

Palmbutler Content Developer Manual

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Palmbutler Content Developer Manual

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Palmbutler Content Developer Manual

1 Introduction to Palmbutler Content Development

Palmbutler Container is an XML based script language for content providers that allow them to build and host Palmbutler Containers and content in Macromedia Flash, HTML and Java for the Palmbutler system.

This document gives a technical introduction for Palmbutler content development.

Palmbutler Container scripts language is made for content providers and we value proposals and suggestions for enhancement.

This document has been updated to Palmbutler Software version 3.2.



Figure 1 Danish TV2 news container with on demand news

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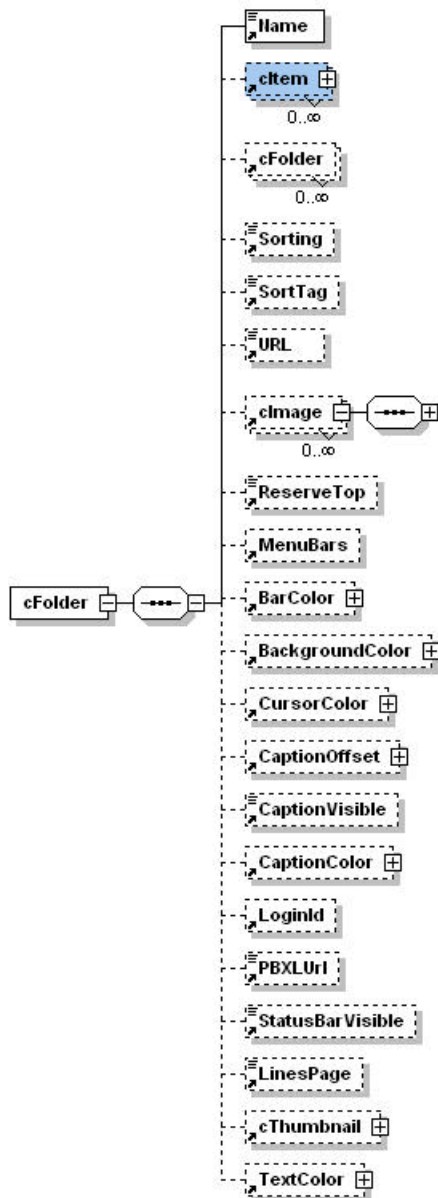
2 Container Technical overview

Palmbutler Containers are XML documents with folders (cFolders) and items (cItems). The folders and items have optional attributes to let Palmbutler know about the type of content and control the graphical design.

2.1 The Palmbutler Container XML structure

The figure shows a diagram of the Palmbutler Container XML structure. Only the first levels are shown. An updated version of the XML Schema Document can be found at

<http://www.palmbutler.com/download/containers/pbXMLContainer.xsd>



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2.2 Palmbutler Container XML tags

Here is a short description of the Palmbutler Container XML tags.

3.2.1 <cFolder>

Folder record. Has the attribute "Type" that tells the folder type. Type has the following possible values:

Container: Only the outer folder in a document can be of this type.

ConChild: Subfolders in a document has this type

ConLink: This folder contains a link <URL> for another container.

3.2.2 <cItem>

Item record. The attribute "Type" is stating the media type. Type has the following possible values:

VideoClip: Video from the local drive

VideoStream: Video streamed from a server

AudioClip: Audio from the local drive

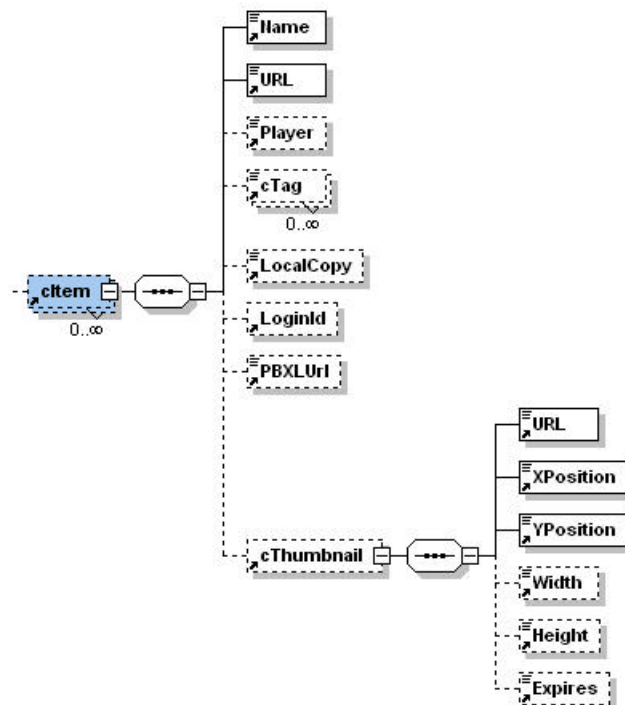
AudioStream: Audio streamed from a server

Photo: Photos

BrowserURL: a html page

About Photo: In a folder with more items of photo type the user can make a slide show by pressing the play button on the remote.

