



Fundamental Objects

FO HANDHELD NEWS
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Welcome

... to the October edition of our user and developer PDA tips newsletter.

As always, please feel free to submit requests or ideas through the links at the bottom of this page. This is also where you will find subscription and removal information.

Palm related items in our newsletters are marked with this icon . PocketPC/WinCE items are marked with this  one. Since the focus of this issue is on phone-related PDA tips, we are adding a  icon, representing phone-based tools.

Please note: This newsletter contains tips and tools that can alter your PDA. These items are offered here "as is" and without any warranty or support from FO. Please consider them carefully before using or trying them (and as always ... backup, backup, Backup! first).

Thank you,



Bill Shadish, Principal

User Tips

Software

What is WAP?

As we've been saying -- you will increasingly find that the focus of PDAs is shifting towards PDA/phone combinations. It only makes sense to want to carry just one device, rather than two in the form of a "PDA" and a phone. In particular, more attention will be paid towards improving the data capabilities of mobile phones, so that they can grow to compete with the Palm and the PocketPC in overall PDA-ish capabilities.

Given the generally smaller user interface, and lower graphic capabilities of the phone screens, a prime area of new software development lies in phone-based browsers and the related utilities to access the web.

The main non-Microsoft/non-Palm, phone development environment is defined in the Wireless Access Protocol ("WAP"). WAP is basically a definition of how to display information on screen-challenged wireless devices. WAP applications are implemented using the Wireless Markup Language ("WML") and WMLScript. You can think of the WAP/WML relationship as being roughly equivalent to WWW/HTML. Like HTML, WML is a tagged < > language and is structured into "Decks" (blocks of information to be displayed).

Web applications targeting WAP users run into 1979 user interface limitations. The "standard" phone devices use monochrome screens, with text-only displays of 5 lines (and only 32 characters a line). Of course, there have been enhancements on some devices, but developers have to be mindful of the lowest common denominator. This means that many new applications will lean towards running on the minimal device explained above.

If your company is building WAP applications (or you are having them built for you) then it is important to think in terms of these limitations first. If you simply want to find some pertinent tools to use in your WAP-enabled phone, then the following sites provide some things that will help.

WAP ICQ

(<http://www.icq.com/wireless/wap/index.html>)

If you want to add AOL-like ICQ ("I Seek You") features, such as online chat, indication of other online ICQ users, and alerts sent to your WAP-enabled phone, click through to this site. If you would like to download an ICQ manual, [click here](#).

By the way -- here is ICQ for Palm, PocketPC and WinCE.  
(<http://www.icq.com/pda/>)

WinWAP Mobile Internet browser for Windows 

WinWAP mobile internet browser for windows 🌐
(<http://www.winwap.org/index.html>)
WinWAP is for Pocket PC and Windows CE.

MyWirelessPalm 🌐
(<http://www.mywirelesspalm.com/palmwapguide.htm>)
A great deal of information (and available browsers) for setting up WAP on a Palm.

WAP Forums 🌐 🌐 🌐
(<http://www.palowireless.com/wap/forums.asp>)
And to round out our WAP tips, here is a collection of WAP-related online user forums, sharing tips, tricks and development notes about WAP.

What is VFS? 🌐
(<http://www.fo.com/articles/pts-vfs.htm>)
This page is a FO write up on the Palm Virtual File System -- the software that supports the removable media in the Palm M5xx series, as well as in most of the new hardware from the Palm licensees -- such as Sony. The article contains information for users, as well as developer coding references.

Freeware PocketPC 🌐
(<http://www.freewareppc.com>)
Finally, a PocketPC site along the lines of the Palm sites offering primarily freeware; including: Calculators, Clock/Calendar, Database, Financial, Games, Graphics, Multimedia, Utilities, etc. See, in particular, the freeware **PocketToolMan**, which gives you quick access to the PPC taskbar features, such as **Suspend**, which allows you to power-off the Pocket PC without having to press the Power button; **Soft Reset** which performs soft reset; **Hard Reset**, which resets the PPC to factory fresh state; the ability to jump to control panel settings, and a lot more.

Where PocketPC meets Wireless 🌐
(<http://www.ppcw.net/>)
Columns on wireless topics with respect to PPCs, plenty of reviews, and a solid bias towards the PocketPC platform.

Hardware

Palm Smartphone 🌐
(http://www.palminfocenter.com/view_Story.asp?ID=4170)
If you've been wondering When Palm would come up with a nice wireless phone/PDA, along the lines of the Handspring Treo -- then this (finally) appears to be their first step towards that goal.



