

Networking and FTP with Resco Explorer

This document describes Resco Explorer 2007, v3.20.

1	INTRODUCTION	2
1.1	Brief overview of the networking alternatives	3
1.2	Other options	3
1.3	Recommended procedure	4
1.4	Disclaimer	4
2	NETWORK CONNECTIONS	5
2.1	Possibilities	5
2.2	BT connection to a PC	6
3	EXPLORER NETWORKING	9
3.1	Networking components	9
3.2	Accessible computers	10
3.3	Network shares	11
3.4	Networking details	12
4	FTP	13
4.1	Implementation details	15
5	TIPS AND TRICKS	16
6	PROBLEMS	17
7	REFERENCES	18

1 Introduction

This manual describes the tools offered by Resco Explorer to access other computers:

- Attaching to the local LAN networks
- Accessing remote LANs via VPN networks
- Working with FTP connections

Each of these tools has its strong and weak points. We'll try to give sufficient description - the final decision is up to the user.

Most of the materials concentrate on the networking. It is because FTP is conceptually simpler: If you have a working network connection (common requirement for all networking alternatives) and somebody gives you FTP server account, it is trivial to make the data transfers. So, let's start with the networks - we'll return to the FTP later.

Explorer networking attaches your PDA to the computer and LAN you are connected to.

Any public drive (or more generally public share) in this LAN can be mounted similarly to a Palm expansion card. You must login as a user of this computer and then can perform all operations this user is allowed to do.

If your PDA can already communicate with a PC, then you should have no problems to mount your PC drives to the Explorer. This means easy sharing of images and documents, making remote backup and dozens of other applications.

On the other hand - if your PDA is isolated from the desktop world, then maybe it's time to give it a try. There are various ways how to realize the connection, easier (WiFi) or more difficult (BT, cable, VPN), but the final result will please you.

As already indicated, networking consists of several steps:

- First you have to build a connection. We shall briefly enumerate various possibilities and give you a detailed procedure for one of the best alternatives - Bluetooth.
- Once you have the connection, you have a fair chance that the rest is just a few easy taps in the Explorer. At least when you connect to Windows and the network admin did not build a wall around your PC. Connecting to Mac/Unix/Linux is possible, too, and you can find plenty of web articles about the subject.

So far we talked about kind of "home connections". However, mainly enterprise users require more - safe access to remote computers.

This is the territory of the VPN (Virtual Private Networks). You will need a product such as Mergic VPN and a consultation with your network admin.

Where are the Treo users in this scheme? They have web connectivity and might logically expect implied advantages. Well, to some extent yes - e.g. they passed the first step towards VPN networks. However, as far the local LAN connection is concerned, the web connectivity is of no help.

Complex picture? Yes, as with each technology. But the result is worth the effort.

1.1 Brief overview of the networking alternatives

Explorer offers two network components:

Network browser enumerates accessible computers and allows for selection and mounting of selected drives. Note that you can bypass the browser and setup the connection manually. In some cases (when the LAN uses non-standard protocols) the manual setup might be the only viable alternative.

Network file manager: Once you mounted a drive, you can do the same file operations as you are used to do on the expansion card; the only limit are the user rights that you received after your PC login.

Here are the main networking alternatives and their brief characteristics:

Local connection

Serves to access local LANs that support needed network protocols (the usual case).

You need working network (TCP) connection between your PDA and local PC. Then you can browse the PC and related LAN and mount selected LAN drives to the Explorer.

Because of the connection locality, security is of no real concern in this case.

Remote connection over VPN

Presents secure connection to a remote network that implements VPN server.

You need any kind of remote tcp connectivity. The two most frequent cases are:

- The same network connection to the local PC as described in the previous case. (With allowed Internet sharing on the PC side.)
- The built-in Treo phone connection.

Then you need to install a VPN client onto your PDA and setup the connection to a VPN server that serves as a gateway to the remote LAN.

Then you can browse the remote LAN and mount selected LAN drives to the Explorer.

