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Acorn

# Risc PC
# Advanced configuration for use in a hard disc or network environment.

This document is intended to guide the reader through the setup and maintenance of the Risc PC boot sequence. It will deal with the !Boot application on a local hard disc as well as the integration of the Risc PC into a network environment which utilises an armboot sequence.

Applicable Hardware :
All Risc PCs
All Archimedes
All Acorn fileservers
MDFS
Nexus
AppFS
Killer
ClassNet
ClassROM
ClassShare

Related Application Notes:
222
244



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# Introduction.

This document is intended to guide the reader through the setup and maintenance of the Risc PC boot sequence. It should be read in conjunction with the section *Modifying the system start-up configuration* in the **Risc PC User Guide**.

The Risc PC hard disc contains the first widely available structured boot sequence released by Acorn. It attempts to meet the requirements of both new and technically experienced users. At its simplest level it allows users to customise their computer through the Desktop save option first introduced in RISC OS 3.1, whilst at the most complex level allows individuals to completely customise their computer, by providing a multi-faceted sequence.

This document will deal with the complexities of customising the whole boot sequence and consequently is for the technically oriented user.

# The physical structure.

The boot sequence no longer comprises a single file as in previous versions of RISC OS 3. It is an application which encompasses a number of elements which are stored in the root directory of the hard disc.

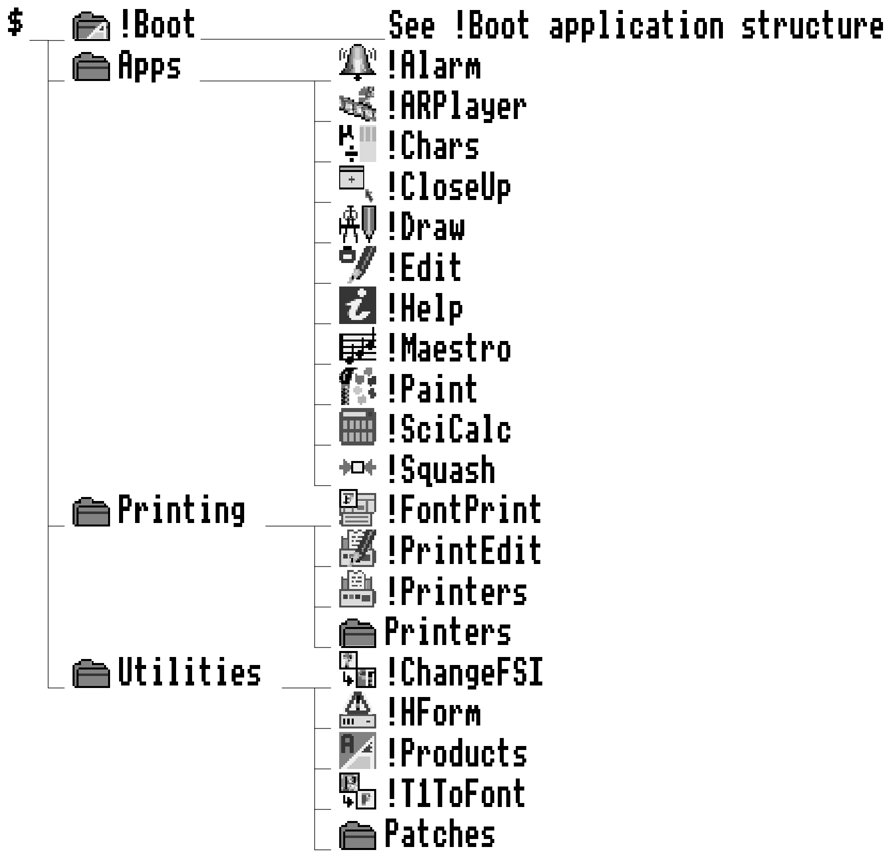


*Figure 1:* **Elements of the Boot application**

The boot application specifically searches for and Filer_Boots the contents of the sub directories: Apps, Printing and Utilities. Any change to the naming or position of these elements in the filing system will result in errors at boot time and may result in a computer which behaves in an unexpected manner.