The other properties for a cItem is shown on the figure below.



3.2.3 <Name>

Name on the folder or item, which is shown in the menu.

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3.2.4 <URL>

This is the Local path or URL on the Internet.

E.g. C:\test\background.jpg or http://www.testserver.com/container.pbc

3.2.5 <Player>

This tag chooses which player to use. Player has the following possible values:

Default

MediaPlayer

RealPlayer

Also Player values from Script Plugins are allowed.

Default is default and chooses the default player from the Palmbutler association for playback.

3.2.6 <cTag>

This is a tag for additional information e.g.

```
<cTag Name="Genre">Jazz</cTag>
```

Is used for sorting the content in the menu.

3.2.7 <Sorting>

User chosen sorting from the submenu. The value is for the actual folder.

Possible values:

None

ByName

ByType

ByTag

3.2.8 <SortTag>

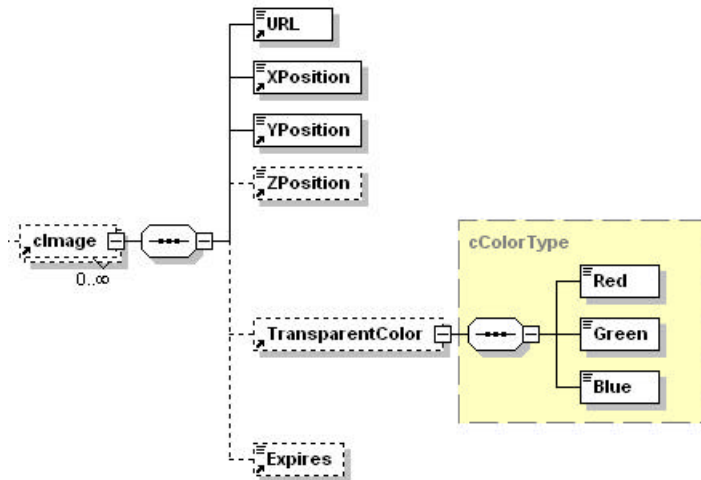
If "Sorting" is ByTag this tag names the tag that is sorted on.

3.2.9 <clmage>

This is a picture that is show in the folder. Following formats is supported: JPG, BMP, PNG. GIF will be supported in the future.

clmage has the properties shown on the figure below.

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3.2.10 <Xposition>, <Yposition>

Position where the picture should be shown. Xposition=0 and Yposition=0 is the upper left corner of the screen.

3.2.11 <Zposition>

This states which picture is draw first on the screen. This makes sense e.g. if pictures are covering each other to some degree.

3.2.12 <TransparentColor>

Defines which colour is transparent. Needs a red, green and blue tag to tell the colour value.

3.2.13 <ReserveTop>

Reserve a number of pixels in the top of the folder for e.g. a picture. No menu lines are placed in the area.

3.2.14 <MenuBars>

Boolean value that decides is the menu has bars for every second line.

Values can be 1 or 0.

Value 0 tells not to show Menu bars.

If <MenuBars> is not used the default value is 1.

3.2.15 <BackgroundColor>

Background colour for the menu. Background color is shown as a replacement for the default background picture.

Tip: first time a background picture is downloaded it takes a little while where the background color or the default background picture is shown. Background Color can be used to make a soft takeover of the new background picture while the background picture is downloaded.

3.2.16 <CursorColor>

Color for the transparent cursor

3.2.17 <CaptionOffset>

Offset in pixels for the vertical caption in the right side of the screen. Z-value is not used.

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3.2.18 <CaptionVisible>

Boolean value that decides is the vertical caption in the right side of the screen is visible. Values are 0 or 1.

Value 0 makes the caption not visible.

If <CaptionVisible> is not used the default value is 1.

3.2.19 <CaptionColor>

Color for the name of the Caption.

3.2.20 <LocalCopy>

This is used if the URL needs to be downloaded on the local machine before it is played/viewed.

e.g. a value of "sgimb" is used for playing Kasenna Mediabase streams. Ask for more info if needed at lrj@homelinc.com

3.2.21 <LoginId>

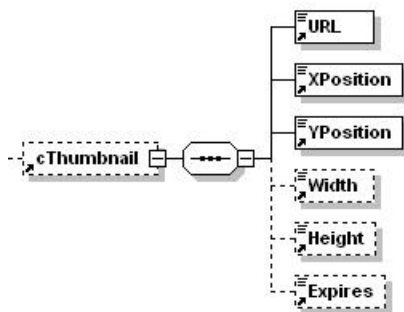
This is used for limiting access to containers. Check the special chapter on this issue.

