx64.inf
```

[Strings]

[load_inf]
w95el90x.inf
dmdisp.inf
netcpqi.inf
netflx3.inf
drmon95.inf
snmp.inf

APPENDIX C

Remote ROM Flash

The Remote ROM Flash Utilities SoftPAQ contains utilities to update the system ROM and set the administrator password for setup without interaction. These can be used either by integrating them into the boot diskette used to set up new machines or in conjunction with remote setup utilities such as LCM. For instructions on using these utilities refer to the README.TXT file contained in the SoftPAQ. The Remote ROM Flash Utilities SoftPAQ can be found on both the Software Support CD and on the Web at http://www.compaq.com/support/.