

## **Building Applications Examples – Part 4 Versioning**

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## Abstract

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4D 2004 features over 80 XML keys that can be used to build customized applications. The XML keys documentation gives basic information about what the keys do, but there are few examples. The goal of this series of Technical Notes is two-fold:

- Provide examples for each XML key, on Mac OS X and Windows, to aid the 4D developer in understanding what each key does.
- To make editing the XML project file, used in building applications, an easier task by providing a GUI editor.

Part 1 of this series provided a 4D database that can be used to edit project files.

Part 2 of this series provided examples for the XML keys from the General Parameters and Licenses themes.

Part 3 of this series provided examples for the XML keys from the CS and SourcesFiles themes.

In part 4 of this series, examples for the XML keys from the Versioning theme are presented.

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## Introduction

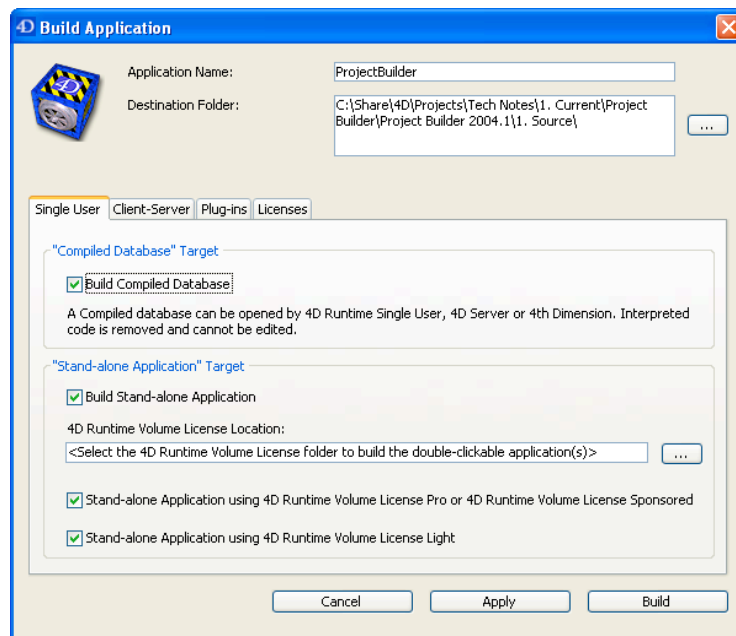
4D 2004 features the ability to control the application building process with the use of an XML project file. There are over 80 XML keys that can be used to build customized applications. The project file can contain some or all of these XML keys, as needed.

These XML keys allow many parts of a 4D application to be customized; for example the application name can be changed, or the path to the data file can be altered. The 4D 2004 XML Keys documentation can be downloaded from here:

<http://www.4d.com/support/documentation.html>

(The title is listed as "XML Keys BuildApplication")

The XML keys documentation gives basic information about what the keys do, but there are few examples. Similarly the "Build Application" dialog found in 4D offers access to only a subset of the XML keys available (approximately 15 of the keys can be edited with this dialog):



If access to the other keys is needed the **BUILD APPLICATION** command must be used, and the XML project file must be edited manually. Documentation for the BUILD APPLICATION command can be found here:

<http://www.4d.com/4ddoc2004/CMU/CMU00871.HTM>

The goal of this Technical Note series is two-fold:

- Provide examples for each XML key, on Mac OS X and Windows, to aid the 4D Developer in understanding what each key does.
- To make editing the XML project file an easier task by providing a GUI editor for them.

The XML keys are organized into themes as follows:

- **General Parameters** – These are keys that are not specific to single-user, server, nor client applications.
- **Licenses** – These keys are used to specify the location of license files necessary for building applications.
- **CS** – These keys are specific to building client-server applications.
- **Sources Files** – These keys are concerned with the files that go into building applications, e.g. paths to 4D software, icon files, etc.
- **Versioning** – These keys are used to alter the meta-information for the merged application, e.g. version and copyright information.