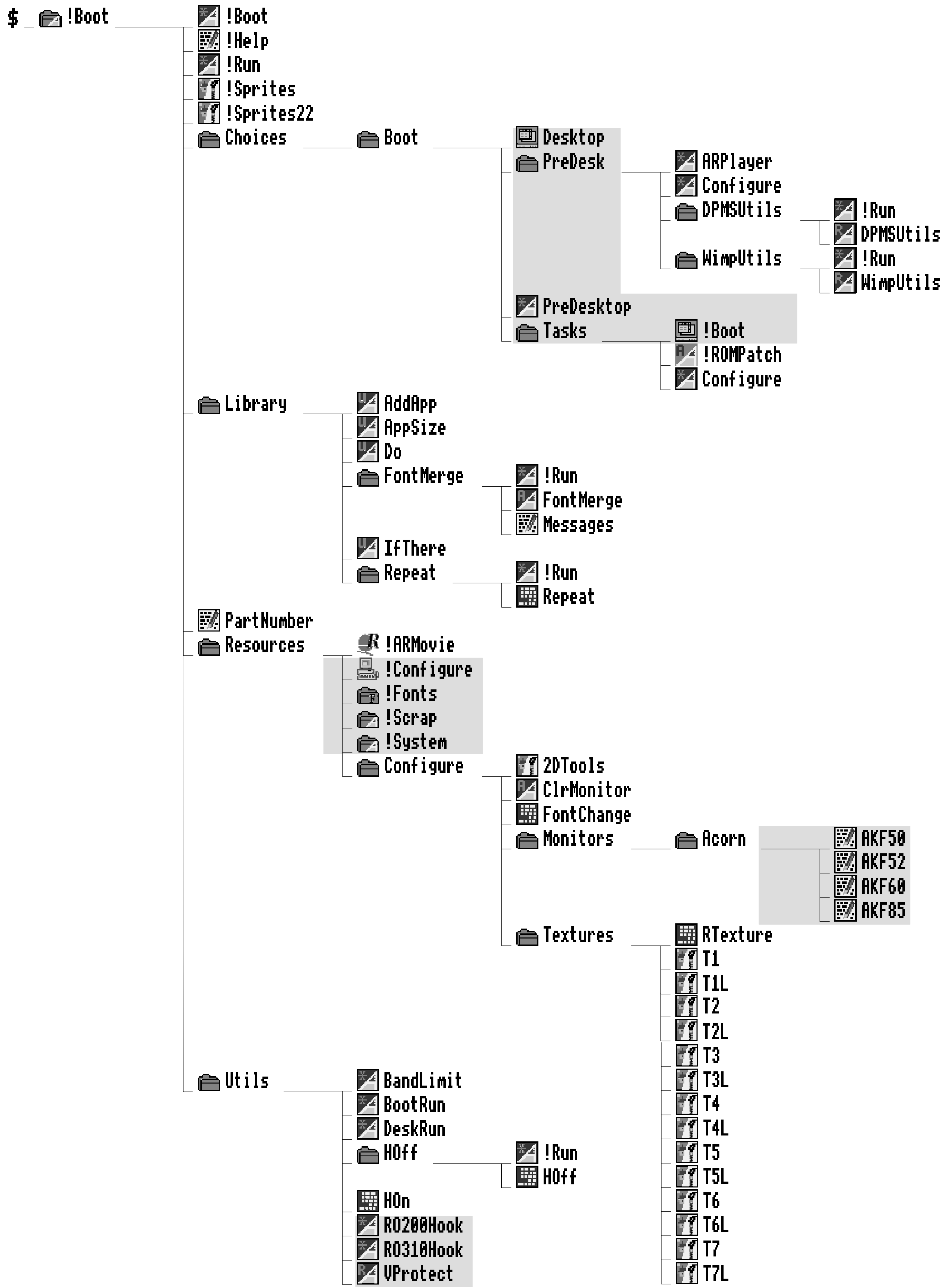


*Figure 2:* **Boot application structure.**

Figure 2 illustrates the structure of the Boot application. Those sections which are highlighted indicate areas or files which may require maintenance when adding new applications etc.

As these illustrations show, the local hard disc is now used to store applications which were previously ROM based. This has a number of advantages, not least of which is the ability to easily add new or updated applications to the Apps folder.

# Operational overview.

The most obvious change is that double clicking on !Boot no longer runs the !Boot application, but instead provides access to the computer's configuration settings via !Configure. If !Configure has been disabled (see the section entitled *Setting up for classroom use*) then a message will be presented as shown below, otherwise !Configure will be started.

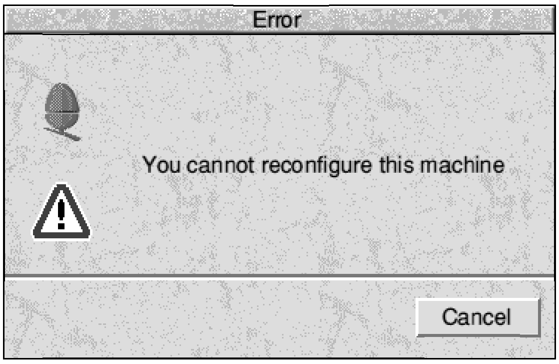


*Figure 3:* **Message which appears when !Configure has been disabled.**

The boot application provides a repository for !System and !Fonts. !Configure provides the functionality of the !Merge application and consequently updating these resources is now facilitated by !Configure.

Unless configured otherwise, the boot sequence will be run when the computer is switched on. The boot sequence contains a number of utilities which enable applications to be added to the Apps folder and to recursively run or load files or applications which are stored in specific areas of the !Boot application. The mechanisms used by these processes have little relevance when setting up a computer's boot sequence and consequently will not be dealt with here.

The Desktop boot file is still implemented via the Task manager, except that it is now saved inside the !Boot application in !Boot.Choices.Boot.Tasks. The path to this area and the correct filename are provided in the save dialogue box by default.

# Customising the boot sequence.

At its simplest level the boot sequence can be customised using the familiar Desktop boot file which is provided by the Task manager. This is likely to meet the requirements of most users and its use is covered in detail in the **Risc PC User Guide** in the section *Modifying the system start-up configuration*.

In some circumstances it may be essential for specific applications or scripts to be run before the desktop environment has been initialised, or for applications which have dependencies on other applications to be run in a specific order. Both of these situations can be accommodated by the Risc PC Boot application as it provides a structured mechanism for booting applications or files which are stored in the Choices area of the Boot application. The order in which the elements of the Choices.Boot directory are executed is as follows:

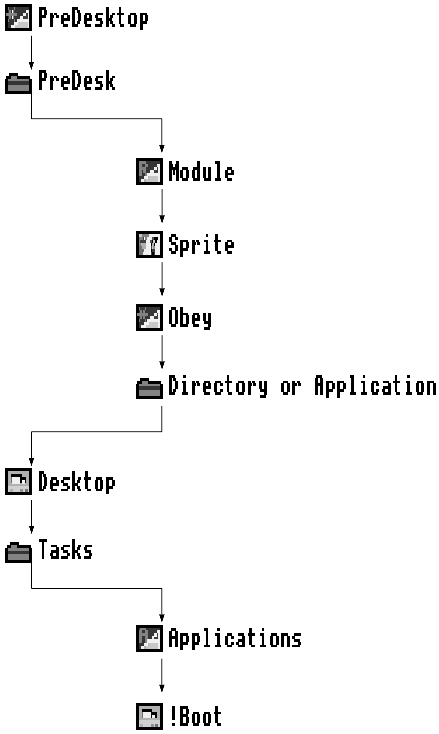


*Figure 4:* **Run order of main Boot sequence elements.**

Taking each of these elements in turn, this is how to determine what should be placed where:

**PreDesktop:** This file gets **`*OBEY`**ed before the desktop starts and is intended to setup specific system variables or add applications to the Apps folder. It is well commented and provides sections for:

| | |
|---|---|
| Aliases | eg. **`Set Alias$@RunType_FDC Obey %*0`** |
| Paths | eg. **`Set File$Path ,%.,Boot:Library.`** |
| Options | eg. **`set Copy$options A ~C ~D F ~L N ~P ~Q ~R ~S ~T V`** |
| ResApps | eg. **`AddApp Boot:^.Apps.DTP.!Impress`** |
| Misc | eg. **`Set Mail$Name fnstein (Frank N Stein)`** |

When modifying the file by adding a section of lines it is recommended that the lines be bracketed by lines which start with **`|Start`** and **`|End`**. In this way it is easy to identify a section of lines which shouldn't be broken up. For application writers who want to install a section of lines we advise that your company, application, version and section be identified. This enables a future install or update program to identify easily the section of lines which need to be changed.

**PreDesk:** This is where all pre-desktop resources should be placed. It will correctly identify and install or execute the following file types:

Module
Sprite
Obey
Application/Directory

Elements of the same type will be run in alphabetical order. So if 3 relocatable modules: ABCLib, SCSIfiler and ABIMod, are included in this folder they will be executed in the following order:

ABCLib
ABIMod
SCSIfiler

If the order of loading is critical then there are two possible solutions. These are detailed in the section: *Inserting order critical and 3rd Party sequences into !Boot.*

**Desktop:** This file is responsible for ensuring that the contents of the directory Tasks are correctly executed. In addition it also:

Ensures that applications in $.Apps.!* are added to the Apps folder.
Filer_Boots the contents of $.Printers and $.Utilities.

