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# Distribution Definition Reference

[Tools > Files & Software Installation](#)



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# Introduction

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Distribution packages, also known simply as **distributions**, contain one or more installation packages (or references to them) and a distribution definition file that define the install experience for a product. The information in distribution definition files is encoded using XML and JavaScript. When a user double-clicks a distribution, the Installer application uses the information in its distribution definition files to configure the Installer user interface.

This document describes the XML schema distribution definition files must adhere to so that they are processed correctly by the Installer application.

**System requirements:** The information in this document applies to Mac OS X v10.4 and later for development and installation.

Read this document if you develop install experiences for software products targeted to Mac OS X users.

## Organization of This Document

This document contains a single chapter that describes the XML elements used in distribution definition files. It also contains a revision history.

## See Also

- *Installer JavaScript Reference* describes the object model that the JavaScript code in a distribution definition file can use to manage user input and system properties.
- *Software Delivery Guide* describes the process of packaging and delivering a software product so that it can be installed on computers running Mac OS X.





# Distribution XML Reference

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## Overview of Distribution Definition Files

A **distribution definition file** defines the install experience of a distribution package (a **distribution package** is an installer package that contains a distribution definition file). Distribution definition files are contained in distribution packages under the name `distribution.dist` (a distribution package can contain only one distribution definition file).

Distribution definition files contain information encoded in XML (Extensible Markup Language) and JavaScript. You can define the values of many of the attributes of elements in distribution definition files as installtime-computed values through JavaScript expressions. In addition, you can include the JavaScript code to obtain those values in the same distribution definition file. For details about the JavaScript object model you can use in your JavaScript code, see *Installer JavaScript Reference*.

Listing 1-1 shows the structure of a distribution definition file.

### Listing 1-1 Topology of a distribution definition file

```
installer-script
  title [1]
  background, welcome, readme, license, conclusion [0..1]
  options [*]
  choice [1..*]
    pkg-ref [*]
  choices-outline [0..1]
    line [1..*]
    line [*]
  installation-check [0..1]
  volume-check [0..1]
  script [*]
  locator [*]
    plist [1]
  localization [*]
```

The following sections describe the elements of a distribution definition file.

# installer-script

## Attributes

Attribute name	Type	Description
minSpecVersion	float	Required. The lowest version of the Install framework for which this distribution file is designed. Use "1.0".
maxSpecVersion	float	Optional. The highest version of the Install framework for which this distribution file is designed.
verifiedSpecVersion	float	Optional. The highest version of the Install framework against which this distribution file has been qualified.

## Content

This element can contain the following elements:

- ["title"](#) (page 10) [1]
- ["background"](#) (page 11) [0..1]
- ["welcome"](#) (page 11) [0..1]
- ["readme"](#) (page 12) [0..1]
- ["license"](#) (page 12) [0..1]
- ["conclusion"](#) (page 13) [0..1]
- ["options"](#) (page 13) [0..1]
- ["choices-outline"](#) (page 14) [0..1]
- ["choice"](#) (page 15) [1..\*]
- ["pkg-ref"](#) (page 17) [0..\*]
- ["installation-check"](#) (page 17) [0..1]
- ["volume-check"](#) (page 18) [0..1]
- ["script"](#) (page 18) [0..\*]
- ["locator"](#) (page 18) [0..\*]
- ["localization"](#) (page 19) [0..1]

## title

## Attributes

None.

## Content

---

Text.

## background

### Attributes

---

Attribute name	Type	Description
file	String	Required. The filename of an image in the distribution package. For example, "background.png".
scaling	String	Optional. The scaling to use to render the background image. Values: "tofit" (default), "none", and "proportional".
alignment	String	Optional. The alignment to use to render the background image. Values: "center" (default), "left", "right", "top", "bottom", "topleft", "topright", "bottomleft", and "bottomright"

### Content

---

None.

## welcome

### Attributes

---

**Requirements:** Either the `file` attribute or the `mime-type` attribute must be specified, but not both.

Attribute name	Type	Description
file	String	The filename of the welcome file in the distribution package. For example, "welcome.rtf".
mime-type	String	The MIME-type specifier for the data contained in this element's content. This attribute is ignored when <code>file</code> is specified.
language	ISO language code	The language of the data in this element's content. For example, "el" (Modern Greek). This attribute is ignored when <code>file</code> is specified.