This document will cover the examples for the XML keys from the Versioning theme. These examples are intended to better explain what each XML key does.

## Terminology

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This section defines some of the terms used in this Technical Note, for clarification.

- **XML key** – Refers to a single XML element within the list of XML elements that 4D has defined for use with the application building features.
- **Theme** – The XML keys available are organized into 5 themes: General Parameters, Licenses, CS, SourcesFiles, and Versioning.
- **Compiled structure** – A compiled 4D database (.4dc file).
- **Merged application** – Refers to a 4D database that has been “merged” with 4D software in order to create a single application. Also known as “stand-alone” or “built”.
- **Merged single-user application** – Refers to a 4D database that has been merged with the 4D Runtime Volume License software.
- **Merged server application** – Refers to a 4D database that has been merged with the 4D Server software.
- **Merged client application** – Refers to the client portion of a merged client-server database. In this case there is no 4D database but the 4D Client software may have been customized as part of the build process.
- **Install image** – This term is used to describe all of the files that make up the installation of a merged application. For example a merged 4D Client install image contains the executable for the application, various libraries and resource files, etc. All of these files are collectively referred to as the “install image”.
- **Install client** – The install image of a merged client application. This is the software that would be manually installed on any given computer that will be used to connect to the merged server application.
- **Upgrade client** – The install image that is downloaded to the client machine for the purposes of automatically upgrading. This is not the software that would be manually installed on a given client computer. It is used by the automatic upgrade feature only.

## Structure of the Examples

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The example sections are organized by theme. Furthermore the XML keys appear in the same order as they do in the *4th Dimension XML Keys BuildApplication* documentation.

For each XML key example the following information is presented:

- A short, general description of what the key does.
- Dependencies on other keys are listed, if applicable.
- Windows example:
  - Windows-specific description (if applicable)
  - Compiled structure example (if applicable)
  - Single-user example (if applicable)
  - Client example (if applicable)
  - Server example (if applicable)
- Mac OS X example:
  - Mac-specific description (if applicable)
  - Compiled structure example (if applicable)
  - Single-user example (if applicable)
  - Client example (if applicable)
  - Server example (if applicable)

Within each example the value of the XML key being tested, and optionally the values of other related keys, is shown. Please note that the XPATH of the keys is ignored. Keys from different themes will be presented side by side, as in:

```
<BuildApplicationLight>True</BuildApplicationLight>  
<RuntimeVLIncludeIt>True</RuntimeVLIncludeIt>
```

The BuildApplicationLight key is not a sibling of the RuntimeVLIncludeIt key, in terms of XPATH notation. This is done to simplify the examples but remember that the keys must be placed at the correct location within the project file for them to work.

## Versioning

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This section covers examples of the XML keys from the "Versioning" theme. The "Versioning" theme is split into four subthemes: "Common", "RuntimeVL", "Server", and "Client".

This section differs from the previous sections in that there will not be an example for each key. The keys in the Versioning subthemes are very similar so the examples will be presented in groups. For example, CommonVersion, RuntimeVLVersion, ServerVersion, and ClientVersion will all be presented as one example.

The keys from the Common subtheme are global, meaning they affect merged single-user, client, and server applications. The keys from RuntimeVL, Server, and Client take precedence over those in Common but they only affect certain applications:

Theme	Application Affected
Common	All
RuntimeVL	Merged single-user
Server	Merged server
Client	Merged client

For example, if a value for CommonVersion is specified, as well as a value for ServerVersion, the following will occur:

- The merged server application will use the value specified with ServerVersion.
- The merged single-user and client applications will use the value specified by CommonVersion.



## CommonVersion, RuntimeVLVersion, ServerVersion, ClientVersion

These keys can be used to specify the application version. If no value is specified, the value for the 4D software (4D Runtime Volume License, 4D Server, 4D Client) is used.