It links into other files in the Boot application which recursively examine and execute the contents of the Tasks directory. It applies the following actions to these files:

Filer_Boot all applications.
Filer_Run all entries.

**Note:** Filer_Run performs the equivalent of double-clicking on an object. Consequently Text files will be loaded into Edit, directories opened, modules RMRun etc.

Placing applications that operate like !NewLook or !SetIcons in the Tasks directory will result in them being not only Filer_Booted but also Filer_Run. This is obviously not desirable as the application window will be presented each time the computer is booted. To overcome this it is recommended that this type of application is placed in !Boot.Resources alongside !System, !Scrap etc as these resources are only ever Filer_Booted.

**Note:** !NewLook and !SetIcons have been integrated into the Risc PC operating system. As a consequence RISC OS 3.1 versions of these applications must not be used with the Risc PC.

**!Boot:** This is the file which is generated by the Task manager. It will perform additional Filer_Boot, Filer_Run and various other commands as detailed in the Risc PC User Guide.

# Inserting order critical and 3rd Party sequences into !Boot.

In some circumstances it may be necessary to insert a block of commands into the boot sequence in order to ensure the load order of files or to enable 3rd Party applications or devices. There are two mechanisms provided by the boot application for doing this:

1. Create an OBEY file and place it in PreDesk or Tasks.

2. Insert the lines in the PreDesktop file.

The former is the one most likely to be used as it offers the easiest mechanism for ensuring that things are executed correctly. The latter is the preferred solution as this provides 3rd Parties with a mechanism which can be utilised by customised installation software. This can have a number of advantages with a well written installation procedure as it:

allows installation software to search for and identify other manufacturers' sequences.

allows the installation program to search for older sequences and replace them with newer ones.

enables the installation program to flag possible problems with other software which is loaded by the file before it installs its own sequence.

**Creating an OBEY file for use in PreDesk or Tasks.**

Proceed as follows:

- Load Edit onto the icon bar. Menu on Edit and click on Obey from its Create menu.

- Enter the appropriate commands and save the file, with an appropriate name, in PreDesk or Tasks.

In the example PreDesk directory shown below the Obey file **Network**, contains the following lines which ensure that !Internet and !BootNet are run in the correct order.

**Note:** The !Internet application must not be placed inside the boot application as this will generate an error which will halt the boot sequence.

```
Run ADFS::HardD4.$.Apps.TCP/IP.!Internet
Run <Boot$ToBeLoaded>.!BootNet
```

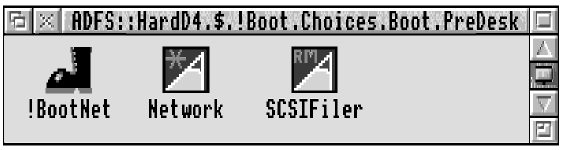


*Figure 5:* **An example of the PreDesk directory contents.**

**Modifying the PreDesktop file.**

When doing so the following protocol should be adhered to:

When modifying a file by adding a section of lines it is recommended that the lines are bracketed by lines which start with **|Start** and **|End**.

For example:

```
|Start CompCo Zippy 1.234 Filer
| -------------------
|
|    Load Filer
|
```

```
| ------------------
|
Set Foo$Type0 1
Set Foo$Type1 1
RMEnsure FooNormDriver 0 Set Foo$Type0 0
RMEnsure FooQuickDriver 0 Set Foo$Type1 0
If Foo$Type0 =0 AND Foo$Type1 =0 Then Set Foo$Type0 1
If Foo$Type0 =1 Then RMLoad Foo:FooNormDriver
If Foo$Type1 =1 Then RMLoad Foo:FooQuickDriver
Unset Foo$Type0
Unset Foo$Type1
|End
```

The convention is for each element of the description to be abbreviated if necessary to a single word with a space separator as shown ofter the `|Start ....` In this way it is easy to identify sections of line which shouldn't be broken up. For application writers who wish to install a section of lines we advise that your company, application, version and section be identified and an appropriate installation program is written and used. This will enable a future install or update program to easily identify a section of lines which need to be changed.

# Updating the computers' resources

There are a number of resources which will require to be updated at various times during the life of the computer. Some will only need to be changed if different hardware is fitted to the computer. Others such as !System may require updating each time a new software package is added to the hard disc. As already mentioned mechanisms exist within !Configure for updating !System and !Fonts. Other aspects of the computers resources which may require updating include:

- Apps
- Monitor definition files.

**Apps.**

The applications which are accessed via the Apps folder on the icon bar are in fact stored on the hard disc in $.Apps. Any entries which are placed in $.Apps and begin with ! will automatically be made available from the Apps folder on the icon bar. All other entries will be ignored.

It is now possible for Acorn to provide an enhanced version of an application without replacing the whole RISC OS ROM set.

In addition users now have the flexibility to replace traditional ROM based applications with their preferred alternatives. Updating this area simply requires the deletion or copying of the appropriate application(s) in $.Apps.

**Monitor definition files.**

Due to the increased flexibility of the screen display provided by the Risc PC it has become necessary to inform RISC OS of the displays supported by specific monitors. This is done via a monitor definition file. Figure 2 shows the location of and monitor types supported by the Risc PC as supplied. If you wish to connect a different monitor to one which is specified then the appropriate definition file will need to be added to $.!Boot.Resources.Configure.Monitors by simply dragging the new definition file into the directory. Alternatively this may be a directory containing a range of definition files for a single manufacturer.

For more information on setting the screen display and monitor definition files please refer to the section *Setting the desktop configuration* which is in the **Risc PC User Guide** and the appropriate sections of the **RISC OS 3 Programmer's Reference Manual Volume 5**.

# Use with earlier versions of RISC OS

The impact on earlier versions of RISC OS only becomes an issue when the computers are connected to a network or other shared filing system. As a consequence the mechanisms described here will be specifically for use with networks.

**Overview**

If an attempt is made to run the Boot application on a computer fitted with an earlier version of RISC OS a message will appear as shown below:


*Figure 6:* **Boot application error message when run on earlier versions of RISC OS.**

This error message is contained in the appropriate "hook" for the version of RISC OS. These hook files: RO200Hook and RO310Hook, are shown in figure 2 in $.!Boot.Utils. The mechanisms used by the boot application ensure that all versions of RISC OS are tested for and dealt with appropriately.