## Content

---

Text. Ignored when the `file` attribute is specified.

## readme

### Attributes

---

**Requirements:** Either the `file` attribute or the `mime-type` attribute must be specified, but not both.

Attribute name	Type	Description
<code>file</code>	String	The filename of the Read Me file in the distribution package. For example, "readme.rtf".
<code>mime-type</code>	String	The MIME-type specifier for the data contained in this element's content. This attribute is ignored when <code>file</code> is specified.
<code>language</code>	ISO language code	The language of the data in this element's content. For example, "el" (Modern Greek). This attribute is ignored when <code>file</code> is specified.

### Content

---

Text. Ignored when the `file` attribute is specified.

## license

### Attributes

---

**Requirements:** Either the `file` attribute or the `mime-type` attribute must be specified, but not both.

Attribute name	Type	Description
<code>file</code>	String	The filename of the license file in the distribution package. For example, "license.rtf".
<code>mime-type</code>	String	The MIME-type specifier for the data contained in this element's content. This attribute is ignored when <code>file</code> is specified.

Attribute name	Type	Description
language	ISO language code	The language of the data in this element's content. For example, "el" (Modern Greek). This attribute is ignored when <code>file</code> is specified.

## Content

---

Text. Ignored when the `file` attribute is specified.

## conclusion

### Attributes

---

**Requirements:** Either the `file` attribute or the `mime-type` attribute must be specified, but not both.

Attribute name	Type	Description
file	String	The filename of the conclusion file in the distribution package. For example, "conclusion.rtf".
mime-type	String	The MIME-type specifier for the data contained in this element's content. This attribute is ignored when <code>file</code> is specified.
language	ISO language code	The language of the data in this element's content. For example, "el" (Modern Greek). This attribute is ignored when <code>file</code> is specified.

### Content

---

Text. Ignored when the `file` attribute is specified.

## options

This element is used to support hybrid metapackages. It specifies the installation properties of a package within the distribution.

## Attributes

Attribute name	Type	Description
mpkg	pkg-ref.id	<i>Optional.</i> Identifies a package in this distribution whose install operations must be performed as part of the install of this distribution.
allow-external-scripts	String	<i>Optional.</i> Specifies whether the <code>system.run JavaScript</code> function can be executed. Values: <code>no</code> (default) and <code>yes</code> . See <i>Installer JavaScript Reference &gt; System &gt; run</i> .
customize	String	<i>Optional.</i> Specifies whether the user can customize the install by selecting or deselecting installation choices. Values: <code>allow</code> (default), <code>always</code> , or <code>never</code> .
rootVolumeOnly	Boolean	<i>Required.</i> Specifies whether the user can choose an installation volume other than the boot volume. Values: <code>true</code> or <code>false</code> .

## Content

None.

## choices-outline

This element defines the installation-choice hierarchy of a distribution package.

## Attributes

Attribute name	Type	Description
ui	String	<i>Optional.</i> The name of the application that is to display the choices specified by this element. Values: <code>Installer</code> (default), <code>SoftwareUpdate</code> , or <code>Invisible</code> . The last two values are for Apple use only).

## Content

This element can contain the following elements:

[“line”](#) (page 15) [1..\*]

## line

This element defines a node of the installation-choice hierarchy of a distribution package.

### Attributes

Attribute name	Type	Description
choice	choice.id	Required. Identifies the installation choice associated to this node of the installation-choice hierarchy of a distribution package. See “choice” (page 15)

### Content

This element can contain the following elements:

`line [0..*]`: These are the a choice’s subchoices.

## choice

This element defines an installation choice of a distribution package.

### Attributes

Attribute name	Type	Description
id	String	Required. Unique identifier of the installation choice.
bundle	Relative file path	Optional.
title	String, localization key	Required. Specifies the title of the install choice. Localizable.
description	String, localization key, text/plain, text/rtf, text/html	Required. Specifies the description of the install choice. Localizable.
description-mime-type	String	Optional. The MIME type of the text data in the description attribute. Values: "text/plain", "text/rtf", or "text/html".
tooltip	String, localization key	Optional. Informational text shown to the user when this choice is dimmed (the enabled attribute is "false").