1.2 Other options

This is for those who (logically) miss the last option - direct remote connection, i.e. accessing remote computer with fixed IP address that offers public File and Printer Sharing service (sometimes called SMB/CIFS or Windows Networking).

In this case any tcp connection (incl. the phone connection) can be used, hence it looks like an easy attractive option. (A downside: The Network browser won't work and you have to setup the connections manually.)

BUT:

Exposing TCP channels used by File Sharing to public access presents huge security risk. As it turns out a computer with unprotected Internet interface can be subject of an attack within a few seconds. (If you think it might be an academic debate, read this article http://news.bbc.co.uk/1/hi/programmes/click_online/4423733.stm.)

Summary:

We do not recommend direct remote connection unless you are a network professional who understands all the risks etc. However, in such a case you don't need our help.

This manual does not consider direct remote access as a viable alternative.

1.3 Recommended procedure

1. Read the chapter about the connections and select the one that best suits to your needs. (E.g. Bluetooth) Even if your final goal is the VPN, you may appreciate benefits of the local connection.
2. Realize selected connection and setup Internet sharing on the PC side. You gain thus:
 - An additional transfer mean between PC and PDA, and
 - Non-Treo users gain Internet connectivity (web browsers, news readers etc.)
 - Treo users can use web access via PC, which usually means faster and cheaper Internet connection.

Note that in most cases already these benefits are enough to justify needed effort.

3. Some users might go now for Explorer FTP access as the first alternative for the remote networking.
4. Or try to access local LAN via Explorer. In most cases (see the chapter "Accessible computers") everything will just work - Explorer will show the network drives and you'll be able to mount them as "network cards".
5. Those who want to go for VPN, can continue now with the installation of the selected VPN client, etc.

1.4 Disclaimer

While Resco Explorer tries to do its best to access networks, final success heavily depends on the setup of your network.

Resco is not responsible for any failures in the networking.

We are no network experts and do not provide networking support.

In case of problems try to contact your network administrator - these are the real experts able to provide qualified help.

2 Network Connections

Many Treo users think that because they have Internet connectivity they should be able to connect to networks as well. Indeed, the phone connection is a remote connection and enables access to remote networks, i.e. VPN or FTP.

However, there are also disadvantages:

- Phone connection bypasses local LAN. If you want to connect to the local LAN, you need something else.
- Phone connection may be slow and expensive.

Network connections are about the access to your (corporate or home) LAN or - in a simplified case - to your home PC. It is about accessing folders and files on a computer, reading remote documents, uploading/downloading or doing other file manipulations.

In the ideal case you should be able to work with the remote files similarly as if they were on the local card.

What do you need to make use of such a connection?

1. A physical connection to the network (WiFi, BT, GPRS etc.)
2. You have to setup so-called network connection on your PDA.
3. You need software that makes use of this connection – i.e. Resco Explorer

Let's start with a preview of various possibilities. Then we shall discuss in full detail perhaps the best alternative for those who do not yet have a connection - the Bluetooth.

2.1 Possibilities

1. WiFi connection

This is certainly the easiest possibility - provided your device has built-in WiFi (LifeDrive, TX) and your LAN has WiFi Access point.

In the absence of built-in WiFi you still could use Palm WiFi card (Z72, T3, T5), but then you have to make a compromise - either WiFi or expansion card. A bad choice when we talk about the file management.

Result: You will be able to access the LAN, to which the WiFi Access point is connected to - provided you have needed login/password. (Access point range is some 20-30m.)

2. Bluetooth connection to a PC

Requires PC equipped with a BT adapter.

There are cheap BT USB dongles (around 10-20 USD), that can be simply plugged into the USB port and cover some 10m PDA-PC distance. Installation - mainly on the PC side - can be problematic.

Result: Access to the connected PC and to the computers in the same LAN.

Note that BT connection is discussed in full depth in the next chapter.

3. Virtual Private Networks (VPN)

VPN software provides safe (encrypted) connection between Internet sites.

Most solutions use PPTP (Point-to-point tunneling protocol), which basically encapsulates direct encrypted communication into the normal TCP/IP traffic. The effect is that your PDA becomes a member of a remote LAN with all the rights that you - as a LAN user - have.