It is the very existence of these "hooks" which makes the Risc PC boot application suitable for use on a network with a mixture of RISC OS computers. There are, however, legal implications in attempting to use the Risc PC boot application in this way.

**Software licences.**

The Risc PC is supplied with VProtect, part of the virus protection software; Killer, as an integral part of the boot sequence. The module VProtect is supplied with a software licence for use with only one computer, that which it was sold with. An attempt to utilise the Risc PC boot application with Archimedes computers will breach this licence. In order to remain within the terms and conditions of the licence it will be necessary to obtain a site-licence for Pineapple Software's Killer (which includes VProtect).

For further information on Killer please contact Pineapple Software at the address in Appendix D

For more information on installing VProtect please refer to Appendix B.

**Using the Risc PC version of VProtect with earlier versions of RISC OS.**

Only the Risc PC version of VProtect will not run under RISC OS 2.00. Any version supplied by Pineapple Software will run on all Risc PCs and Archimedes. Any attempt to run the Risc PC version of VProtect on a RISC OS 2.00 computer will result in the following error:


*Figure 7:* **Error message from RISC OS 2 computers.**

Please refer to Appendix B for information on overcoming this problem.

# Network implications

There are a number of issues related to using the Risc PC as either a network fileserver or a network client. The complexity of the issues is dependant upon the working practices within the establishment. The most popular circumstances and the recommended solutions are covered in detail in this section.

**The Risc PC as a Fileserver.**

The **Level 4 Fileserver Manager's Guide** in the chapter *Designing the Fileserver directory structure* details the two recommended models for all Level 4 Fileservers. Risc PC users are advised to follow the second of these which utilises an export mount point for the server. For reference purposes the appropriate diagram from the **Level 4 Fileserver Manager's Guide** is reproduced in figure 8.

Whilst other structures are possible these have not been tested, nor can they be recommended for use with the Risc PC. For further information on the use of this directory structure please refer to the **Level 4 Fileserver Manager's Guide**.

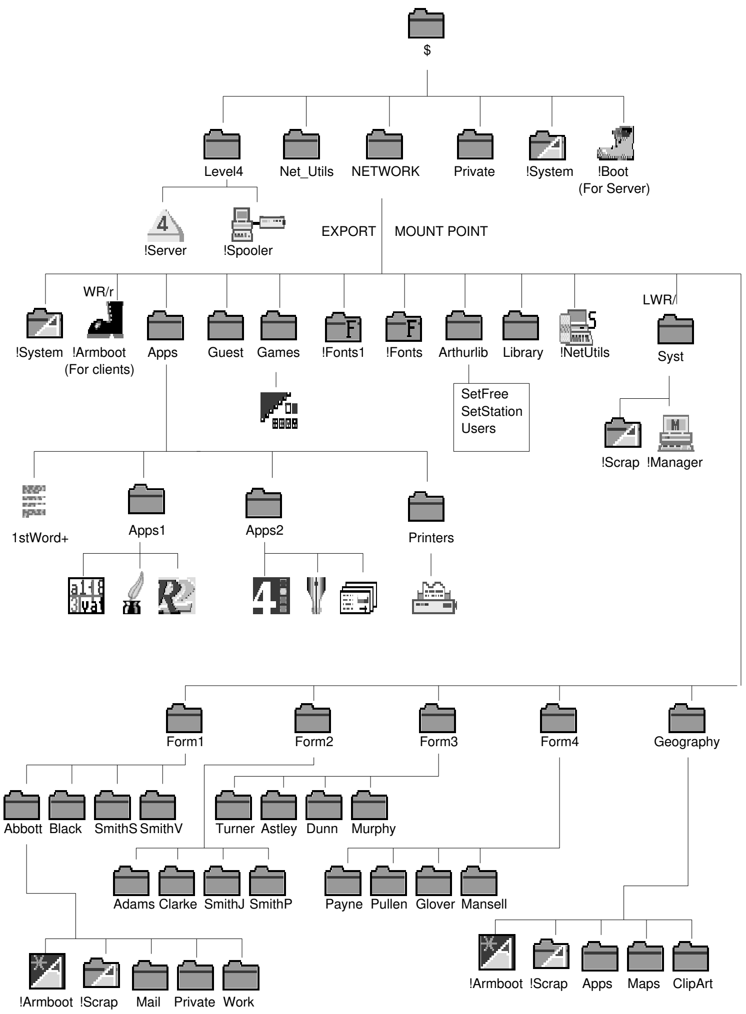


*Figure 8:* **Recommended Level 4 Fileserver directory structure.**

**The Risc PC and Archimedes computers as network client stations.**

For the first time a maintainable mechanism exists which allows a mixture of RISC based Acorn Computers to share the same fileserver. This is of particular importance where a fileserver may be connected to two different network types each with different versions of RISC OS present. Figure 9 illustrates a typical situation:

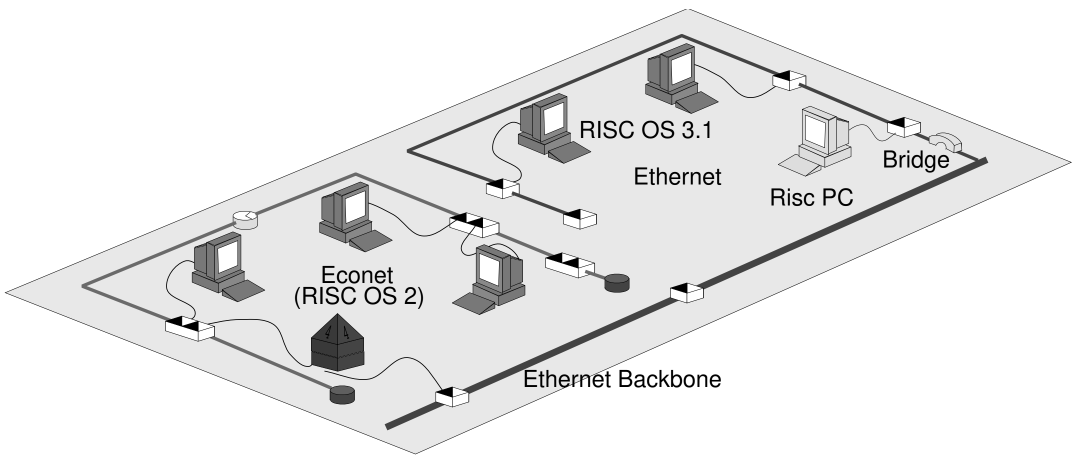


**Figure 9: Typical mixed economy network.**

**Common issues for all versions of RISC OS**

It is very important to keep certain operating system resources separate. The boot sequence supplied on the floppy disc which accompanies this document, has been derived from the one supplied with the Risc PC, and it is structured in such a way that it:

- is easy to maintain.
- offers resource segregation for each OS version.
- supports all RISC based Acorn computers.
- allows the easy integration of existing boot sequences.

