

Remote installation of OS/2

Introduction

On Warp 4, a facility was provided so that OS/2 could be installed over a network, using just three boot diskettes on the target workstation. This had a graphical interface, and was very simple to use.

The graphical interface was withdrawn in the Convenience Packs, but the functionality is still there if one is prepared to spend a few minutes setting it up for the first time. This page provides step by step instructions on doing so.

A REXX script is also available, and this largely automates the whole process of setting up for a remote installation. If you use this, there isn't much need to read the instructions below! Click [here](#) to find out more.

Terminology

In the following instructions, the system on which the installation media resides will be called the **code server** (but it need not run Warp Server); this term will also be used for the specific networking software that provides access to the installation media across the network. The system on which OS/2 is being installed will be called the **target system**.

In references to files and directories, a lower case drive letter means that the appropriate drive letter should be substituted according to the configurations of the systems being used. To save repeated explanations, note that the following conventions will be used:

- n: The drive letter of the CDROM containing the OS/2 distribution (the main CDROM, not the 'Installation' CDROM).
 - g: The drive letter of a convenient hard disk volume on the code server.
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What you will need

The following will be required:

- A working OS/2 system (the code server) with a CDROM drive. This system need not be the same version as the one being installed; it is likely that Warp 3 will work, and probably even OS/2 2.0. The basic NETBIOS protocol must be installed. NETBIOS over TCP/IP is not sufficient, although it can also be present without causing too many problems. [Note 1](#) and [Note 2](#) will help you check if you are not sure which is installed, and [Note 3](#) will help you make sure that things are OK if you do have both NETBIOS and NETBIOS over TCP/IP installed.
 - The target system; this must naturally have a network connection to the code server.
 - Three blank, formatted 1.44MB diskettes. These should be labelled:
 - Remote Installation Diskette (D0)
 - Remote Diskette 1 (D1)
 - Remote Diskette 2 (D2)
 - The device driver and NIF file for the network interface card (NIC) in the target system (unless supported by OS/2 as delivered; if you are unsure, see [Note 4](#)). These files should be placed on a additional (otherwise blank) formatted diskette; this will be referred to as the 'NIC driver diskette'. Note that some NICs also have other associated files, such as message files, and these should be copied over too. No diskette is necessary if the NIC is directly supported by OS/2.
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Setting up the code server

This part is simple and quick:

1. Make sure that the OS/2 distribution CDROM (not the boot CDROM, but the main one) is in the CDROM drive.
2. Create a directory on the hard disk, calling it `g:\SRVIFS`.
3. Issue the command:

```
XCOPY n:\CID\SRVIFS g:\SRVIFS
```

This copies a small number of server files to the code server.

4. In the `g:\SRVIFS` directory, create a file named `SERVICE.INI` containing the following lines:

```
Name = CIDSRV
GroupName = No
Path = n:\
PerClient = No
PermitWrite = No
MaxClients = 2
Alias = ReadOnly,Single,CDROM,n:\
Alias = ReadWrite,Single,STATUS,g:\SRVIFS
```

This is the configuration file for the code server. You can use any name you like for the server, but `CIDSRV` is as good as any (although it must be a unique name on your NETBIOS network).

5. If you have a NIC driver diskette (i.e. the NIC is not directly supported by OS/2), then you also need to perform this step. Make sure that the NIC driver diskette is in drive A:, then issue these commands:

```
MKDIR g:\SRVIFS\IBMCOM
MKDIR g:\SRVIFS\IBMCOM\MACS
COPY A:\ g:\SRVIFS\IBMCOM\MACS
```

Running the code server

The code server does not need to be started until you are ready to start the installation of the target system, but it is so simple to do that you may as well do it now. First, make sure that the OS/2 CDROM is still in the CDROM drive. Then, to start the code server, simply go to the `g:\SRVIFS` directory and issue this command:

```
SERVICE /INI=SERVICE
```

If you wish, you can use the `START` command to do this:

```
START SERVICE /INI=SERVICE
```

Note that some versions of `SERVICE` do not accept any kind of pathname for the value of the `/INI` option. This is one reason for going to the `SRVIFS` directory before issuing the command; another is to avoid running a completely different program (of the same name!) which is generally known as the `FixTool`.

A one line signon banner should appear when the server is started (of course, it will be in a separate window if you used the `START` command). If there is no banner, but just a return to the command prompt, it is likely that there is a configuration problem. See [Note 7](#) for more details.

Displaying code server status

At any time, you can check on the status of the code server by again going to the `g:\SRVIFS` directory and issuing the command:

```
SERVICE /STATUS
```

This will display current connections and other information. `/STATUS` can be abbreviated to `/s`.