Steps to realize VPN connection:

a) Unlike the other forms you can use any form of the tcp connectivity, e.g the built-in phone connection. (Often slow and expensive.)

You can also build a network connection to a PC like in other cases and use tcp connection via PC. (Faster, cheaper.)

b) Check if the remote server supports VPN and which protocol does it offer. There are two basic protocols in use: PPTP and IPSEC.

Based on the protocol get the Palm VPN client: Mergic VPN for PPTP, AnthaVPN for IPSEC.

c) Install VPN client. Since this moment the remote LAN should be accessible via Explorer.

4. Other options

There are really more options how to organize network connection. Physically you can use PDA-PC cable, Infrared or even a modem. Well-known software that might help in building the connection is Softick PPP.

Please see the references chapter for more information on the subject.

2.2 *BT connection to a PC*

If your PC is not equipped with a BT adapter, you have to find one. Visit a computer store or Google for "Bluetooth PC adapter" etc.

There are cheap BT USB dongles covering some 10m PDA-PC distance, but also better (and more expensive) options - Bluetooth access points - that work within much longer range.

2.2.1 Sample Installation: MSI USB Dongle onto W2000

1. Driver installation

Do not plug in the dongle - start by reading the manual and installing the driver. When ready, you should see BT icon in the task bar.

Click this icon and select 'Explore My Bluetooth Places'. You should see your PDA in the BT device list.

Test the opposite visibility and try to send a file from PDA to PC.

Expected result: PDA and PC see each other, but the send operation may fail. (Send will work if you allow respective BT service, in this case "My PIM Item Transfer".)

2. Setup BT services

When you click the BT icon you will be taken through a wizard, where you need to select BT adapter name and allow BT services. The simplest attitude is to allow all. Send will work and also Palm connection setup will be easier

3. Setup Palm connection

We have to do 2 things:

- PC: Enable BT network and setup Internet Connection Sharing
- PDA: Setup network connection

Caveats (let's mention them in advance):

- PC: What is shared is LAN adapter, not the BT adapter!
- PDA: You need connection to LAN, not to the PC!
- Names: Follow some logic. If your PC is called "MyPC", you can use the name "MyPC BT" for its BT adapter, but also for the connection name on the PDA side.

PC side:

Go to 'Explore My Bluetooth Places' (Double click Bluetooth Icon), then select 'My Device' and finally click 'My Network Access' - this is what we are going to setup.

- a) Press Enable button
- b) Press Properties and select type of service 'Allow other devices to access the Internet/LAN via this computer'
- c) Still in Properties press 'Configure Connection Sharing'. Click Local Area Connection > Properties > select tab Sharing and finally select 'Enable Internet Connection Sharing for this connection'

PDA side:

Prefs > Connections > New

Setup the connection as 'Connect to Local Network', 'Via Bluetooth' and select PC as the device. (The pairing ¹ will take place automatically.)

¹ Devices must be "paired", i.e. agree a secret key. PC calls it "PIN code", while the handheld 'passkey'.

4. Setup Network connection

Prefs > Network

Remember currently selected service (e.g. 'Internet GPRS') so that you can eventually return to it.

Open Menu->New or select unused service (Some Palm has fixed number of network services) and set it to use the connection built in the previous step. Do not forget to use an understandable name. (E.g. the name of the PC.)

Leave Network Prefs panel while the new connection is selected. This is what your handheld will use since now.

To return to the previous state change the service selection to the old value.

Remarks:

a) Firewall

If you use firewall, make sure it will not block the communication. I.e. these ports should be allowed:

- Network protocols use ports 139 and 445. Note that you should not have any problem if the PC is (or was) connected to LAN.
- FTP uses the port 21.

E.g. Windows XP has default firewall, settings are available from Local Area Connection properties.

If you suspect firewall problems, then try to switch it off temporarily.

b) Connection problems

Typically BT dongles add a status icon to the Windows task bar.