The last point is an important one. Typically existing boot sequences can be categorised into two types either:

a Boot application, similar to a normal application.

or

a series of discrete files.

The structure of the recommended !ArmBoot application, which is supplied on the floppy disc which accompanies this application note, is shown below:

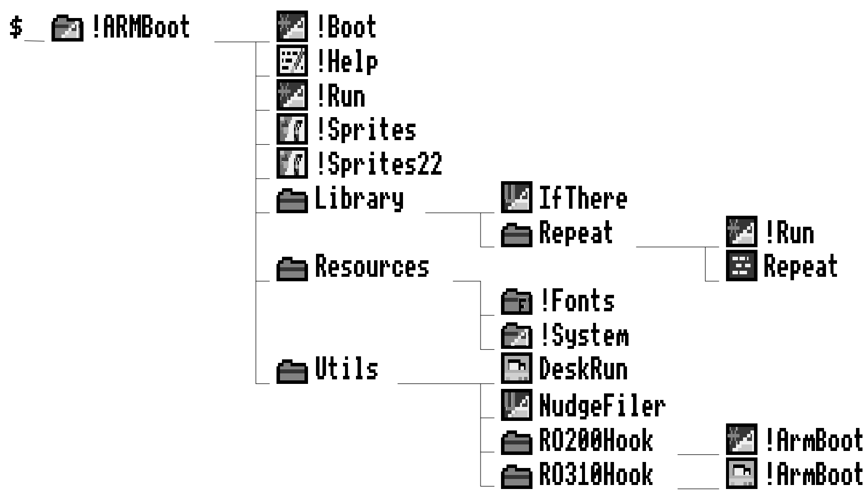


*Figure 10:* **Risc PC based !ARMboot sequence for network use.**

**Getting started.**

- From any client computer logon to the fileserver as a system privileged user. Unless otherwise stated it will be assumed that all subsequent operations will be done from this computer.
- If the fileserver already has an armboot sequence on it create a temporary directory; Old is a good choice, and copy the existing boot sequence into it.
- Copy the entire contents of the floppy disc into the network root directory. Dismount and remove the floppy disc once this has finished.

• Hold down shift and double click on the !ArmBoot application. A directory viewer will open which contains a number of objects, one of which is called Utils. Double click on Utils so that the following directory is displayed.


*Figure 11:* **Contents of !ArmBoot Utils directory.**

• There are 3 hooks or areas for each operating system type. These are:

| | | |
|---|---|---|
| DeskRun | : | Risc PC |
| RO310Hook | : | RISC OS 3.10 to 3.20 |
| RO200Hook | : | RISC OS 2.00 to 3.09 |

The following sections will deal with how to "attach" each operating system's requirements to each of these hooks.

**The Risc PC and !ArmBoot.**

The versatility of the Risc PC Boot application provides the user with a great deal of control over the start up state of the computer. In a single computer environment this is to be welcomed, however, in a network environment the opportunity for enforcing inappropriate configuration settings is high. **We recommend that all Risc PC's boot from their local hard discs as this prevents problems with monitor configuration and other computer specific settings.** Network managers are strongly urged to adhere to the recommendations made in this section. However, if after making changes to the boot sequence or configuration the client stations no longer boot up correctly from their local hard discs we recommend the following course of action:

• Switch the Risc PC client stations off. Switch on each computer in turn whilst holding down the key marked *Delete*. This will normally return the computer to a useable state.

• In the unlikely event that the disc based !Boot sequence is unuseable it is possible to reset this to a useable state by using the !ResetBoot application. Please refer to the **Risc PC User Guide** for more information on this application.

It is of course possible, desirable even, for all Risc PCs to have a copy of the whole site's resources on their local hard disc. However, education establishments tend to operate a centralised and distributed solution via a network. It is this strategy which is assumed in this section.

• Begin by setting up any local resources on each Risc PC. This may involve monitor configuration files etc. Ensure that you also logon to the network as the user Boot before saving the Desktop boot sequence to the Risc PC's local disc. This procedure will need to be done on each Risc PC on the site if it is to be connected to the network. If you are unsure of how to save a desktop boot file then please refer to the appropriate section in the **Risc PC User Guide**.

• Now remove any applications which you may have loaded onto the icon bar and close any windows which may be open in the desktop. This should return the computer to a "clean" state.

• Next set up the network based aspects of the client computer. For example this may involve loading the Application Accelerator and opening a directory viewer of common networked applications. Once this is done save a second Desktop boot file onto the network in !ArmBoot.Utils. The default filename; !Boot, will suffice for now.

• Now load Edit and drag !ArmBoot.Utils.DeskRun file into it. A window will appear like the one in Figure 12.

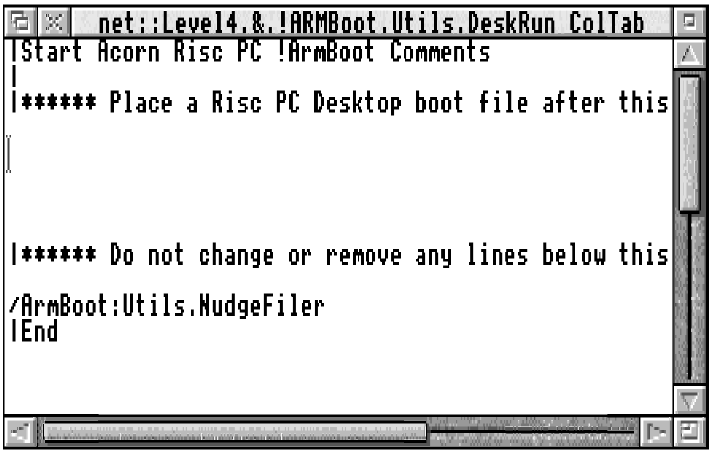


*Figure 12:* **!ArmBoot.Utils.DeskRun loaded into Edit.**

• Position the caret as shown in Figure 12 and drag the saved Desktop boot file from !ArmBoot.Utils into the Edit window. This will have the effect of inserting the Desktop file into the Deskrun file at the position of the caret.

• Next check the file for any duplicate, ADFS or recursive entries such as:

```
Filer_Boot Boot:^.Utilities.!ChangeFSI
Filer_Boot ADFS::HardDisc4.$.Apps.Level4.!Server
Logon :FileServer Boot
```

Remove any such entries and save the file as !ArmBoot.Utils.DeskRun.