### Example

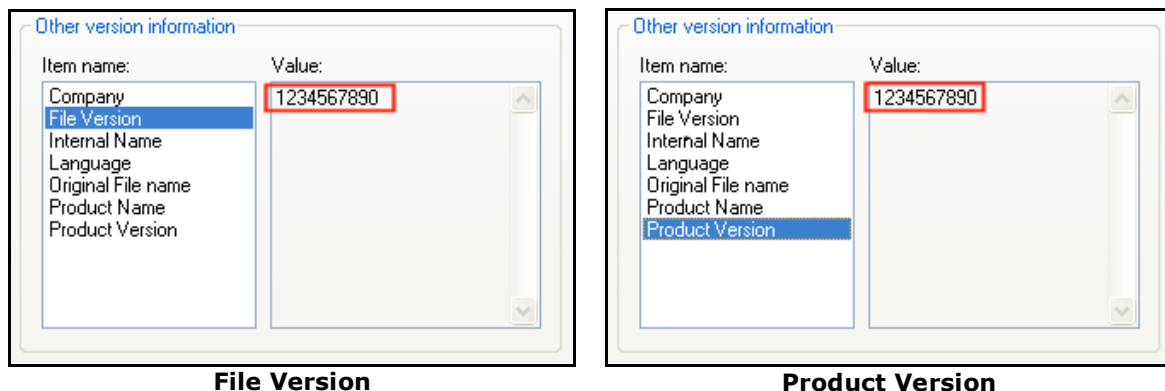
The CommonVersion key was set as follows:

```
<CommonVersion>1234567890</CommonVersion>
```

### Windows

This key modifies the "File Version" and "Product Version" properties of the executable file. To view this information, right-click on the executable file, select Properties, and select the "Version" tab in the Properties dialog.

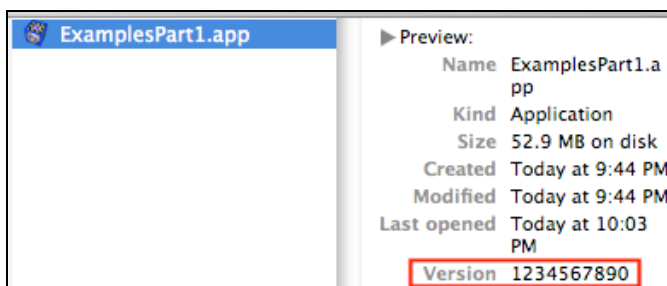
The value specified is limited to 10 characters.



### Mac OS X

This key modifies the "CFBundleShortVersionString" and "CFBundleVersion" fields of the "info.plist" file. To view this information, change Finder to view "As Columns" and select the merged application.

The value specified is limited to 10 characters.



## CommonCopyright, RuntimeVLCopyright, ServerCopyright, ClientCopyright

These keys can be used to specify the copyright information for the application. If no value is specified, the value for the 4D software (4D Runtime Volume License, 4D Server, 4D Client) is used.

### Example

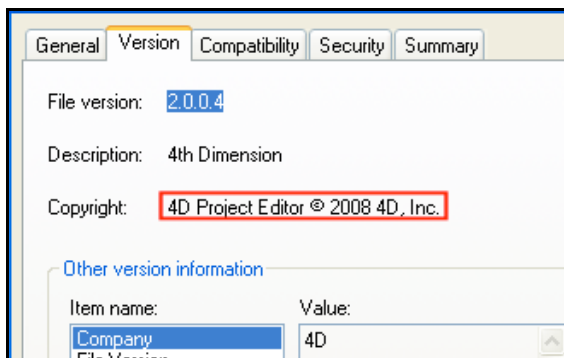
The CommonCopyright key was set as follows:

```
<CommonCopyright>4D Project Editor © 2008 4D, Inc.</CommonCopyright>
```