Problems use to be signaled by flashing red led on the dongle or via the status icon. The correction is often trivial - unplug and plug the dongle.

c) Connection quality vs. network speed

Tcp protocol that carries network packets, will cope with data errors easily: Bad packets are thrown away and must be re-sent.

If you see that the network is very slow, try to improve connection quality - e.g. decrease PC-PDA distance.

d) Multiple connections

You may create a connection to different computers in the LAN. The Treo users had already working network connection - GPRS, CDMA etc.

All these users finish with multiple connections. Switching among them is trivial - Go to Prefs > Network and decide which service will be used.

3 Explorer Networking

3.1 Networking components

Explorer networking refers to the support of the File and Printer Sharing network protocol (called also SMB/CIFS or Windows networking). This is a standard Windows protocol supported also by Unix/Linux and Apple OSX.

Explorer networking consists of two components:

a) Network browser:

The browser discovers neighboring computers and lets you select among their drives (shares). Browser result can be described as

[computer_name, its_IP_address, share_name].

These items are memorized. However, the computer name serves just to validate/refresh stored IP address. (In DHCP networks the IP addresses are temporary.)

What is actually needed to access remote file system is just IP address + share name.

You can bypass network browser altogether if the target computer has fixed IP address. In such case you define the share using direct path, e.g. "\\1.2.3.4\my_share".

The consequence: You can access remote computer and use "non-local" network connection, e.g. GPRS. (Beware of already discussed security risks!)

In some cases it might happen that the browser does not see all computers connected to the LAN. Also in this case you need to bypass the browser and enter the manual path, e.g.

- [\\MyPC\my_share](#), or
- [\\1.2.3.4\my_share](#)

b) Network file manager

Speaking technically the Network file manager is a CIFS(SMB) client. It needs just working tcp connection to an "accessible" computer (that implements needed protocols - see below) and the access rights represented by the login. This is a substantial difference against the browser as the target computer need not be "local".

3.2 Accessible computers

Windows:

All newer Windows versions, i.e. W2000+ (2000, XP, 2003, Vista). Unsupported: NT, W95, W98. (Windows computer must have active "File and Printer Sharing for Microsoft Networks".)

Unix, Linux:

Need Samba 3 installed (maybe Samba v2.xx)

Macintosh OS X:

Supported. (You need to allow Windows Networking in the System Preferences..)

The computer must have tcp connectivity and must be

- Member of the LAN the handheld is connected to, or
- Serve as a VPN server, or
- Have fixed IP address

Network browser further needs proper NetBios version. (NetBios Name Server or WINS are unsupported.)

Distributed file systems are unsupported because of dynamic reconnection needs.

Firewall setup:

You have to ensure that tcp port 445 (or port 139) is open in your firewall.

WARNING:

The Network protocol was never meant to be used directly on the Internet, thus has many weaknesses and security holes. Consequences:

- You should not open these ports on the interface connected directly to the Internet. (Interface is your modem, wifi card, built-in wifi etc).
- You can open these ports on your other interfaces such as Bluetooth. (BT uses additional security measures.)
- You can open these ports if you access the Internet through a router (a separate device) as the router acts as an additional firewall.

3.3 Network shares

So far we talked about the mapping of the remote drives. However, networking uses more general concept - a share.

Network share is typically a folder on particular computer marked for public use and known by a public name.

Special case represent so-called administrative network shares marked usually as c\$ etc. They represent the whole drive and are accessible only by administrators.

Name resolution

Network paths are normally obtained from the Network browser. However, if you want to access computer that is not listed in the browser, you need to enter the connection parameters manually.

The share is accessed through UNC (Universal Naming Convention). The (UNC) syntax is "\\MyPC\share", where

- MyPC is either NetBios computer name or IP address ("1.2.3.4"). Explorer translates symbolic computer name ("MyPC") to the IP address with the help of the NetBios calls.
- Shares are public names of the drives/folders defined by your OS. Administrative shares ("c\$" etc.) are allowed.

Translation computer_name -> ip_address is cached and used as long as it works. On failure (e.g. temporary IP address due to DHCP) a new resolution is attempted.