• Lastly delete the previously saved Desktop file; probably called !Boot, from the !ArmBoot.Utils directory and set the access rights for the whole !ArmBoot application to WR/r (Owner write and read / Public read)

**RISC OS 2 clients and !ArmBoot**

If a boot sequence for computers fitted with RISC OS 2.00 already exists, integration simply requires the files to be copied into the corresponding RO200Hook directory. The directory must hold the contents of the old boot sequence as well as working copies of the RISC OS 2 resources. When complete it may look like the one illustrated in figure 13.

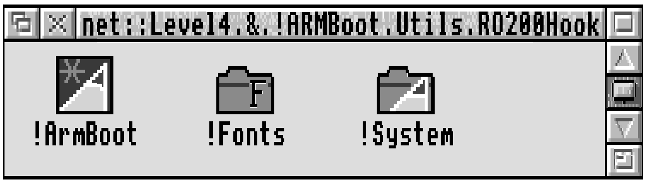


*Figure 13:*Incorporating an existing RISC OS !ArmBoot application
into the Risc PC !ArmBoot application.

If the !ArmBoot already existed it will be necessary to alter the pathnames to any system resources which have also been moved. If you are using a third party boot sequence please refer to the documentation supplied with the application for information on how to do this.

It is not recommended, although it is possible, that all versions of RISC OS share the same !System resource. Some modules are specifically designed for RISC OS 3.10 or later and the inclusion of these modules in a common !System will only serve to fill the !System.Modules directory earlier than necessary.

It is, however, possible for all versions of RISC OS to share the same !Fonts resource providing that it is updated as specified in the **Support Group Application Note 222:** *Fonts- a shared resource for RISC OS 2 and RISC OS 3*. This application note is available from Acorn's Support Group at the address in Appendix D. If you do decide to do this then the !Fonts which is stored in !ArmBoot.Resources should be updated and used in preference to any other.

**RISC OS 3.1 clients and !ArmBoot**

The procedure for updating the !ArmBoot sequence to support RISC OS 3.1 clients is identical to that for RISC OS 2. There are differences in the way that the system resources are utilised. With RISC OS 3.1 clients !Fonts and !System can be shared with a Risc PC. The RISC OS 3.1 and Risc PC version of !Fonts can be combined using !Merge. Alternatively, the !Fonts application may be modified, as described in the previous section, to support RISC OS 2 clients as well.

It is not recommended, although it is possible, that all versions of RISC OS share the same !System resource. Some modules are specifically designed for RISC OS 3.10 or later. The inclusion of these modules in a common !System will only serve to fill the !System.Modules directory earlier than necessary. The !System supplied in !ArmBoot.Resources can support all versions of RISC OS from version 2.00. The appropriate !ArmBoot file for RISC OS 3.10 will also need to be updated by replacing any reference to:

```
Filer_Boot Net:$.!System
```
or
```
Filer_Run Net:$.!System
```
or
```
Run Net:$.!System
```
with
```
Run ArmBoot:Resources.!System
```

**Note:** There is no need to do this for the Risc PC as the !ArmBoot.DeskRun file accommodates this already.

It is also important that !SetIcons and !NewLook are stored in !ArmBoot.Utils.RO310Hook. If they are placed where they would normally be visible to a Risc PC they will clash with the version already present in its operating system. The following illustration shows what a typical RO310Hook directory should look like:

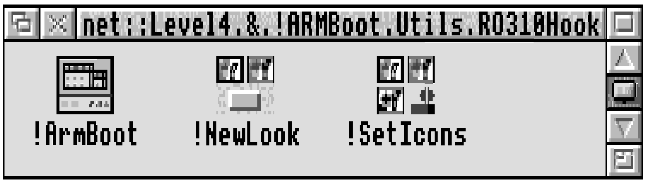


*Figure 14:* **A typical !ArmBoot.Utils.RO310Hook directory.**

# Things to avoid when using the Risc PC !Boot and/or !ArmBoot application.

The operation of the Risc PC boot application is such that certain accepted practices with earlier versions of RISC OS will now cause problems with the Risc PC. This section details the practices which we are currently aware of which will generate unexpected results.

**Renaming files or applications**

Don't rename files or applications which are a part of the Risc PC !Boot in an attempt to "remove" them from the boot sequence. Depending upon their position and place within the boot application it is very likely that they will still be run.

A typical example is where an application has been updated and yet you still wish to retain the old version for reference purposes. It has commonly been accepted that simply removing the ! from the leafname will prevent the application being recognised as such. However, the recursive operation of the Risc PC boot sequence will ensure that the directory is examined and this action may result in the unintended execution of its contents. eg. Obey files will be Obeyed, !Boot and !Run will be run etc. In some cases it may result in a directory window unexpectedly appearing on the screen.

**Unplugging modules**

With RISC OS 3.1 it is a common practice to **`*RMkill`** or even **`*Unplug`** certain modules which are undesirable in a classroom environment. Typical examples are !Configure, !Alarm and the Broadcast Loader. These modules are no longer stored in ROM in RISC OS 3.50 and so a direct attempt to **`*RMkill`** or **`*Unplug`** them will generate an error and halt the boot sequence. **Support Group Application Note 244;** *Disabling relocatable modules and other resources in RISC OS*, documents the correct methods of achieving this. This application note is available from Acorn's Support Group at the address in Appendix D.

**NFS based applications**

It has been observed that if applications are stored on an NFS fileserver and a desktop boot file is saved then errors will occur during the boot sequence. This is because the boot sequence attempts to Filer_Boot applications before logon to the NFS fileserver has taken place.

There are two possible solutions to this:

Don't run or Filer_Boot applications which are stored on NFS fileservers from a local boot sequence.

or

Manually move the NFS logon and mount commands to the start of the sequence as shown below:

```
|Desktop boot file, saved at 11:28:01 08-Apr-1994

WimpSlot -next 640K
ChangeDynamicArea -FontSize 128K
ChangeDynamicArea -SpriteSize 32K
ChangeDynamicArea -RamFsSize 0K
ColourTransLoadings &2 &4 &1
net:logon :Level4 FNStein
NFS:Logon -host  home fnstein
NFS:Mount -host  home Home /fnstein
```

**!ResetBoot**

In the event that a Risc PC is unintentionally or incorrectly configured or files inadvertently deleted from the !Boot application it is possible that the computer will no longer be able to boot correctly from the hard disc. This application, which is stored in $.Diversions.tools, will reset the !Boot application back to the default shipped state. For further information of the use of this application please refer to the section *Power on and Reset options* in the **Risc PC User Guide**.