3.2.22 <PBXUrl>

This is used for user input in containers. Check the special chapter on PBXL.

3.2.23 <cThumbnail>

cThumbnail is used to change the default icons or even have a graphic image as the menu item.



3.2.24 <Width>

Width of thumbnail image.

3.2.25 <Height>

Height of thumbnail image.

3.2.26 <Expires>

This is used to set the cache expiration value

Valid values include

"22/10/2004 15:47", "22/10/2004" and "0"

You turn off caching with a "0" value.

3.2.27 <StatusBarVisible>

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Turn on or off the statusbar. Value "1" is visible and "0" is not visible. Default is statusbar is visible.

3.2.28 <LinesPage>

The number of item can be changed using this tag.
Values is normally between 7 and 11.

3.2.29 <TextColor>

Color of the text. Default is white.

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2.3 Example of a Palmbutler Container document

Example of a container document:

```
<?xml version="1.0" encoding="iso-8859-1"?>
<Container xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="http://www.palmbutler.com/download/containers/pbXMLContainer.xsd">
  <cFolder Type="Container">
    <Name>Online Portal</Name>
    <cFolder Type="ConLink">
      <Name>Internetradio Index</Name>
      <URL>http://www.palmbutler.com/download/containers/radioindex.pbc</URL>
    </cFolder>
    <cFolder Type="ConLink">
      <Name>Internet TV Index</Name>
      <URL>http://www.palmbutler.com/download/containers/tvindex.pbc</URL>
    </cFolder>
    <cFolder Type="ConLink">
      <Name>Berlingske Tidende</Name>
      <URL>http://www.palmbutler.com/download/containers/berlingske/default.xml</URL>
    </cFolder>
    <cFolder Type="ConLink">
      <Name>Movie Trailers</Name>
      <URL>http://www.palmbutler.com/download/containers/movietrailers.pbc</URL>
    </cFolder>
    <cFolder Type="ConLink">
      <Name>Music Video</Name>
      <URL>http://www.palmbutler.com/download/containers/musicvideo.pbc</URL>
    </cFolder>
    <cFolder Type="ConLink">
      <Name>International Homelinc Portals</Name>
      <URL>http://www.palmbutler.com/download/containers/natindex.pbc</URL>
    </cFolder>
  </cFolder>
</Container>
```

In Palmbutler the container looks like this



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3 PBXL – Userinput in Containers

