

## Installation of HP-UX 9.1 on HP 9000/300 Series Computer

Installation is from CD-ROM connected via SCCI interface. Discs required:

- HP-UX 9.0 Install (B2378-13621)
- HP-UX 9.1 Update (B2378-87054)
- HP-UX 9.10 YR2K Patches (B6736-87004)

ISO images can be downloaded from and burned to CD-R. Bootrom revision 2.0 is required to install from a SCSI CD-ROM drive.

### Base-System Installation Procedure

- Power-up CD-ROM drive and insert HP UX 9.0 Install disc
- Power-up compatible hard drive and start computer. Note that HP-UX installs most easily onto hard drives listed in the file /etc/disktab on the installation CD. If using a SCSI-to-SD-card disc emulator, set it up to appear like a drive listed in that file with the same number of 512 byte sectors.
- After the keyboard is recognised, press the spacebar to allow system selection
- After the memory test completes, select the HP-UX install system on the CD-ROM
- Select the short file names option (maximum 14 characters) if you plan to share the disc with BASIC/WS or Pascal workstation; otherwise long file names are preferred
- Accept the default swap space
- Leave the date set before year 2000
- A skeleton OS will then be installed, after which the computer will re-boot automatically
- At the prompt, replace the Install CD with the HP-UX 9.10 Update CD. It might be necessary to cycle the power to the CD-ROM drive or, if there are problems reading the second disc after the re-boot, to swap the CDs while the computer is re-booting.
- Select all file sets for installation
- The file sets are then copied from the CD-ROM, decompressed and installed.

### Post-Install Setup

- After the base-system installation, the computer will reboot automatically again and ask if you want to setup networking; the following parameters are required:

Parameter	Description	Value
System name	Name for this computer	<host_name> <sup>†</sup>
IP address	Fixed IP address*	<IP_address>
Subnet mask		e.g. 255.255.255.0
Gateway hostname	Router name	<router_host_name> <sup>†</sup>
Gateway IP address	IP address of router/gateway	e.g. 192.168.0.1
BIND local domain name	Name your local domain	<local_domain_name> <sup>†</sup>
BIND server hostname	Name for your DNS server	<DNS_name> <sup>†</sup>
BIND IP address	IP address of DNS server	<DNS_IP_address>

\* You need to reserve the IP address for your computer against its MAC address

<sup>†</sup> Select any unique valid name host/domain name

- Decline the option to make VUE a font client
- Setting a root password is optional

- Make sure your router or switch unit supports 10 mbit/s operation
- If you choose to skip this step, network parameters can be setup later with the command: `/etc/set_parms hostname`

### Installing Year 2000 Patches

- Insert the YR2K disc into the CD-ROM
- Then: `mount /dev/bsrc /UPDATE_CDROM; etc/update`
- When the options appear, change the source to CD-ROM
- Select all file sets to install (no codeword is required, so leave blank)
- When installation is complete, set the time and date: `/etc/set_parms time`

### Installing Other Patches

Some 21 additional operating-system patches are available as individual files. These can be installed individually with the following commands:

```
sh <patch> # unpack the file
/etc/update '/tmp/<patch>.updt' -d '/' <patch> # install the patch
```

Replace <patch> by the patch number, e.g. PHCO\_7204. If a kernel rebuild and reboot is required, add the -r switch to the update command, e.g. :

```
/etc/update '/tmp/<patch>.updt' -d '/' -r <patch>
```

### Post-Install: Check Key Files

- After installation, check the files that control network connectivity, domain name resolution, time synchronisation and the root user's profile.

<b>File: /etc/hosts</b>	<b>Example contents:</b>
127.0.0.1	localhost loopback
192.168.0.1	<router_host_name> #local router
<IP_address>	<host_name> <host_name>.
<other IP address>	<other host> #e.g. PC
<b>File: /etc/resolv.conf</b>	<b>Contents:</b>
nameserver	<DNS IP address> # DNS server
<b>File: /etc/nsswitch.conf</b>	<b>Contents (on a single line):</b>
hosts: files[NOTFOUND=continue UNAVAIL=continue]	
dns[NOTFOUND=continue UNAVAIL=continue TRYAGAIN=continue]	
<b>File: /etc/src.sh</b>	<b>Example contents:</b>
SYSTEM_NAME=<host_name> ; export SYSTEM_NAME	
TZ=GMT0BST ; export TZ	
<b>File: /usr/contrib/etc/ntp.conf</b>	<b>Example contents:</b>
server 0.uk.pool.ntp.org	# examples for the UK
server 1.uk.pool.ntp.org	
driftfile /usr/contrib/etc/ntp.trace	# must be writable
<b>File: /.Profile</b>	<b>Example contents:</b>
My profile file (/bin/sh initialization).	
LINES=49	

```

COLUMNS=128
TERM=hp98550a
export LINES COLUMNS TERM
TERMINFO=/usr/local/share/terminfo/h
PAGER=/usr/local/bin/less
export TERMINFO PAGER
PATH=/usr/local/bin:/bin:/usr/bin:/etc:/usr/contrib/bin:/user
s/root:/usr/lib:/usr/lib/acct
PATH=$PATH:/usr/local/emacs/bin:/usr/local/perl5/bin
MANPATH=/usr/man:/usr/contrib/man:/usr/local/man
export PATH MANPATH
echo
echo "Value of TERM has been set to \"$TERM\". "
EDITOR=vi
export EDITOR
# Set up the terminal
stty erase "^H" kill "^U" intr "^C" eof "^D"
if [ -x /usr/bin/tabs ]
then
    tabs
else
    echo "The command \"/usr/bin/tabs\" was not found."
fi
# Set up shell environment:
set -u                # error if undefined variable.
trap "echo 'logout root'" 0    # what to do on exit.
EDITOR=vi
export EDITOR
echo "WARNING:  YOU ARE SUPERUSER\n"