# Setting up for classroom use.

Feedback from users of RISC OS 3.1 illustrated the requirement for desirable features, which were normally available only from External Developers, to be built into RISC OS. The Risc PC has many of these features implemented and as a consequence many fears about hard discs in the classroom have been addressed.

When setting up a Risc PC for use in a classroom we recommend the following minimum actions:

- Delete !HForm from $.Utilities after making a backup copy onto a floppy disc.

- Set a password for the hard disc using Lock to prevent unauthorised deletion of data from the hard disc. See the section on *Lock* which is in the chapter *Setting the desktop configuration* in the **Risc PC User Guide**.

- Delete !Configure from $.Apps after making a backup copy onto a floppy disc.

- Set the protection link. See *Appendix A: Protecting your hard disc* in the **Risc PC Welcome Guide** for further information.

# Appendix A

**Boot sequence system variables.**

System variables set by the !Boot application and various library tools are detailed as follows:

| By the boot sequence: | By FontMerge: | By Repeat: |
| --- | --- | --- |
| Boot$OSVersion | FontMerge$Dir | Repeat$Dir |
| Boot$Path | FontMerge$Path | Repeat$Path |
| Boot$Dir | | Repeat$ScrapFile |
| Choices$Path | | |
| Choices$Dir | | |
| Choices$Write | | |
| Boot$ToBeLoaded | | |
| Boot$ToBeTasks | | |
| Alias$Alias | | |
| Alias$UnAlias | | |
| Alias$Path | | |
| Alias$PathMacro | | |
| Run$Path | | |

System variables set by the !ArmBoot application and various library tools are detailed as follows:

| By the !Armboot sequence: | By Repeat: | By DeskRun: |
| --- | --- | --- |
| Boot$OSVersion | Repeat$Dir | System$path1 |
| Boot$Path1 | Repeat$Path | System$path |
| Boot$Path | Repeat$ScrapFile | |
| Boot$Dir | | |
| ARMBoot$Dir | | |
| ARMBoot$Path | | |
| Run$Path | | |

# Appendix B

**Use of VProtect with the !ArmBoot application.**

The Risc PC !Boot sequence is supplied with a version of VProtect which is unsuitable for use with RISC OS 2.00 computers. Its use on a network is also in breach of the licence agreement unless you have a current subscription to !Killer for the appropriate number of computers.

If you do have a current subscription then you may enable the use of VProtect from within the !ArmBoot application by the following means:

- Hold down the Shift key and double click Select on the !ArmBoot application.
- Continue to hold Shift and double click Select on !Run. This will load it into Edit.
- Remove the | from the start of the 1st line which reads:

```
|RMEnsure VProtect 1.58 RMLoad <Obey$Dir>.Utils.VProtect
```

- Save the file in the normal way.
- Place a copy of the VProtect module into !ArmBoot.Utils.
- Set the access for the whole !ArmBoot application to WR/R.

# Appendix C

This section contains information which is network specific. The information is grouped according to manufacturer and provides duplicate or additional information to that supplied in the Risc PC !Products application.

# Acorn

**SetStation utility**

When setting the network station identity it is possible to use the one supplied with your Level 4 fileserver. However, under some circumstances it is possible that the station number will be lost. A new version of SetStation ( Version 2.03) is required to prevent this. In the first instance please contact your local Dealer, IT Coordinator, or Acorn in Education Centre for the latest version. Alternatively you may request a copy by writing, on headed paper, to Acorn at the address in Appendix D.

**!Gateway**

The Risc PC can, with the appropriate hardware, support up to 8 expansion cards and a network card simultaneously. This has implications for the !Gateway application which are detailed below:

Ethernet - Ethernet gateway

> Ethernet cards up to and including release III can only work in slots 0-3 and will not work with the Risc PC Ethernet card in slot 8. Consequently you can use two Ethernet III cards to provide the Gateway function, but only if they are both installed in slots 0-3.

Ethernet - Econet gateway

> You can use the Risc PC Econet card in a gateway. If your Ethernet podule card is release III or earlier, it must be inserted in one of the slots 0-3.

In addition release III cards may cause interactions with other expansion cards. Contact your Dealer for details of the availability of upgrades for your Ethernet III card.

**Acorn Access**

If you wish to share a Risc PC disc with computers using RISC OS 3.1, it is best to share the disc at a point other than its root, so as to avoid the possibility of these computers attempting to access Risc PC specific programs and data.

To achieve this, you can add an appropriately named Obey file to the PreDesk directory as previously described in *Inserting order critical and 3rd Party sequences into !Boot*. For example:

*Share ADFS::4.$.Public Joe

which would share the directory Public as name Joe over Access.

# Angelsoft Educational

**AppFS**

In order to use AppFS with the Risc PC you must have version 3.00 or later, of AppFS. Contact Angelsoft Educational for upgrade information.

# Atomwide Ethernet cards

All versions of Atomwide 10 base 2 Ethernet Interfaces for the Risc PC network slot function correctly.

The Risc PC can, with the appropriate hardware, support up to 8 expansion cards and a network card simultaneously. This has implications for earlier versions of the Atomwide Ethernet card when used with the !Gateway application. These are detailed below:

Ethernet - Ethernet gateway

> A400/A5000 Ethernet cards can only work in slots 0-3 and will not work with the Risc PC Ethernet card in slot 8. Consequently you can use two Atomwide Ethernet cards, to provide the gateway function, but only if they are both installed in slots 0-3.

Ethernet - Econet gateway

> You can use the Risc PC Econet card in a gateway, but the A400/A5000 Ethernet card must be inserted in one of the slots 0-3.

In addition the A400/A5000 cards may cause interactions with other expansion cards. Contact Atomwide, at the address in Appendix D, for details on the availability of upgrades.

# Oak Solutions

**ClassROM**

ClassROM version 1.20 and earlier, does not work. On starting the system a Data Abort message is produced and ClassROM will not work sensibly.

**ClassPrintLD**

ClassPrintLD is superseded by facilities in the operating system.

**ClassNet**

ClassNet functions correctly if being run independently from ClassROM. See details above for problems with ClassROM.

Contact Oak Solutions, at the address in Appendix D, for details of availability and price of the appropriate upgrade.

# SJ Research

This section contains extracts from information supplied to Acorn by SJ Research. It is supplied for reference purposes. If you have any questions regarding the use of the Risc PC with SJ Research products, or require upgrade information for SJ products please contact SJ Research at the address in Appendix D.