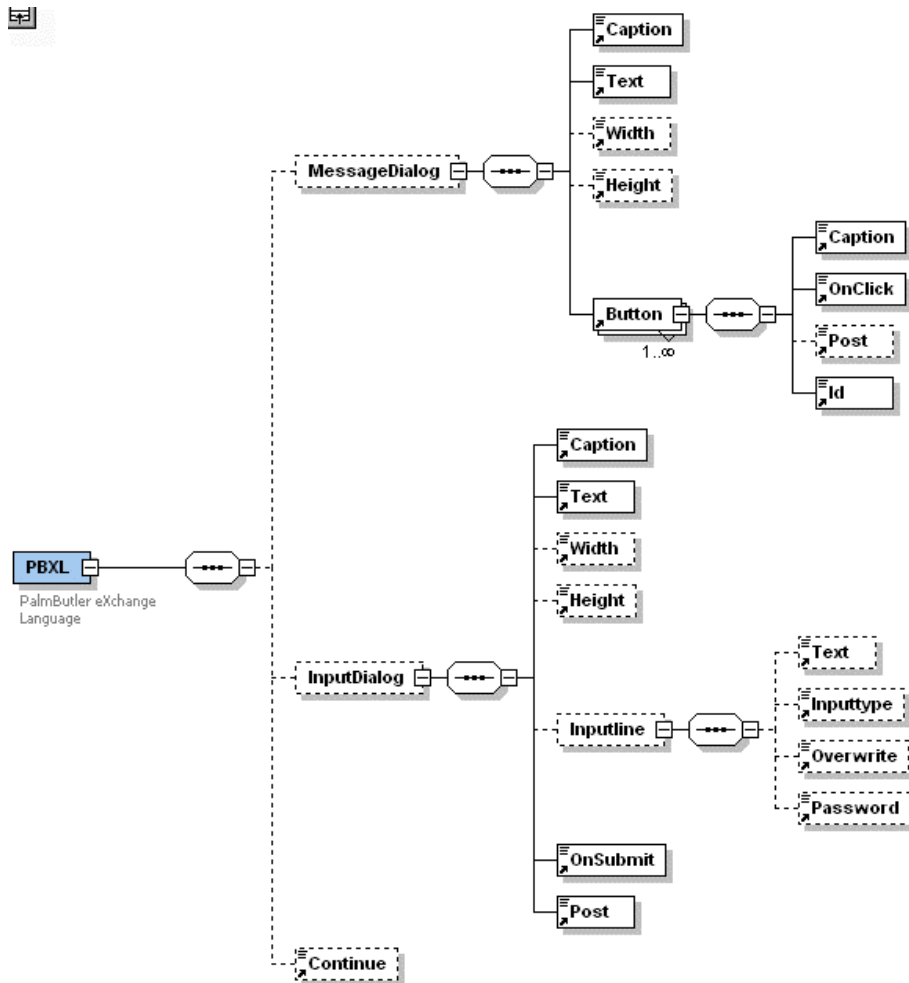


Figure 2

A PBXL file is a XML file using the tags shown in figure 1. The PBXL tag only contains one tag – either `<MessageDialog>`, `<InputDialog>` or `<Continue>`. Tags below `<MessageDialog>` and `<InputDialog>` contains links to other PBXL files. Those PBXL files are loaded in response to user input. Each PBXL file represent a user dialog or a result. The result is a PBXL file containing the `<Continue>` tag. This ends the chain of PBXL files and tells Palmbutler whether to continue navigating into the item or to cancel.

For example asking the user to enter his credit card informations in response to selecting a video item could consist of

1. A message dialog telling the user the price of the movie and asking if he wants to continue. A “Yes” button and a “No” button.
2. A input dialog. If the user chose the yes button asking for the credit card number.
3. A input dialog asking for the expire date

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4. A message dialog. If his credit card is approved a message telling him that he'll be able to access this movie for the next 24 hours. If his credit card is rejected a message about that.
5. The result. The continue tag contain 1 if Palmbutler should start the video and 0 if not.

If the user selects this movie again before 24 hours the response from the video server is simply `<PBXL><Continue>1</Continue></PBXL>` allowing the user straight in.

3.1 Message Dialogs

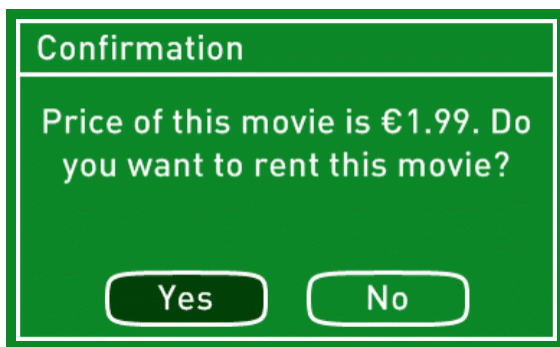


Figure 3

The PBXL file for the message dialog in figure 2 is shown below.

```
<?xml version="1.0" encoding="UTF-8"?>
<PBXL>
  <MessageDialog>
    <Caption>Confirmation</Caption>
    <Text>Price of this movie is €1.99. Do you want to rent this movie?</Text>
    <Width>370</Width>
    <Height>180</Height>
    <Button>
      <Caption>Yes</Caption>
      <OnClick> http://123video.com/shop.asp</OnClick>
      <Id>100</Id>
      <Post>1</Post>
    </Button>
    <Button>
      <Caption>No</Caption>
      <OnClick> http://123video.com/shop.asp</OnClick>
      <Id>200</Id>
      <Post>1</Post>
    </Button>
  </MessageDialog>
</PBXL>
```

The `<OnClick>` tag holds the link to the next PBXL file. When the user presses a button the corresponding OnClick URL is called. Id is the value that is send back to identify which button was pressed. Information returned to the server can be returned as form data in a POST command or as URL encoded data through a GET command. The above example uses the POST method. The Id is posted with the name "buttonid". If the media item requires login then the

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userid and password is posted as well. With `<Post>0</Post>` a GET command is used instead. Variables can be inserted into the url by surrounding the variable name with \$ characters.

```
<Button>
  <Caption>Yes</Caption>
  <OnClick>
    http://123video.com/shop.asp?userid=$userid&password=$password&button=$buttonid$</OnClick>
  <Id>100</Id>
</Button>
```

Variables in the url can also be used with POST.

Currently only 3 button combinations are allowed:

[OK]
[OK], [Cancel]
[Yes], [No]

The `<Width>` and `<Height>` tags sets the size of the dialog. No matter which resolution the user is using Palmbutler coordinates are always given in a 800x600 pixel system.