```

- Installing Ansgar Kueckes' GNU utilities is strongly recommended. The full package can be downloaded from Bitsavers ([http://www.bitsavers.org/bits/HP/HP\\_9000/HPUX\\_9](http://www.bitsavers.org/bits/HP/HP_9000/HPUX_9))
- The `PATH` variable is set in this example to include the directories used by the GNU utilities and the `PAGER` setting assumes that `less` is installed (part of the GNU utilities).
- Create additional users using the SAM utility and copy `/.profile` to `/users/<user>/.profile`
- `Init 4` to start VUE
- Check for correct domain name resolution and network connectivity using `ping` on both internet and local sites to be sure that your settings work. A second level of checking is to use `ftp` to external sites (e.g. <ftp.gnu.org>).

## Printer Support

HP-UX 9 uses the standard Unix `lp` command for printing and knows about three types of printer configurations: directly connected local printers, network printers and remote printers. In the time of HP-UX 9, the distinction between network and remote printers was that a network printer was connected directly to the LAN, whereas a remote printer was connected to another host accessible on the LAN. The LPD/LPR protocol is used for remote printers. Many modern network printers have an LPD server built in which looks to HP-UX like a remote host. Local printers can be connected by means of the HP-IB, RS232 or parallel interfaces. Physical installation of a printer is detailed in the manual *HP-UX Installing Peripherals* (B1864-90011) while configuration of the printer spooler is described in *HP-UX Systems Administration Tasks* (B1864-90010). Each printer is associated with one or more print-spooler queues, one of which can be designated as the default `lp` queue. A key element of the setup for both local and network printers is the association of each print-spooler queue with an interface script. It is the interface script that controls the way in which data are sent to the printer. A number of model scripts are stored in `/usr/spool/lp/model` and additional scripts for some modern printers can be obtained from the printer vendor. Unfortunately, most 'GDI' printers are an exception. These printers cannot interpret Postscript, PCL or even plain ascii files; instead, they expect printer-driver software running on the host to convert the file into a proprietary binary page description language. Unfortunately, these printer drivers are unavailable for vintage operating systems. Therefore a modern GDI printer may not work with HP-UX 9.

When installing a remote or network printer, first find its IP address and network name. Then edit `/etc/hosts` to add your printer to the look-up table (N.B. you should also configure your DHCP server to reserve fixed IP addresses for your HP-UX host and any other systems that you want to access from it). Finally, use SAM to create and configure the printer queue(s) to be associated with that printer. It should then be possible to print a file using `lp -d<queue_name> <file_name>` or, if it's the default printer queue, just `lp <file_name>`.

If you have an HP network printer then it is preferred to configure it using the *HP JetDirect* software instead of SAM. *HP JetDirect* software for HP-UX 9.x can be installed using `/etc/update` from the *HP-UX Application Software* CD (B2378-10143) – no code word is required. Once, *HP JetDirect* has been installed, you might need to obtain a model scripts for your printer from the HP website and install it in `/usr/spool/lp/model`. To start, run `jetadmin` and select the option to add a printer to the local spooler. You then provide the host name of the printer and the software checks that it is recognised as an HP network printer. It seems to recognise even modern HP network printers but probably does not work with non-HP equipment. Once the printer has been found on the network, `jetadmin` will prompt for the printer type, which can be selected from the a list of known printers. Of course modern printers do not appear on this list but there are two options for installing one. The first is to simply select the nearest equivalent (matching the type, e.g. laser, and colour/monochrome capability) and see if it works, while the second is to select the option 'none of these' and configure the setup manually. Next the connection method has to be specified and option 3 'other' should be chosen. One then has the possibility of modifying key setup properties such as the printer queue name, whether or not the queue is the default and selecting or deselecting banner pages. One of the options is to change the automatically-assigned model script, which will be necessary if a known printer type was not chosen (via the 'none of these' option). Once

completed, select option 0 to install the printer queue. The *JetDirect* software has options to test the connection and the printer's ability to print text, postscript and HPGL-2 files.

### Sharing the Disc with BASIC/WS and/or Pascal Workstation

If you want to install BASIC/WS and/or Pascal Workstation on the same disc as HP-UX, you should install HP-UX first and be sure to select the option for short file names when formatting the disc. Once HP-UX is installed, do the following:

- Edit the password file `/etc/passwd` and add these lines

```
basic:*:18:9:#BASIC workstation user:/users/workstation/basic:/bin/false
pws:*:17:9:#BASIC workstation user:/users/workstation/pws:/bin/false
```

- Edit the group file `/etc/group` and add this line

```
workstation::9:basic,pws
```

- As superuser, write enable the root (`cd /; chmod 777`)
- Shutdown (`shutdown -h now`)
- Then boot BASIC/WS or PAWS, copy the system files to the directory `/WORKSTATIONS` on the hard disc and install the boot file in the root directory (using `STORE SYSTEM` in BASIC/WS or `OSINSTALL` in PAWS).

### Other Information

The S300 has port 23 open for telnet connection and port 513 open for remote login (rlogin) via the network; these work. From a Windows 10 computer, open Windows Powershell and enter, for example:

```
New-Object System.Net.Socket.TcpClient ("192.168.0.50",23)
```

Replace 192.168.0.50 by the IP address of your S300 computer. If the results indicates that a connection was made then the telnet port is working. One can use PuTTY as a telnet (port 23) or rlogin (port 513) client.

The system console can be configured for different keyboards, character sets, display modes etc. Consult the manual *Facilities for Series 200, 300 and 500 HP-UX Concepts and Tutorial* (part number 97089-90081).