### Using SJ Research networking products with a Risc PC

The Risc PC will work successfully with the full range of SJ Research Networking products. In some cases it may be necessary to obtain the most recent versions of the software before the Risc PC can be utilised fully: details are given below. The main area for possible confusion is in setting up boot sequences. The Risc PC is the first Acorn product to be supplied with a boot application on its hard disc. Whilst performing similar functions to the traditional SJ Research boot sequences, the Acorn boot sequence has some differences. Care is required when integrating Risc PCs into any network environment, particularly where earlier Acorn computers are booting using the SJ boot sequence. SJ has worked with Acorn to produce the solutions set out below as both companies believe these offer the best strategy.

### Using the Risc PC with Econet/MDFS

For better interworking with the Risc PC we recommend upgrading your MDFS to version 2.00. This also allows you to increase the disc space on your MDFS.

### Using the Risc PC with Nexus Disc Sharing, Networking and as a Nexus Junior client

Table 1 details the minimum version number of SJ modules and applications which SJ recommend are used with the Risc PC.

| | Disc Sharing | Networking[1] |
|---|---|---|
| Nexus expansion card ROM | 0.27 | 2.20 |
| Router ROM | 0.03 | 0.85 |
| Hub ROM | n/a | 0.94 |
| BEN ROM | n/a | 2.09 |
| Nexus !Boot | 1.00 (02 Jan 1992) | 2.17 (22 Mar 94) |
| Nexus server code | 0.61 | 2.15 |

*Table 1:* **Minimum recommended Nexus versions for use with the Risc PC**

(1) Includes Nexus Junior

### How to identify which version of Nexus software you are running

One way to find this out is from the version number of the Nexus expansion card ROM. The version number should be printed on the label of the ROM. Alternatively you can use the `*Podules` command on an existing computer on your Nexus cluster. Press F12 and at the prompt type `Podules` as shown below:

```
*Podules
Podule 0: Nexus Network Interface 2.07 (Standard card)
Podule 1: CDFS & SCSI Expansion Card
Podule 2: No installed podule
Podule 3: No installed podule
```

**How to identify which version of the Nexus !Boot software you are running**

To get the version number of your Nexus !Boot, select !Boot in a directory viewer of your Nexus drive 4, click MENU over the window and slide the mouse to the right off as shown in figure 15:

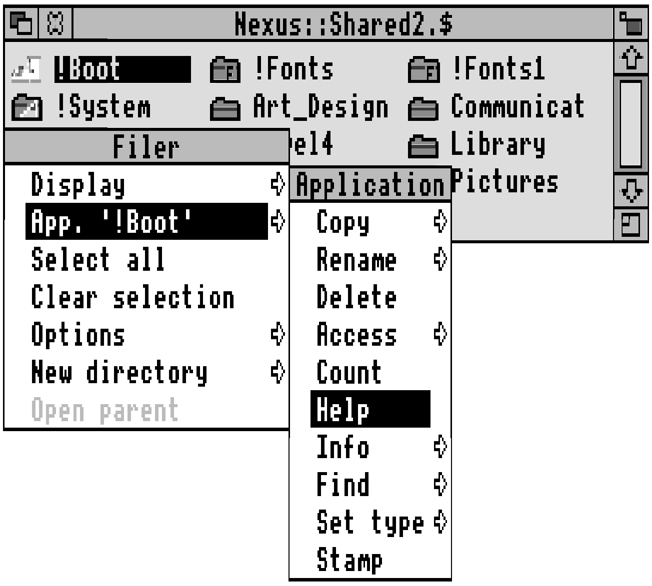


*Figure 15:* **Obtaining the Nexus !Boot application version number**

Click SELECT on the Help entry and a window will appear listing various module version numbers, including, in later versions, the !Boot version number in the first line.

```
!Boot 2.17 (22 Mar 94) © SJ Research Ltd 1991-1994
-------------------------------------------------
This application loads the following modules:
```

**How to identify the Nexus Disc Sharer version**

You should check your Nexus server code version by typing *NexusVers on another computer on your cluster. If this operation causes an error you need an upgrade.

**How to identify the BEN version number.**

Power the BEN off and then power it on again. It will display a start-up string which include the version number.

**Using the Risc PC with !Sharer (Nexus Networking !Sharer and Nexus Disc Sharing)**

The only Nexus Networking version of !Sharer is 2.10. This can be used with the Risc PC.

If you have !Sharer and Nexus Disc Sharing you should check that it is version 1.10 or later (if not you need an upgrade).

**Note:** Parallel and serial printer sharing works as expected with the Risc PC running either as a client or a server. However, LaserDirect printer sharing is not supported on the Risc PC as either a client or a server with either the disc sharing or the networking version.

**Using the Risc PC as a Nexus Junior server**

You cannot use a Risc PC as a Nexus Junior server with any of the current versions of Nexus Junior. If you would like to be able to do this, phone SJ Research Technical Support (0223 414532) for further details.

**Using the Risc PC as a !PrintJunr server**

!PrintJunr (the Nexus Junior printer sharer) works perfectly on a Risc PC, and all versions take advantage of RISC OS 3.5's improved memory management. !PrintJunr can be used on a Risc PC with Nexus Networking, AUN Ethernet, Econet and Nexus Junior itself.

**Note:** The site licensed version of !PrintJunr is required for use other than on a single Nexus Junior System.

# Appendix D

**Addresses**

Support Group
**Acorn Computers Ltd**
Acorn House
Vision Park
Histon
Cambridge
CB4 4AE

| | |
|---|---|
| Tel. | 0223 254222 |
| Fax | 0223 254264 |
| E-mail: | customer.services@acorn.co.uk |
| FTP: | ftp.acorn.co.uk (136.170.129.1) |

**Angelsoft Educational**
35 Heol Nant
Swiss Valley
Llanelli
SA14 8EN

| | |
|---|---|
| Tel. | 0554 776845 |

**Atomwide**
Unit 7
The Metro Centre
Bridge Road
Orpington
Kent
BR5 2BE

| | |
|---|---|
| Tel. | 0689 838852 |
| Fax | 0689 896088 |
| E-mail: | sales@atomwide.co.uk |

Oak Solutions Ltd
Dial House
12 Chapel St
Halton
Leeds
LS15 7RN

| | |
|---|---|
| Tel. | 0532 326992 |
| Fax | 0532 326993 |

**Pineapple Software**
39 Brownlea Gardens
Seven Kings
Ilford
Essex
IG3 9NL

| | |
|---|---|
| Tel. | 081 599 1476 |
| FAX | 081 598 2343 |
| E-mail: | sales@pinesoft.demon.co.uk |
| | support@pinesoft.demon.co.uk |

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347 Cherry Hinton Road
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CB1 4DH

| | |
|---|---|
| Tel. | 0223 416715 (Main number) |
| | 0223 414532 (Technical Support) |
| FAX | 0223 416440 |
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