### Windows

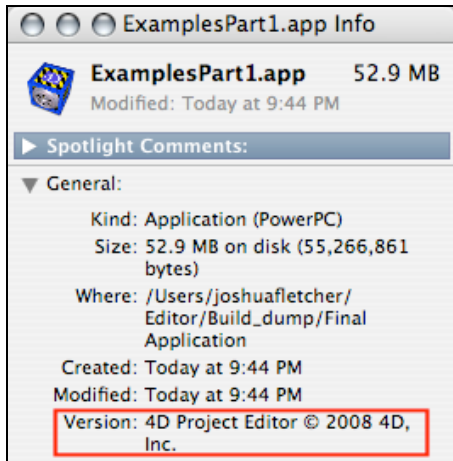
This key modifies the "Copyright" property of the executable file. To view this information, right-click on the executable file, select Properties, and select the "Version" tab in the Properties dialog.

The value specified has no practical limit, meaning it can be much larger than the space available in the Properties dialog. Obviously it is recommended to make the value short enough to fit.



## Mac OS X

This key modifies the "CFBundleGetInfoString" field of the "info.plist" file. To view this information, perform a "Get Info" on the merged application.



## **CommonCreator, RuntimeVLCreator, ServerCreator, ClientCreator**

These keys can be used to specify the Creator code for applications on Mac OS X. If no value is specified, the value for 4D 2004 software (4D06) is used.

**Note:** *This also affects files created by the merged application.*

### **Example**

The CommonCreator key was set as follows:

```
<CommonCreator>ABCD</CommonCreator>
```

#### **Windows**

This key has no effect on Windows.

#### **Mac OS X**

This key changes the Creator code for the application, as well as the default Creator code for any files created by the application.

This key must be 4 characters total.

## CommonComment, RuntimeVLComment, ServerComment, ClientComment

These keys can be used to specify the comment information for the application. If no value is specified, this value will not exist in the merged application.

### Example

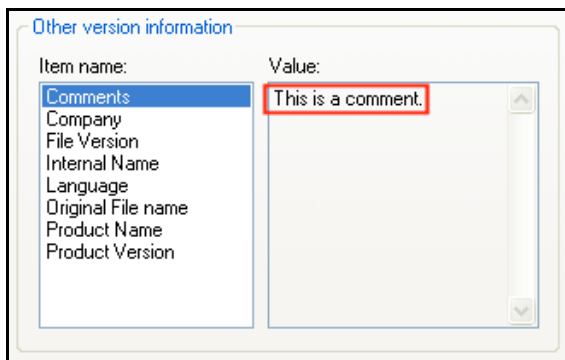
The CommonComment key was set as follows:

```
<CommonComment>This is a comment.</CommonComment>
```

### Windows

This key modifies the "Comments" property of the executable file. To view this information, right-click on the executable file, select Properties, and select the "Version" tab in the Properties dialog.

The value specified is limited to 31 characters.



### Mac OS X

This key has no effect on Mac OS X.

## CommonCompanyName, RuntimeVLCompanyName, ServerCompanyName, ClientCompanyName

These keys can be used to specify the company name information for the application. If no value is specified, the value for the 4D software (4D Runtime Volume License, 4D Server, 4D Client) is used.

### Example

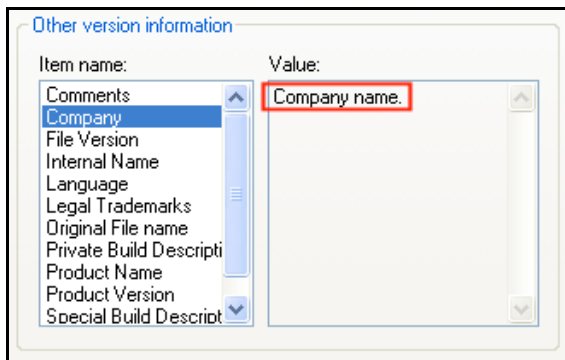
The CommonCompanyName key was set as follows:

```
<CommonCompanyName>Company name.</CommonCompanyName>
```

### Windows

This key modifies the "Company" property of the executable file. To view this information, right-click on the executable file, select Properties, and select the "Version" tab in the Properties dialog.