Stopping the code server

The code server can be stopped in the usual ways, by closing its window or typing `ctrl-c` or `ctrl-break`. However, the cleanest (and recommended) method is to go to the `g:\SRVIFS` directory and issue the command:

```
SERVICE /QUIT
```

This causes the server to refuse new connections, and shuts it down when existing connections are closed. `/QUIT` can be abbreviated to `/QU`. You can also use `/FORCE` or `/F`, which will not wait for any pending connections to be closed.

Creating installation boot diskettes

The target system is initially booted using a specially constructed set of three diskettes. This section describes how to build those diskettes.

Making the basic diskettes

This uses the three pre-prepared empty, formatted and labelled diskettes.

1. Issue the command: `n:\CID\EXE\OS2\SEDISK /S:n:\OS2IMAGE /T:A:`
2. Follow the prompts, inserting the diskettes in the order D0, D1 then D2.

You now have basic OS/2 installation diskettes, which must be modified.

Adding basic networking to the diskettes

This step installs a basic NETBIOS networking stack onto the diskettes. This is enough to provide a way of talking across the network. The instructions are slightly different depending on whether or not you have a NIC driver diskette ([see earlier](#)).

If your NIC is directly supported

For the purposes of this example, it is assumed that the NIF file for the selected (supported) MAC driver is called `XYZETHER.NIF`.

Follow these steps:

1. Make sure that Remote Diskette 2 is in drive A:.
2. Issue the command:

```
n:\CID\SERVER\MPTS\THINLAPS n:\CID\SERVER\MPTS A: XYZETHER.NIF /TU:A:
```
3. When a message appears indicating that `CONFIG.SYS` cannot be updated, remove Remote Diskette 2, insert Remote Diskette 1, and press Enter.

If you are providing a MAC driver (your NIC is not directly supported)

In this example, let us assume that the NIF file is called `NEWNIC.NIF`.

Follow these steps:

1. Make sure that Remote Diskette 2 is in drive A:.
2. Issue the command:

```
n:\CID\SERVER\MPTS\THINLAPS n:\CID\SERVER\MPTS A: NEWNIC.NIF /TU:A: /ADD:g:\SRVIFS\IBMCOM\M
```
3. Note the additional option `/ADD`, which specifies where to find the NIF file and MAC driver. When a message appears indicating that `CONFIG.SYS` cannot be updated, remove Remote Diskette 2, insert Remote Diskette 1, and press Enter.

Final comments on networking additions

On completion, all necessary functionality has been added. If you look at `CONFIG.SYS` (on Remote Diskette 1) you will see the additions clearly indicated at the end of the file.

Adding the `THINIFS` networking client to the diskettes

The next step is to add a minimal file sharing client to the diskettes, to provide the actual access to the distribution media on the code server.

1. Make sure that Remote Diskette 2 is in drive A:.
2. Issue the commands:

```
n:\CID\SRVIFS\THINIFS /D:Z /S:n:\CID\SRVIFS /T:A: /TU:A: /SRV:\\CIDSRV\CDROM /REQ:*
n:\CID\SRVIFS\THINIFS /D:W /S:n:\CID\SRVIFS /T:A: /TU:A: /SRV:\\CIDSRV\STATUS /REQ:*
```

Obviously, the name `CIDSRV` must match the name you used when setting up the code server (the name in `SERVICE.INI`).

3. When a message appears indicating that `CONFIG.SYS` cannot be updated, remove Remote Diskette 2, insert Remote Diskette 1, and press Enter.

On completion, the networking client code has been added. If you look at `CONFIG.SYS` (on Remote Diskette 1) you will see the additions clearly indicated at the end of the file.

Making final modifications to the diskettes

Follow these steps:

1. Edit the `CONFIG.SYS` file on diskette 1, and add the following lines at the end:

```
SET OS2_SHELL=CDBOOT.EXE
SET OEMPROGRAM=\IBMINST\NPCONFIG.EXE
SET EXITWHENDONE=1
SET SAVECONNECT=1
SET ADAPTER_NIF=NEWNIC.NIF
SET SRVNAME1=CIDSRV
```

Modify the `SET ADAPTER_NIF=...` to reflect the name of the NIF file for the NIC driver being used. Also, make sure the the name specified in the `SET SRVNAME=...` line matches the one you used when setting up the code server (the name in `SERVICE.INI`). The `SET OS2_SHELL...` statement will override the one earlier in the file, so there is no need to remove that.