3.2 Input Dialogs

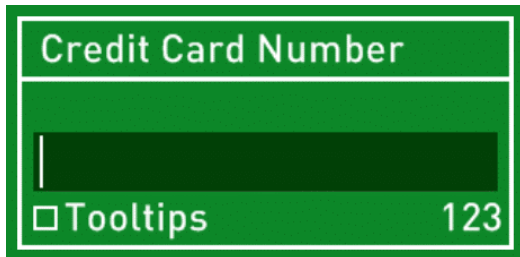


Figure 4

The PBXL file for the message dialog in figure 3 is shown below.

```
<?xml version="1.0" encoding="UTF-8"?>
<PBXL>
  <InputDialog>
    <Caption>Credit Card Number</Caption>
    <Width>300</Width>
    <Inputline>
      <Inputtype>itNumbers</Inputtype>
    </Inputline>
    <OnSubmit>https://www.123video.com/trans.asp</OnSubmit>
    <Post>1</Post>
  </InputDialog>
</PBXL>
```

The `<OnSubmit>` tag holds the url called when the user presses the OK button on the remote. The text entered is posted in the "input" variable. The `<Inputtype>` tag tells Palmbutler to put the dialog in number mode. This tag has the following choices

itMixed (Sets the first letter to uppercase)

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itUpperCase	(All uppercase)
itLowerCase	(All lowercase)
itNumbers	(Only numbers)

The other inputline tags not used in this example are <Text>, <Overwrite> and <Password>. <Text> sets the initial text in the input dialog. <Overwrite> accepts either 0 or 1 for off or on. This puts the input line in either insert or overwrite mode. <Password> accepts either 0 or 1 for off or on. Password mode is only allowed when Inputtype is itNumbers. When password is enabled stars are shown in the input line instead of numbers.

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3.3 Returned values

Here is an overview of the values that currently can be returned. The variable names are

userid	(If the item links to a login object)
password	(If the item links to a login object)
locale	(The language code used in Palmbutler)
buttonid	(Button pressed in message dialogs)
input	(Text entered in input dialogs)

when used in url's the variable names have the \$ symbol before and after e.g. \$userid\$

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4 How to protect Palmbutler Container with login

24102003 LRJ/JL

This samples includes a working sample container link on Palmbutler.com server.

4.1 Palmbutler Client:

Palmbutler Software 3.1 includes a login/password functionality

The user will have to type in or install login information through the security tab in Palmbutler Configuration.

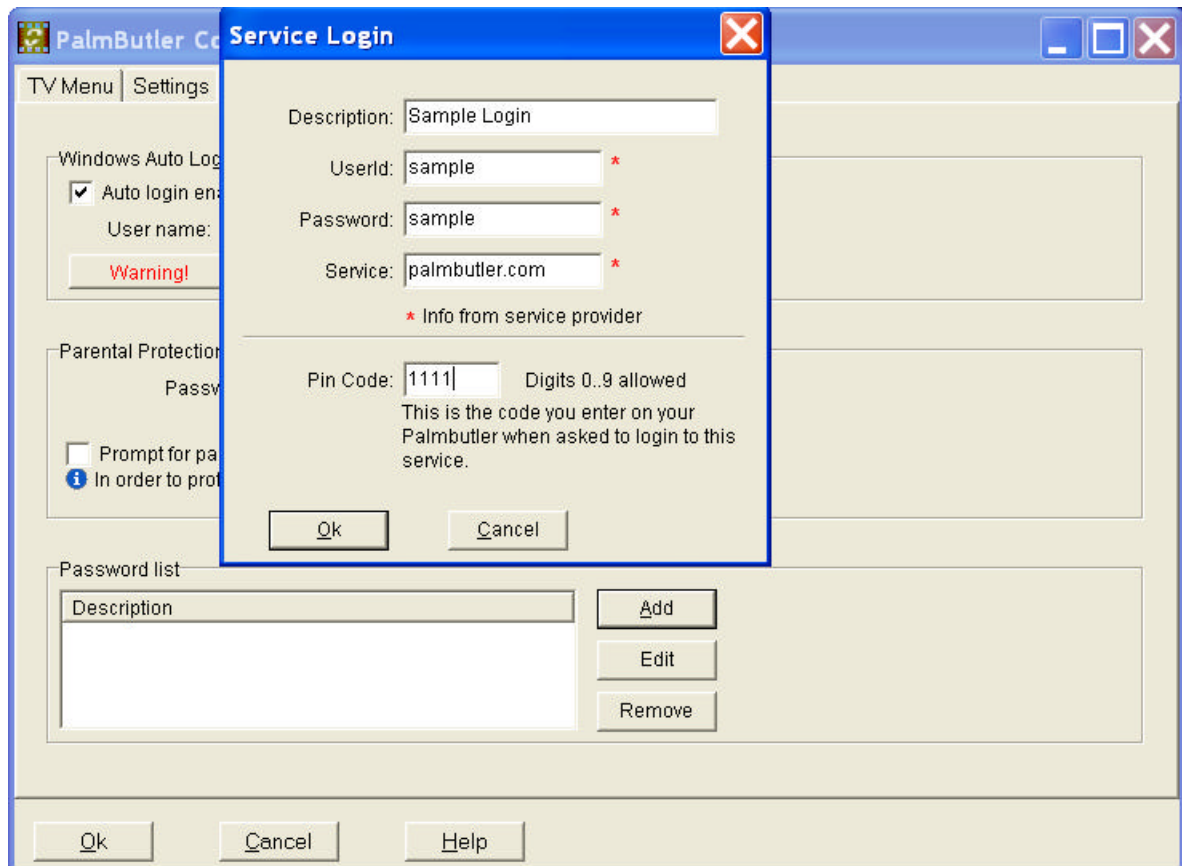


Figure 5

Information for entering into the Service login using the samples:

Description: Palmbutler login sample

UserId: sample

Password: sample

Service (used as <LoginId> in containers): palmbutler.com

Pin code: 1111

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4.2 <LoginId> tag samples

A new tag has been added to the container structure to include login/password to subelements in the container.

<LoginId>

The loginid is a string that links the element to the login informations in figure 1. Palmbutler uses the loginid to locate the login informations. The loginid can be applied to subcontainers as well as individual media items.

Typical the domain of the service will be used as the loginid – “domain.com”. The “Service” field contains the LoginId in figure 1.

Example of <LoginId> in the loginsample1.pbc:

```
<?xml version="1.0" encoding="iso-8859-1"?>
<Container xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="http://www.palmbutler.com/
download/containers/pbXMLContainer.xsd">
<cFolder Type="Container">
<Name>Post Login Sample Portal</Name>
<cFolder Type="ConLink">
<Name>Login</Name>
<URL>http://www.palmbutler.com/download/containers/samples/login1.asp
</URL>
<LoginId>palmbutler.com</LoginId>
</cFolder>
</cFolder>
</Container>
```

The userid and password data is posted if a <LoginId> is present in a container.

The data is found in form data variables called “userid” and “password”

A live version of the sample is available at

<http://www.palmbutler.com/download/sample/loginsample1.pbc>

The userid and password can also the be included in a url like this:

```
<URL>http://www.palmbutler.com/download/containers/samples/login.asp?us
erid=$userid&password=$password<URL>
```

or for a normal http login like this

```
<URL>http://$userid:$password@www.palmbutler.com/protectedcontainer.
pbc</URL>
```

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Example of <LoginId> in the loginsample2.pbc demonstrating transfer of data in url:

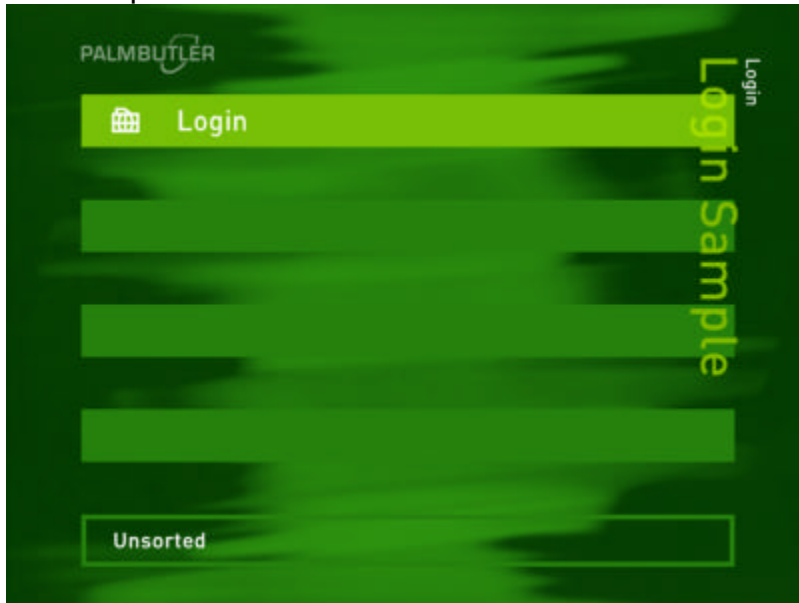
```
<?xml version="1.0" encoding="iso-8859-1"?>
<Container xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="http://www.palmbutler.com/download/con
tainers/pbXMLContainer.xsd">
<cFolder Type="Container">
<Name>Login Sample Portal</Name>
<cFolder Type="ConLink">
<Name>Login</Name>
<URL>http://www.palmbutler.com/download/containers/samples/login2.asp
?userid=$userid&password=$password$</URL>
<LoginId>palmbutler.com</LoginId>
</cFolder>
</cFolder>
</Container>
```