The value specified is limited to 31 characters.



### Mac OS X

This key has no effect on Mac OS X.

## CommonFileDescription, RuntimeVLFileDescription, ServerFileDescription, ClientFileDescription

These keys can be used to specify the description information for the application. If no value is specified, the value for the 4D software (4D Runtime Volume License, 4D Server, 4D Client) is used.

### Example

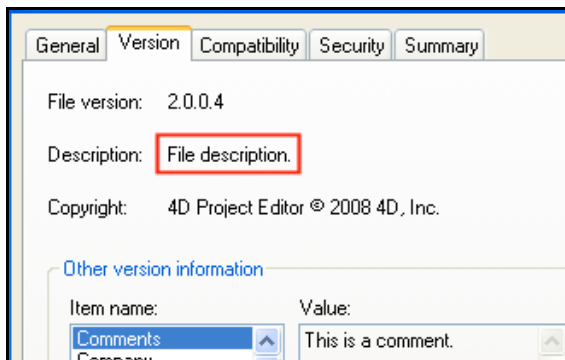
The CommonFileDescription key was set as follows:

```
<CommonFileDescription>File description.</CommonFileDescription>
```

### Windows

This key modifies the "Description" property of the executable file. To view this information, right-click on the executable file, select Properties, and select the "Version" tab in the Properties dialog.

The value specified is limited to 31 characters.



### Mac OS X

This key has no effect on Mac OS X.

## **CommonInternalName, RuntimeVLIInternalName, ServerInternalName, ClientInternalName**

These keys can be used to specify the internal name information for the application. If no value is specified, the value for the 4D software (4D Runtime Volume License, 4D Server, 4D Client) is used.

### **Example**

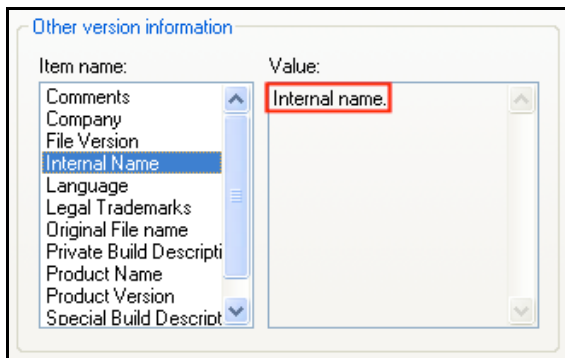
The CommonInternalName key was set as follows:

```
<CommonInternalName>Internal name.</CommonInternalName>
```

### **Windows**

This key modifies the "Internal Name" property of the executable file. To view this information, right-click on the executable file, select Properties, and select the "Version" tab in the Properties dialog.

The value specified is limited to 31 characters.



### **Mac OS X**

This key has no effect on Mac OS X.



## CommonLegalTrademark, RuntimeLegalTrademark, ServerLegalTrademark, ClientLegalTrademark

These keys can be used to specify the trademark information for the application. If no value is specified, this value will not exist in the merged application.

### Example

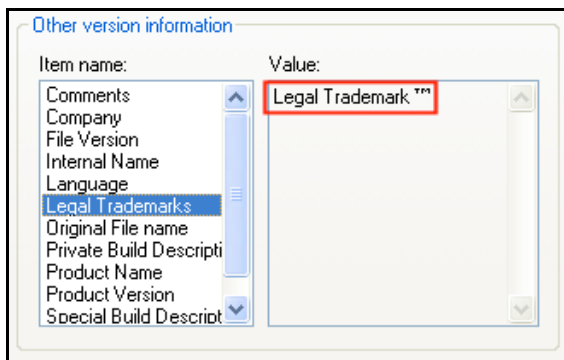
The CommonLegalTrademark key was set as follows:

```
<CommonLegalTrademark>Legal Trademark ™</CommonLegalTrademark>
```

### Windows

This key modifies the "Legal Trademarks" property of the executable file. To view this information, right-click on the executable file, select Properties, and select the "Version" tab in the Properties dialog.

