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Author:CAS

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Disabling Relocatable Modules and other resources in RISC OS

This application note will detail a method which will ensure that RISC OS based Relocatable Modules and other resources such as !Configure, are disabled during a machines boot sequence.

Applicable Hardware : All Archimedes

Related Application Notes: None

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Support Group
Acorn Computers Limited
Acorn House
Vision Park
Histon, Cambridge
CB4 4AE

Introduction

Some of the applications and relocatable modules which are an integral part of RISC OS 3 can in some circumstances, prove a distraction in a classroom situation.

This application note will detail how to correctly disable such resources with specific reference to :

!Configure
!Alarm
Broadcast loader

Disabling Relocatable Modules.

A relocatable module can be disabled in one of two ways: temporarily or "permanently".

Modules which are temporarily disabled will remain so until the machine is switched off. When the machine is switched on again the modules are once again initialised for use.

Modules which are "permanently" disabled will remain so until the machine is reset via a Delete-Power On. They will remain disabled even if the machine is switched off and on again.

Note: Whilst this process is deemed to be permanent, a knowledgeable user can easily overcome this mechanism. It will, however, keep the less experienced "twiddler" at bay.

The routines for disabling relocatable modules are inserted at the start of the !Boot or !ArmBoot file which is to be run when the machine is first switched on.

The following sequence demonstrates how !Configure can be temporarily disabled.

```
*RMKill !Configure
```

!Configure can be "permanently" disabled through the use of the following command:

```
*Unplug !Configure
```

Problems occur if this latter command is placed in a boot sequence. The first time the sequence is run the command will be executed and the module unplugged. The second time the module will already be unplugged and hence not "present" in the machine. The command will then report:

Module !Configure not found

and the boot sequence will stop.

A more robust mechanism, as illustrated below, overcomes this problem:

```
SetEval Configure$Module 1
RMEnsure !Configure 0 SetEval Configure$Module 0
If Configure$Module=1 Then Unplug !Configure
Unset Configure$Module
```

It works by setting a flag, in this case Configure$Module, which is then altered according to a series of tests. The end result is then used to decide if the module is present and therefore needs to be unplugged or not.

Taking this sequence a line at a time:

SetEval Configure$Module 1	Set the flag to 1
RMEnsure !Configure 0 SetEval Configure$Module 0	Check if the Module is there. If it is NOT then set the flag to 0
If Configure$Module=1 Then Unplug !Configure	If its there then *Unplug it
Unset Configure$Module	Remove the flag from memory

The same procedure can be applied to other ROM based applications such as !Alarm:

```
SetEval Alarm$Module 1
RMEnsure !Alarm 0 SetEval Alarm$Module 0
If Alarm$Module=1 Then Unplug !Alarm
Unset Alarm$Module
```

With Ethernet based networks the Broadcast Loader can impair the performance of the network due to the mechanisms which it uses. It is therefore strongly recommended that the Broadcast Loader is disabled. The following sequence shows how to achieve this:

```
SetEval BLoader$Module 1
RMEnsure BroadcastLoader 0 SetEval BLoader$Module 0
If BLoader$Module Then RMEnsure EconetA 0 SetEval BLoader$Module <BLoader$Module>+1
| No broadcast loader -> 0
| BLoader and EconetA -> 1
| BLoader not EconetA -> 2
If BLoader$Module=2 Then Unplug BroadcastLoader
Unset BLoader$Module
```

Note: This sequence will not disable the Broadcast Loader if the Archimedes is running native Econet.

Re-Enabling disabled relocatable modules.

To re-enable these resources you should simply issue an *RMReinit <Module name> as shown below:

```
*RMReinit !Configure
*RMReinit !Alarm
*RMReinit BroadcastLoader
```

In the case of !Configure, !Alarm and other similar resources, once the module has been RMReinited you should Ctrl-Reset the machine.