2. Ensure that Remote Diskette 2 is in drive A:.
3. Issue the command:

```
COPY n:\OS2IMAGE\DISK_2\CDBOOT.EXE A:\
```

Starting the installation

Follow these steps:

1. Make sure that the OS/2 CDROM is in the code server's CDROM drive (it will be, unless you have removed it).
2. Make sure that the actual code server software is [running](#).
3. Insert the Remote Installation diskette into the target system.
4. Restart the target system.
5. OS/2 installation should now proceed normally. If the install hangs or gives an error message when diskette 2 has been working for a while, see [Note 5](#) or [Note 6](#).
6. This is the full integrated install, which includes networking. At the very least, you will probably want to install the NETBIOS protocol, to ensure continued access to the code server after installation (you might want to use Selective Install at some point in the future).
7. When the networking configuration portion of the install starts, you will need to specify a NIC. If you used a driver not directly supported by OS/2, choose the option for 'other' and insert the

- driver disk (which you made earlier) as prompted.
8. In all cases, make sure that the NIC driver has been configured correctly (select the NIC in the NIC/protocol listbox, and press the **Settings** button).
 9. At the end of installation, a dialog box will appear, entitled "Install Additional Options". You must press the Exit button here, as the installation CDROM is not currently accessible. Use the standard Peer networking facilities, or LAN requester, to attach the CDROM again and then install manually.
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Other considerations

This section mentions other considerations which may be of interest.

- If additional drivers are needed during the install, then the standard procedure for such drivers is still used. That is:
 - Copy the drivers to Remote Diskette 1.
 - Add the relevant lines to `CONFIG.SYS` on Remote Diskette 1.
 - Add the following line to the end of `CONFIG.SYS` on Remote Diskette 1:

```
SET COPYFROMFLOPPY=1
```

Troubleshooting

This section is intended to deal with problems related directly to the remote nature of the installation.

- Nearly all problems are caused by a faulty or misconfigured NIC! Check that you are using the right driver, and that it was correctly configured [during installation](#).
 - An error message saying that the installation cannot be started is usually caused by a missing [CDBOOT.EXE](#) file.
 - A hang when diskette 2 has been working for a while usually indicates a network problem.
 - An error message saying that the SRVIFS service cannot be started is usually due to a problem related to mixed NETBIOS and NETBIOS over TCP/IP protocols; see [Note 3](#) below.
 - If the server program (SERVICE) seems to be failing silently, there is probably a configuration error. See [Note 7](#) for more details.
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Notes

1. You can easily check to see if the 'pure' NETBIOS protocol is installed. Inspect `CONFIG.SYS` to see if a driver called `NETBEUI.OS2` is being loaded via a `DEVICE=` statement; if it is, the chances are that you have the NETBIOS protocol installed.
2. To see if NETBIOS over TCP/IP is installed, look in `CONFIG.SYS` to see if a driver called `TCPBEUI.OS2` is being loaded via a `DEVICE=` statement; if it is, the chances are that NETBIOS over TCP/IP is installed.
3. If you do have both NETBIOS, and NETBIOS over TCP/IP, installed, then it is wise to make a further check. You should make sure that the NETBIOS protocol is the **first** protocol installed on the NIC, by carrying out the following steps:
 1. Open the MPTS configuration object (found in the System Setup folder)
 2. Press the Configuration button.
 3. Press the Configuration button (again).
 4. Check that NETBIOS is the first protocol listed for the NIC; if it isn't, remove and reinstall protocols until it is.
 5. Press the OK button.
 6. Press the Close button.
 7. Press the Exit button.If you don't do this, you may receive a message about the SRVIFS service failing to start, when you try to start the code server.
4. You can check the supported NICs by looking at the directory:

n:\CID\NIFS\MACS

which contains the NIFs and MAC drivers for supported NICs. The file `READMAC.TXT` is particularly useful.

5. An error message saying that the installation cannot be started is usually caused by a missing [CDBOOT.EXE](#) file.
6. A hang when diskette 2 has been working for a while usually indicates a network problem.
7. A silent failure of the `SERVICE` command (where it exits without displaying a banner or any other message) is likely to be caused by a configuration error. Error messages from `SERVICE` are not written to the screen, but to the file `g:\IBMCOM\LANTRAN.LOG`, so look there for clues.

A REXX script to automate the process

This REXX script can be used to save typing, eliminate typing errors, and generally ease the whole job of setting up the code server and making the installation diskettes.

Just download the script, unzip it, and run it. It takes no parameters.

[Download REMINST.ZIP](#)

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