A live version of the sample is available at

<http://www.palmbutler.com/download/sample/loginsample2.pbc>

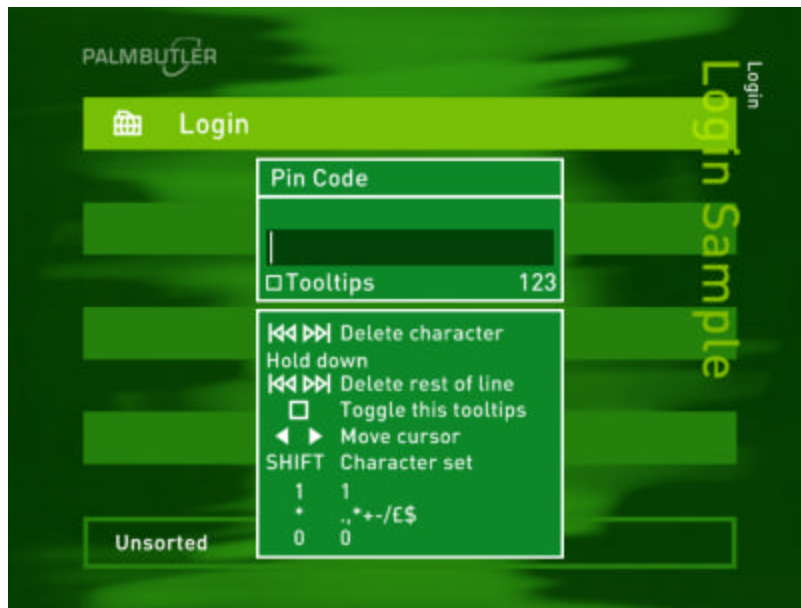
try adding this to your Palmbutler Configuration TVMenu and type ind the data in Configuration Media login for a demo.

The sample containers looks like this when added:



When trying to enter the Login link you get a prompt from pincode like this:

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4.3 Server side – how to integrate login and deliver dynamic containers

On the server side the Container files can be created dynamic e.g. in ASP on an IIS server.

A dynamic sample container login1.asp with a very simple login check. The script is called from the loginsample1.pbc container. If login is false a 400 error reported in the header from IIS. If login is OK the Sample Portal container is returned.

```
<%
' Palmbutler Sample Container with login
' Live at
' http://www.palmbutler.com/download/containers/samples/login1.asp
' Login and password is included as post data
Dim UserID, Password
UserID = request.Form("UserID")
Password = request.Form("Password")
'Check password
If UserID<>"sample" Then
    Response.Status = "403 Forbidden"
    Response.Write(response.Status & " - Wrong Username")
    Response.End
Elseif Password<>"sample" Then
    Response.Status = "403 Forbidden"
    Response.Write(response.Status & " - Wrong Password")
    Response.End
Else
'Success show protected container
'Change output to XML
Response.ContentType = "text/xml"
%><?xml version="1.0" encoding="iso-8859-1"?>
<Container xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="http://www.palmbutler.com/
download/containers/pbXMLContainer.xsd">
<cFolder Type="Container">
<Name>Login Sample Portal</Name>
<cFolder Type="ConLink">
<Name>Internetradio Index</Name>
<URL>http://www.palmbutler.com/download/containers/radioindex.pbc</URL>
</cFolder>
<cFolder Type="ConLink">
<Name>Internet TV Index</Name>
<URL>http://www.palmbutler.com/download/containers/tvindex.pbc</URL>
</cFolder>
</cFolder>
</Container>
<% End If %>
```