Attribute name	Type	Description
customLocation	Absolute file path	Optional. Specifies the default installation location, within the installation volume, for this choice. Implies that the user can choose a different installation location. When unspecified, the user cannot choose the installation location for the choice.
customLocationAllowAlternateVolumes	String	Optional. Specifies whether the user can choose an installation volume for the choice. Values: "yes", or "no" (default). When "yes", the <code>customLocation</code> attribute must be defined.
enabled	String	Optional. Specifies whether the user can select or deselect this option in the Installer customization pane. When "yes" (default) the user can select or deselect the option; otherwise, the option is dimmed.
start_enabled	String	Optional. Specifies the initial enabled state of this option in the Installer customization pane. Values "yes" (default), "no".
selected	String	Optional. Specifies whether this option is selected or unselected for installation. Values "yes" (default), "no".
start_selected	String	Optional. Specifies whether this option is initially selected or unselected for installation. Values "yes" (default), "no".
visible	String	Optional. Specifies whether this option is visible in the Installer Customization pane. Values "yes" (default), "no".
start_visible	String	Optional. Specifies whether this option is initially visible in the Installer Customization pane. Values "yes" (default), "no".

## Content

---

This element can contain the following elements:

[“pkg-ref”](#) (page 17) [0..\*]: These are the a choice’s packages.



## pkg-ref

### Attributes

Attribute name	Type	Description
id	String	Required. Identifies a package within a distribution package. For example, <code>com.apple.TextEdit.pkg</code> .
installKBytes	Integer	Optional. Specifies the size of the package's payload in kilobytes.
archiveKBytes	Integer	Optional. Specifies the size of the package's payload in kilobytes.
version	String	Required. Specifies the version of the version of the package's payload.
auth	String	Optional. Specifies whether administrator authentication is required to install the package. Values "None" (default), "Admin", "Root".
onConclusion	String	Optional. Specifies the action to recommend or require once the installation has finished. Values: "None" (default), "RecommendRestart", "RequireLogout", "RequireRestart", or "RequireShutdown".
locator-tokens		Optional. Specifies the package's locator tokens.

### Content

Required. URL specifying the location of the installation package to which this element refers.

## installation-check

This element specifies whether the installation host meets the system requirements of the distribution.

### Attributes

Attribute name	Type	Description
script	Boolean	Required. Specifies whether the requirements are met. Values: <code>true</code> , <code>false</code> , Boolean JavaScript expression (normally, a JavaScript function defined in the distribution definition).

### Content

None.

## volume-check

This element specifies whether a particular volume meets the volume requirements of the distribution.

### Attributes

Attribute name	Type	Description
script	Boolean	Required. Specifies whether the requirements are met. Values: true, false, Boolean JavaScript expression (normally, a JavaScript function defined in the distribution definition).

### Content

None.

## script

Defines a set of JavaScript functions.

### Attributes

Attribute name	Type	Description
language	String	Optional. Specifies scripting language in which the code in this element's content is written. Value: "JavaScript" (default).

### Content

JavaScript code.

## locator

Defines a locator for the distribution. A locator defines a search that returns a set of zero or more files during an install.

## Attributes

---

None.

## Content

---

Text.

- [“tokens”](#) (page 19) [1..\*]

## tokens

Defines a token set.

## Attributes

---

Attribute name	Type	Description
id	String	Required. Identifies the token set defined in this element's content.

## Content

---

XML-based plist. Property list with token definitions.

## Localization

Specifies the distribution's localized strings.

## Attributes

---

None.

## Content

---

- [“strings”](#) (page 20) [1..\*]

## strings

Contains strings localized for a specific language.

### Attributes

---

Attribute name	Type	Description
language	ISO language code	Required. The language of the data in this element's content. For example, "el" (Modern Greek).

### Content

---

Text. The localized strings for the language identified by the `language` attribute. This is the same content that a `Localized.strings` file in a `.lproj` directory has.

# Document Revision History

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This table describes the changes to *Distribution Definition Reference*.

Date	Notes
2009-01-06	Fixed document bug.
2007-07-23	New document that describes the schema of distribution definition files.

**REVISION HISTORY**

Document Revision History