Palm Smartphone

The most important features of this new device? A 320 by 320 color screen, built-in keyboard and Wireless phone -- although you will have to use a headset with this PDA to make a call. It has no microphone. See the palminfocenter review above for more information.

In related news, Palm recently released the low cost **Zire**. This 99\$USD PDA is geared towards first time users and contains 2MB RAM, a 160 x 160 pixel monochrome screen (without backlight!), a USB HotSync port and a rechargeable battery. The biggest thing questioned in early reviews is a USB (rather than the "universal Palm connector") for hotsyncing.

See (<http://www.palm.com/products/handhelds/zire/>) for more on the Zire.

And finally -- here is a sneak peek at the upcoming bluetooth 1.1 Palm Tungsten T, with a 320x320 color screen and neat sliding middle, which collapses to cover the application buttons (http://www.palminfocenter.com/palm/p_story.asp?ID=4376).

Development Tips Sites with Real Content for Developers

WML Coding
WML is much more strict than HTML. Unlike the way that some browsers are forgiving with errors in HTML code, WAP browsers simply Will Not run WML code with errors in the code. The following simple example gives you a feel for WML code:

```
<?xml version="1.0"?>
<!DOCTYPE wml PUBLIC "-//PHONE.COM//DTD WML 1.3//EN"
"http://www.phone.com/dtd/wml13.dtd" >
```

```

<wml>
  <card title="foDC, Audits 11-27" id="addrbk">
    <p mode="nowrap">

<a href="http://www.fo.com" title="FO.COM" accesskey="1">
FO Data Collector
</a>

Staff <strong>#</strong> <input name="variable"
  title="labell12" type="text"
  value="FO-18" size="4" maxlength="5" tabindex="1"/>
  <select name="addresses" multiple="true">
    <option value="1">Jerome Bettis (jb@football.com)</option>
    <option value="2">Tommy Maddox (tm@football.com)</option>
    <option value="3">Lisa Raho (lisar@fo.com)</option>
    <option value="4">Raju Kunaparaju (info@fo.com)</option>
    <option value="5">Joe Smith (JoeS@funtv.com)</option>

  </select>
  <do type="button" label="Done">
    <prev/>
  </do>
</p>
</card>
</wml>

```

Which displays (on the landscape mode Ericsson):



WAP screen

Useful Development Tools

iDEN - Motorolas' free WAP SDK

(http://idenphones.motorola.com/iden/developer/developer_tools.jsp)
Mobile Application Development Kit.

WAP Design Tips

(<http://www.co-data-serv.net/00000fprun.checkcom/WAP%20Design.htm>)

This page contains a number of useful tips when developing WML pages, including:

- "Set as many default options as possible or code them in the menu to save the user from entering text. Be aware that most WAP browsers are in cellular phones, which don't have a normal keyboard. "
- "URLs should be short and easy to remember, not only because of the limited size of the display but also because of the keyboard on cell phones."
- "Keep important information at the top of all screens."

Openwave

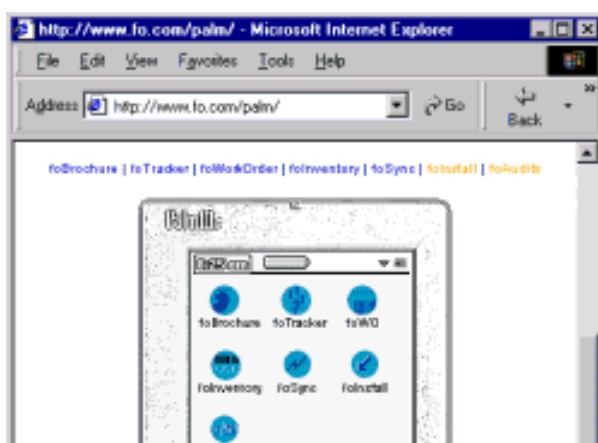
(<http://www.openwave.com/>)

The Openwave SDK mentioned in the sites above.

WAPALIZER

(<http://www.gelon.net/>)

Wapalizer is a well known tool that allows you to test a prospective WAP page within a number of different phone interfaces. These interfaces are provided in emulated (online) environments, representing each type of device.





Wapalizer

What is PACE? 🌐

(at least several of) Palm's next generation PDAs will use the ARM (Intel) processor, rather than the DragonBall (Motorola) processor. This is being done to increase performance, now and in the future. Palms' new operating system OS5 is written to operate on the ARM processor.