The value specified is limited to 31 characters.



### Mac OS X

This key has no effect on Mac OS X.

## CommonPrivateBuild, RuntimePrivateBuild, ServerPrivateBuild, ClientPrivateBuild

These keys can be used to specify the private build information for the application. If no value is specified, this value will not exist in the merged application.

### Example

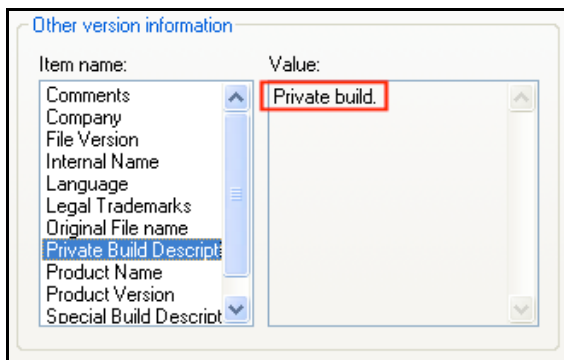
The CommonPrivateBuild key was set as follows:

```
<CommonPrivateBuild>Private build.</CommonPrivateBuild>
```

### Windows

This key modifies the "Private Build Description" property of the executable file. To view this information, right-click on the executable file, select Properties, and select the "Version" tab in the Properties dialog.

The value specified is limited to 31 characters.



### Mac OS X

This key has no effect on Mac OS X.

## CommonSpecialBuild, RuntimeSpecialBuild, ServerSpecialBuild, ClientSpecialBuild

These keys can be used to specify the special build information for the application. If no value is specified, this value will not exist in the merged application.

### Example

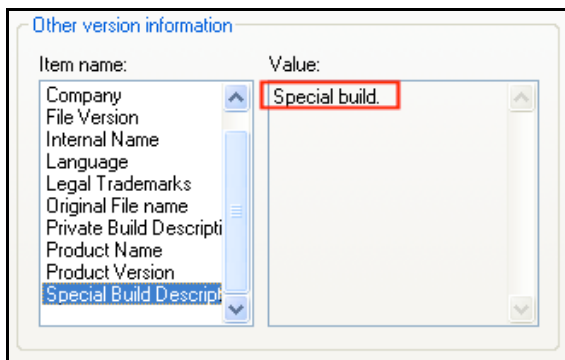
The CommonSpecialBuild key was set as follows:

```
<CommonSpecialBuild>Special build.</CommonSpecialBuild>
```

### Windows

This key modifies the "Special Build Description" property of the executable file. To view this information, right-click on the executable file, select Properties, and select the "Version" tab in the Properties dialog.

The value specified is limited to 31 characters.



### Mac OS X

This key has no effect on Mac OS X.

## Conclusion

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This Technical Note provided examples of the XML keys from the Versioning theme. These examples built upon the information presented in the XML keys documentation. Through these examples the 4D developer should have a better understanding of what each XML key from this theme does.

This Technical Note concludes the Building Applications Examples series.

## Related Resources

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4D 2004 XML Keys Documentation:

<http://www.4d.com/support/documentation.html>

BUILD APPLICATION command:

<http://www.4d.com/4ddoc2004/CMU/CMU00871.HTM>

Tech Note: Building Applications Examples series:

- Building Applications Examples – Part 1 - 4D 2004 Project Editor
- Building Applications Examples – Part 2 – General Parameters and Licenses
- Building Applications Examples – Part 3 – CS and SourcesFiles

<http://www.4d.com/support/technotes.html>

Tech Note: Building Applications with 4D 2004: Automatic Client Upgrade

<http://www.4d.com/support/technotes.html>