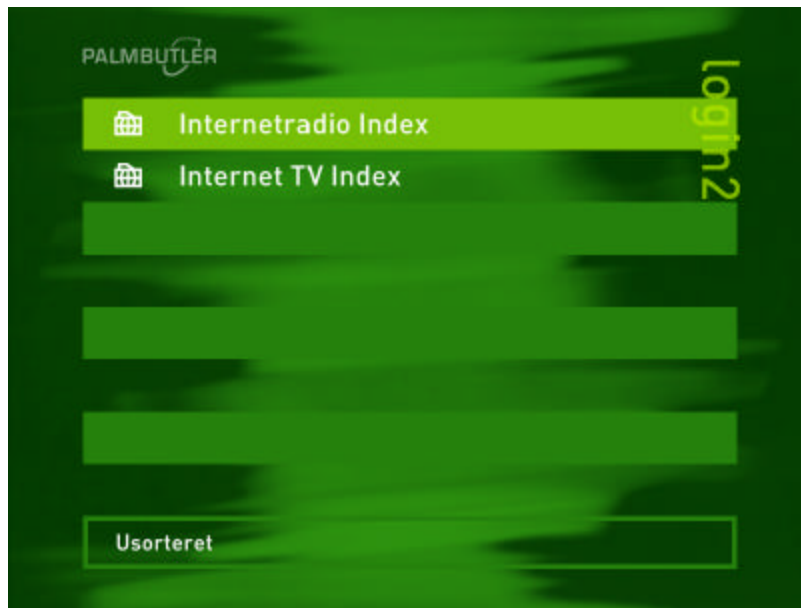
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The same sample container as above login2.asp with a very simple login check. But this time the data is fetched from the querystring in asp as called from the loginsample2.pbc container shown earlier. If login is false a 400 error reported in the header from IIS. If login is OK the Sample Portal container is returned.

```
<%
' Palmbutler Sample Container with login
' Live at
' http://www.palmbutler.com/download/containers/samples/login2.asp
' Login and password is included as
' login.asp?userid=sample&password=sample
Dim UserID, Password
UserID = request.querystring("UserID")
Password = request.querystring("Password")
'Check password
If UserID<>"sample" Then
    Response.Status = "403 Forbidden"
    Response.Write(response.Status & " - Wrong Username")
    Response.End
Elseif Password<>"sample" Then
    Response.Status = "403 Forbidden"
    Response.Write(response.Status & " - Wrong Password")
    Response.End
Else
'Success show protected container
'Change output to XML
Response.ContentType = "text/xml"
%><?xml version="1.0" encoding="iso-8859-1"?>
<Container xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="http://www.palmbutler.com/
download/containers/pbXMLContainer.xsd">
<cFolder Type="Container">
<Name>Login Sample Portal</Name>
<cFolder Type="ConLink">
<Name>Internetradio Index</Name>
<URL>http://www.palmbutler.com/download/containers/radioindex.pbc</UR
L>
</cFolder>
<cFolder Type="ConLink">
<Name>Internet TV Index</Name>
<URL>http://www.palmbutler.com/download/containers/tvindex.pbc</URL>
</cFolder>
</cFolder>
</Container>
<% End If %>
```

The container looks like this on a succesfull login after typing in pincode:

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5 How to serve your content

Palmbutler Container documents is typically served as documents on a web server using the file type .pbc e.g. palmbutlercontainerexample.pbc

Palmbutler Container is served from the content suppliers web server or streaming media server.

Links can be included in Palmbutler menu's Container Index by appointment with Homelinc.

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6 Designing for the Palmbutler TV screen

When designing for the Palmbutler TV screen here is some good advice.

- Test the final result on the TV screen.
- Don't use saturated deeply colors, red, green and blue that do not show well on TV. There is a difference between NTSC and PAL's ability to show the saturated colors. PAL normally shows color extremes better than NTSC.

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7 XML kickstart

It is a good idea to use a XML editing tool e.g. XMLSpy. Here is a few tips to help you getting started with XML editing.

7.1 Use Internet Explorer for Syntax checking

In general Microsoft Internet Explorer can help you with many syntax errors on the pages by putting your XML-URL e.g.

<http://www.mysite.com/mytestxmlpage.xml>

Into Internet Explorer and checking at the bottom of the page. Works only for IE5.5 and up.

7.2 Special Characters

If you want one of the following characters < > & ' " in XML outside of <tags> you need to exchange the following characters with

& - &

< - <

> - >

' - '

" - "

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8 HTML for the Palmbutler TV screen

The screen resolution is always 800x600.

Palmbutler tabs through the <a href> links using the joystick and enters a link using the joystick button.

Users can switch mouse functionality to and from by pressing *(star) on their remote when watching a WebLink.

8.1 Getting from Weblinks to containers

If you create a simple html page with a redirect to a *.pbc URL the Weblink will close and you will be back in the container.

```
<html>
  <head>
    <meta http-equiv="Refresh"
content="5;URL=http://www.palmbutler.com/download/containers/index.pbc">
  </head>
  <body>
    <h1>redirect in 5 sec</h1>
  </body>
</html>
```

example is live at

<http://www.palmbutler.com/download/containers/samples/backtocontainer.asp>

This document let's you press enter with the navigation button on the Palmbutler remote in a weblink and will take you back to a container.

```
<html>
  <head>
    Palmbutler html link to container
  </head>
  <body onLoad="window.location.hash='defaultlink'">
    <h1>Press Enter to activate link and to move to
container</h1><br><br>
    <a
href="http://www.palmbutler.com/download/containers/index.pbc"
target="_self" name="defaultlink">link to container
main index</a> <br>
  </body>
</html>
```

example is live at

<http://www.palmbutler.com/download/containers/samples/linktocontainer.asp>

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9 Java applets for Palmbutler

It is possible to control java applets through JavaScript. For more information and a demo application please contact lrj@homelinc.com

10 Macromedia Flash 5 for Palmbutler

An example on how to use Palmbutler to control Flash5 movies is available on request at lrj@homelinc.com

11 Mixing Container and Script Plugins

It is possible to use Player names from <Description> tags in Script plugins as <Player> tag values in containers.

Example: You want to make a list of Winamp based radios playing with the winamp3 script plugin.