Current PalmOS developers have been concerned that pre-existing applications will not run on OS5. The PACE ("Palm Application Compatibility Environment") is a layer that Palm will provide under OS5 to run OS4 (and prior) Motorola instruction-based Palm applications. Due to the increased performance of the ARM -- it is expected that applications from previous versions of the PalmOS will not run appreciably slower within the PACE environment.

A quote from the PalmOS site will "Sort of" make OS4 developers feel a little bit better about the chances of their pre-OS5 apps running on the new OS:

"Existing applications that comply with the documented APIs of Palm OS 4.0, which don't make assumptions about hardware or use unsupported OS structures, and which run under the Palm OS Emulator with debug ROMs, will generally work very well on Palm OS 5 devices. This is possible because of the Palm Application Compatibility Environment (known as PACE) - it interprets the 68k-family instructions of existing applications, and makes them run on the ARM processor."

Useful Development Note for C/C++ developers wanting to test OS5 for OS4 application compatibility 🌐

"A highly recommended way to test for access to unsupported structures is to add

```
"#define DO_NOT_ALLOW_ACCESS_TO_INTERNALS_OF_STRUCTS"
```

before including <PalmOS.h> into .c and .cpp files. This causes the compiler to flag incorrect accesses during compile time. (This is turned on by default in the 4.0 SDK Update.) The Palm OS Emulator version 3.4 and higher, as well as the Palm OS Simulator, also flag incorrect accesses that the compiler might not be able to notice."

PACE References

For more information about PACE, see the following sites:

(http://www.palminfocenter.com/view_Story.asp?ID=3863)

(<http://www.palmos.com/dev/support/docs/palmos5/os5overview.html#pace>)

Palm OS5 Windows "Simulator" (<http://www.palmos.com/dev/tools/simulator/>)

Note: The OS5 Simulator is Not an emulator upgrade. Parts (such as the similarly named ROMs) are not interchangeable.

In the "You May Not of Heard of this one" category... Here is "YOPY"

(<http://www.yopy.com/>)

YOPY is a Strong ARM processor-based PDA, running the (G.Mate) Linux operating system.



YOPY specs:

- o 206 MHz StrongARM SA-1110 32-bit Microprocessor.
- o 3.5" 240 x 320 pixel resolution 16-bit TFT-LCD display.
- o CCFL Back-light.
- o Web browser(Spyglass source license), HTML 4.0, CSS 1.0, JavaScript 1.4, Jscript 3.0, HTTP 1.1.
- o Options: Compact Flash type-II(CF-II) Digital Camera, CF-II Bluetooth Card, CF-II GPS, Memory card, Micro-drive Hard disk.
- o [Other specifications.](#)

Interesting, right? Actually, this "new" pda has been floating into and out of the handheld scene for more than a year; but is now actually shipping.

Linux on an IPAQ?

If that wasn't enough Linux for you, have a look at this page for information on how to use a version of Linux on an IPAQ (in a way TOTALLY unsupported by anyone except linuette). See [Linu@](http://www.linuette.com/start/index.php) (<http://www.linuette.com/start/index.php>)

Reviews of other Linux-based PDAs
(<http://www.mobigeeks.net/e/stories.php?topic=10>)

