

# Mac™ OS Licensing Technical Notes

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## Mac™ OS Licensing R&D



### #3: Mac™ OS Licensing Extension

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**Changes since February 1997:** Updated information for version 2.0 of the extension for use with Mac OS 8. Version 2.0 is required for use with all systems based on Mac OS 8.0

Mac OS Licensing R&D recognizes the need to deliver system software to licensees in a timely manner. In the past, the need to make custom changes to system software and installer scripts (the so-called “L” release) has caused difficulties and delays in the delivery of software, especially localized software.

The “Mac™ OS Licensing Extension” was created to alleviate this problem. This note describes version 2.0 of this extension.

#### Introduction

The need for this extension developed out of difficulties producing the “L” system software release for licensees. The “L” release was also confusing to licensee customers who may not understand how or why their software is different from system software on Apple machines. By moving necessary functionality into a separate extension, the base system software delivered to licensees becomes exactly the same as that shipped by Apple.

The extension also creates the opportunity to enhance the licensee customer user experience, for example, by allowing better brand identification. Previously, this was not possible because custom changes to Apple software and installer scripts for or by licensees were not allowed. The extension encapsulates all those changes in a single location and allows for modification by licensees so that the end result is the same.

The extension verifies that it is running on licensee hardware and only loads if that is true. It will not load on Apple branded machines, or machines based entirely on Apple manufactured motherboards. Nor is the extension designed to work on older licensed designs, such as NuBus based systems.

#### Features

The functionality for this extension lies in four distinct areas, which are explained more fully later in this document:

- 1) Hardware identification. Because Phase 1 licensing designs are based directly on Apple designs and because no ROM or System Software changes are allowed in support of these designs, a mechanism is required to allow vendor specific hardware identification.
- 2) Software identification. Customer support has a desire to identify which vendor the customer acquired the system software from as this determines who is responsible for customer support. Software identification is independent of hardware identification.
- 3) Licensing specific features. This covers features required in support of licensing that cannot be adequately addressed by Apple system software.
- 4) Customization. Allows licensees to tailor their systems in certain, limited ways, such as having the product name appear in “About This Computer” to reinforce product identity.

## Hardware vendor identification

The abstract mechanism by which software can determine which vendor created the hardware is the `gestaltHardwareVendorCode` Gestalt selector ('hrad'). This returns a unique 32-bit code assigned to each licensee, such as 'Appl' for an Apple design. However, for Common Hardware Reference Platform (CHRP) based hardware, 'hrad' will always return 'CHRP'.

The underlying mechanism by which Gestalt determines this information can vary. These mechanisms, including the one for CHRP, are described more fully in the Mac OS Licensing Tech Note, *Licensee CPU Identification*.. It is the licensee's responsibility to work with Licensing R&D to ensure their products are properly identified.

## Software vendor identification

The abstract mechanism by which software can determine which vendor sold the software is the `gestaltSoftwareVendorCode` Gestalt selector ('srad'). If Apple sold the software, this selector returns the 32-bit value `gestaltSoftwareVendorApple` ('Appl'). The generic response of non-Apple delivered software is `gestaltSoftwareVendorLicensee` ('Lcns'), although the mechanism is set up to allow vendors to return a vendor specific response. One limitation of the current installer script based method of setting the value is that only the generic response can be set. The licensing extension does not have this restriction.

For information on setting vendor specific software identification, refer to the section "Allowed Customization".

## Licensing specific features

As of version 1.2, the only previous licensing specific feature, suppression of the Energy Saver splash screen, has been dropped because this support is no longer required.

## Customization for Mac OS 8

The licensing extension supports a limited level of customization to allow licensees to tailor the system to their use. Currently supported in licensing extension 2.0 for Mac OS 8 is the addition of the 'PICT' (-20218) resource which is displayed in the Finder's "About This Computer" window. This can be used to reinforce customer product and brand identification and to aid identifying the computer for support purposes.

Currently, the Finder 8.0 displays a dialog similar to the following, regardless of the brand of computer it is actually running on.



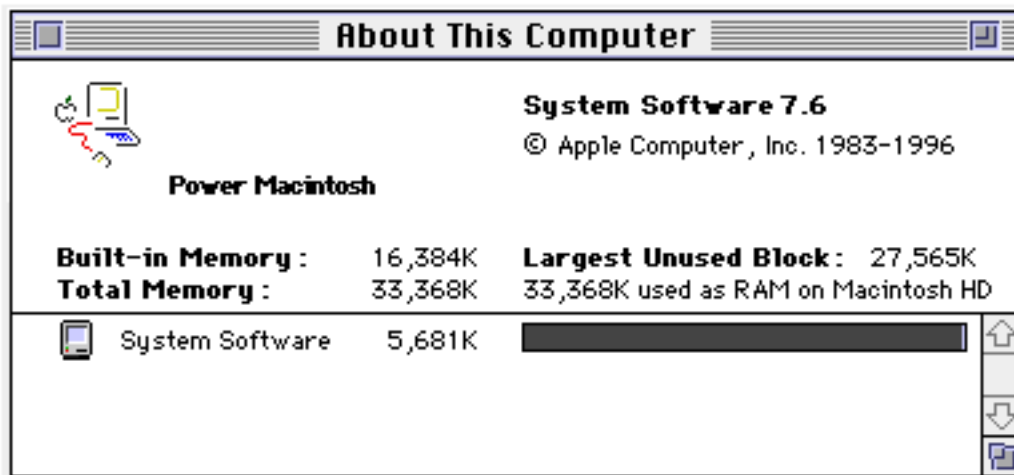
With the extension installed and customized for the licensee model of computer, the dialog might appear as in the following example:



## Customization for 7.x Systems

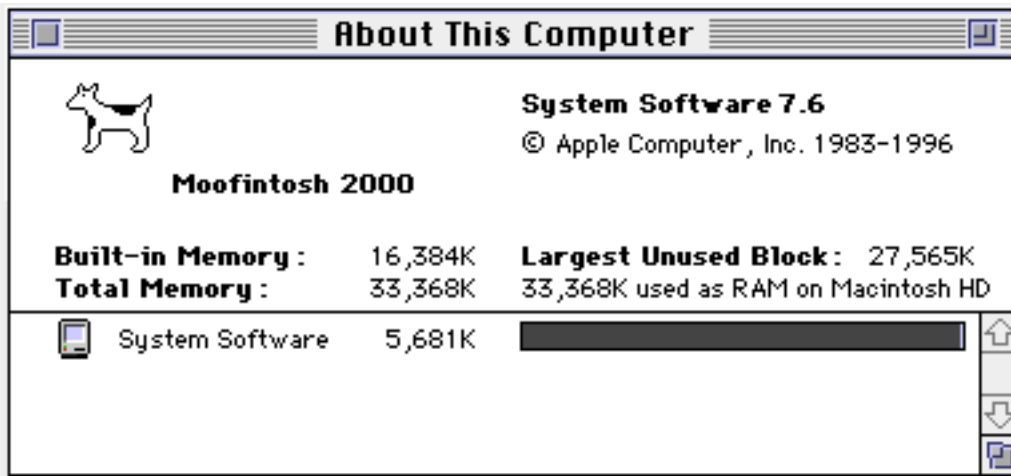
For systems earlier than Mac OS 8, the licensing extension supports modification of the computer name and substitution of the Picasso Mac icon in the Finder's "About This Computer" window.

For example, System 7.6 Finder displays a dialog similar to the following, regardless of the brand of computer it is actually running on.



**Note:** In earlier versions of the system, this window was titled "About This Macintosh". As of System 7.6, this Macintosh specific reference has been removed in favor of generic terminology.

With the extension installed and customized for the licensee model of computer, the dialog might appear as in the following example:



For information on customizing the extension, refer to the next section “Allowed Customization”.

## Allowed Customization

This section details changes to the extension that licensees are allowed to make. These are the only changes that are allowed. Changes are straightforward and can be accomplished with ResEdit, but it is the licensee’s responsibility to ensure they are performed correctly.

For information on additional customization for Mac OS 8, please refer to the next section “Additional Customization for Mac OS 8”.

The following list of resources shows resource types and resource IDs for those resources that licensees are allowed to modify. **Licensees are not allowed to modify any resources other than those listed.**

<u>Resource Type</u>	<u>Resource ID</u>	<u>Purpose</u>
dbag	0	Software vendor identification - Gestalt
ICN#	-16396	Finder customization - icon
icl4	-16396	Finder customization - icon
icl8	-16396	Finder customization - icon
STR#	-16395	Finder customization - string

**Note:** ICN#, icl4 and icl8 resources are not needed on Mac OS 8. They are replaced by ‘PICT’ (-20218) to serve the product identification purpose.

As discussed in the section “Software Vendor Identification”, software can determine whether Apple sold the system software using the `gestaltSoftwareVendorCode` Gestalt selector. Licensees can further identify their systems by ResEditing the ‘dbag’(0) resource and changing the value from 0xFFFFFFFF to the vendor identification value assigned by Mac OS Licensing R&D for use in CPU identification. For example, if the licensee vendor identification code were ‘moof’, the value of the resource would be set to that code (0x6D6F6F66).

Licensees are allowed to modify the following resources in the extension for purposes of customizing product and brand identification in the Finder:

ICN#(-16396)  
icl8(-16396)  
icl4(-16396)

These resources define an icon used by the Finder to display the "Picasso Mac" icon in the Finder's “About This

Computer” window. Licensees can substitute their own icon for brand identification purposes using ResEdit. In the example above, a dogcow icon was substituted to produce the picture shown.

**Note:** older versions of the licensing extension do not display this icon correctly using System 7.6. Version 1.2 of the extension is required for the icon to appear correctly.

STR#(-16395)

This resource contains strings used to provide product identification in the Finder's “About This Computer” window. Licensees can ResEdit this resource to supply their product names. In the example shown above, the string was changed from “Power Macintosh” to “Moofintosh 2000”.

Names in this resource are indexed based on the gestaltMachineType response. This can be determined using Gestalt or one of the Gestalt tools. The following are common values for Apple machines on which licensee designs are based:

Power Macintosh 7200 : 108 (decimal)  
Power Macintosh 9500 : 67 (decimal)  
Power Macintosh 6400 : - 74 (decimal)  
CHRP computers : 406 (decimal)

The above list is not inclusive. If in doubt concerning the gestaltMachineType for your design, contact Licensing Tech Support at [OEMSupport@apple.com](mailto: OEMSupport@apple.com).

## Additional Customization for Mac OS 8

‘PICT’ (-20218)

**Note:** Only version 2.0 or newer version of the licensing extension supports the use of this resource.

This resource will be supplied by the licensee, sized appropriately to replace the picture of the dialog currently containing the Apple logo, the Earth and “Mac OS computer” string in the current window. The content of the ‘PICT’ should contain product model and company name for identification purposes. The size of the PICT should be limited to the size of the area currently available in the upper left corner of the window (0, 0, 82, 248).

In the event the Finder is unable to locate the information for this dialog, then it would display the default generic dialog, which could be seen on Apple Macintosh computers running Mac OS 8.