Latest FO News

Palm Tools



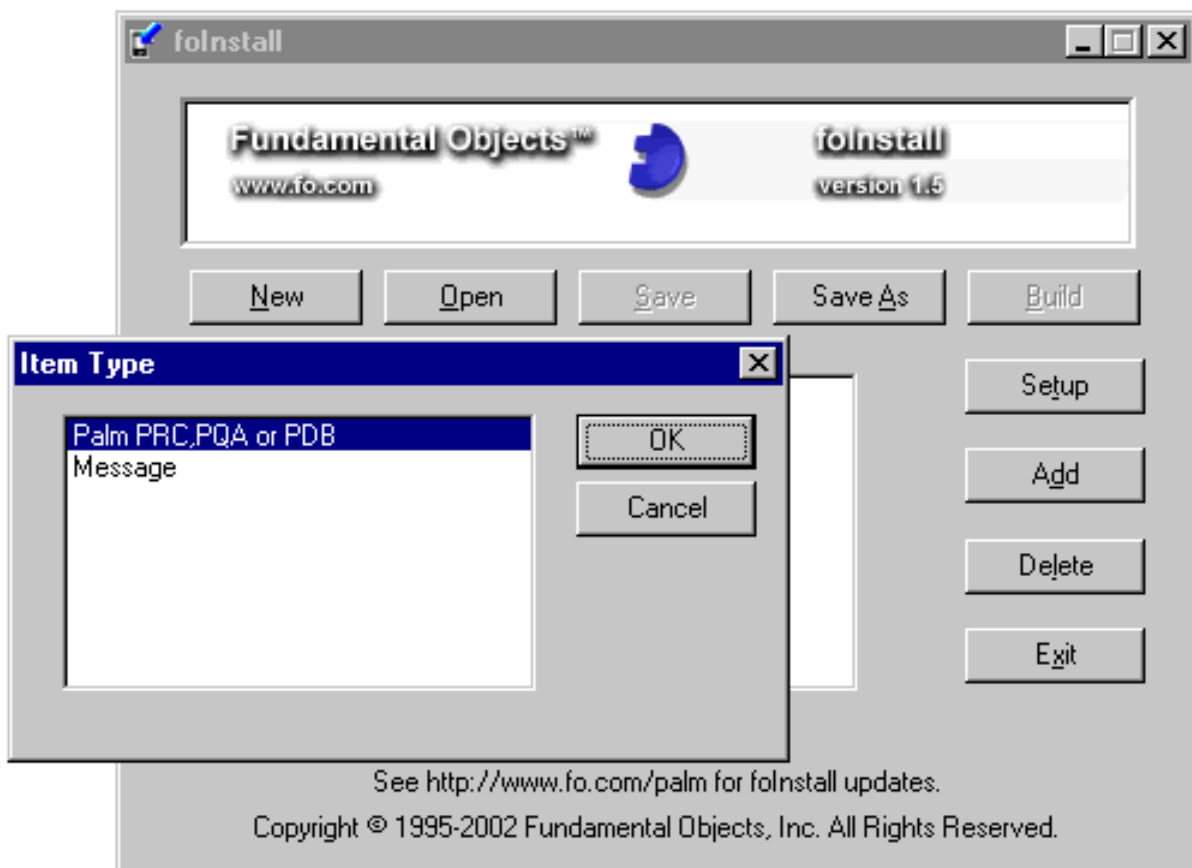
This will probably be the most beneficial piece of our FO-related news for PalmOS users and developers. **foInstall 1.5**, our freeware Palm file installation tool, was released October 16.

foInstall now includes:

- **Reduced setup file size.**
- **Pre install Licensing message.** Requests user acceptance to continue.
- **Post install messages.** For a final "readme" to the user.
- **Long file name support.**

Version 2.0 of foInstall, released October 28th, adds:

- **Support for installing conduits**
- **Password protected** setup executables.
(The user must enter the password to install the files).
- **Customizable user interface** allowing you to alter the user interface of the resulting setup.exe (to include your company name and logo).



Click here (<http://www.fo.com/palm/foinstall.htm>) for more information about foInstall.

Reader Tips

After each issue, we receive a number of reader comments, questions and tips regarding handheld development. We would like to share your tips with all of our readers as well.

If you would like to submit a tip for inclusion in our newsletter, please fill out the information below. Your name and email will be shown along with the tip, if it is used in our newsletter.

| | | |
|---------------------------------|----------------------|---|
| Enter your first and last name: | <input type="text"/> | * |
| Enter your email address: | <input type="text"/> | * |
| Company: | <input type="text"/> | |
| Reader Tip: | <input type="text"/> | * |

* = required.

Submit

As a starter, here's a tip that we include with blessings from Michael Kizer (mkizer@csc.com):

"Nippon Telegraph and Telephone of Japan has developed a system which, using the conductivity of human skin, will automatically allow data transfers between two PDA-carrying humans when they shake hands. They claim a transfer rate of 10 megabits per second is possible.

New Scientist Oct-02
(<http://www.newscientist.com/news/news.jsp?id=ns99992891>)

I guess beaming will still be popular among those with Chiraptophobia...
(that is the fear of being touched ;-)"

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To **unsubscribe** from this newsletter, [click here](#).

If you would like to suggest topics for us to focus on, we will strive to add content in the direction of the most interest. Choose from the following categories, or add your own, and include this in [your email](#):

Palm Development
Palm User Interface topics (look & feel issues),
Palm User-oriented topics (tips!),
Palm vs. PocketPC issues
<other>

If you have other comments or suggestions, please send us an email with your thoughts by [clicking here](#).