Setting up shares

We sketch just the basic idea. On the web there are plenty of articles that will explain the procedure for your computer/OS.

Windows creates shares through Windows network component, while Unix, Linux, and Mac systems need Samba to create network shares.

In all cases the purpose is to designate selected folder for remote access and define the users that can use the share and setup the actions they are allowed to do.

Windows:

Run some file manager (e.g. Windows Explorer), find the folder you want to share, then right click on the folder and select Sharing. (Or a similar option.) Next you will have to specify share name and the rights for individual users.

Mac clients:

Enable Windows networking in the System Preferences. (Avail. since Mac OS X 10.2.)

Linux/Unix

You need to have Samba services running. Shares are defined by editing smb.conf file.

3.4 Networking details

Features

- National support (file names): Explorer tries to use Unicode or handheld codepage, (Today servers should support Unicode. If not, the fallback is ASCII mode.)
Corollary: To see the German chars, the user needs a German device, or use Piloc.
- Network browsing: All computers and all public shares in the local LAN are listed, provided the LAN supports needed NetBios version. Note that administrative shares are listed, too, but you will need administrative privileges to access them.
- File attributes are readonly: I.e. the user cannot set file date or attributes or ACLs (Access Control Lists).
- No large file support (>4GB)
- UNIX extensions (case sensitivity etc.) are unsupported. However, Explorer **will** by default preserve the case.
- LAN refers to the topologically simple networks (described by one subnet mask). Explorer does not see behind bridges, routers, etc.

NetBios issues

Symbolic name resolution requires that individual computers reply to the NetBios name inquiry.

- This condition is not fulfilled for a LAN with NetBios Name Server (NBNS), i.e. NBNS is unsupported.
- This particularly means that WINS is unsupported. (WINS - Windows Internet Name Service - is Microsoft NBNS implementation.)

Login security:

Explorer uses highest possible encryption supported by the server during the authentication procedure. I.e. maximum effort is exerted in order to deliver correct login information to the server.

Technically speaking:

- Supported encryption: NTLMv2 + LMv2, NTLM session security v2, NTLM v1. Both SPNEGO and raw NTLMSSP.
- No support for LMv1 or plain-text passwords (way too insecure).

Login can be done only per user (USER mode).

SHARE mode (login per share) is unsupported. It is 1. insecure, 2. unsupported on Windows since W2K

Data security

Explorer applies packet signing (as secure as the server allows). Note that the signing prevents data flow modification. It does not include data encryption, i.e. the data are not secure against reading. If you need encryption, you should go for VPN.

4 FTP

File Transfer Protocol is a standard protocol for exchanging files over TCP/IP networks.

FTP needs just the same as the networking we discussed so far – a network connection. To make it easier, it does not matter whether the connection goes via PC or is phone-based. Perhaps the best option is to have a choice:

- Fast and cheap PC connection to be used when the computer is close to you.
- Phone-based connection for other cases.

Whenever you have this choice, you just need to go to Network Prefs panel and select respective service. (Don't forget to disconnect previously used service.)

FTP communication involves two sides: a server and a client. FTP server listens for client connection requests. Once connected, the client can do file manipulations such as uploads, downloads, rename, delete etc.

Full description of an FTP server account looks like this:

```
ftp.microsoft.com (or its equivalent - the IP address)
user: MyName
password: MyPassword
mode: passive or active (use passive mode wherever possible)
```

Client connection starts with a login, i.e. supplying user name and password. These parameters determine the user rights, i.e. what is the user allowed to do.

Many servers allow so-called anonymous login. Such users have limited access. If you want to use anonymous login with Resco Explorer, leave name/password fields blank.

Resco Explorer implements FTP client. You still need the other side - FTP server.

There exist public FTP servers such as ftp.microsoft.com. Besides they can serve as a data source and for training, their value is limited.

A better alternative, FTP hosting services, usually provide paid FTP space.

What remains is FTP server of your company (many companies have one) or building own FTP server.

FTP problems

- Security: Passwords and file contents are sent in clear text. Data sent is not encrypted either. An exception to the rule is secure FTP login (TLS authentication) that is supported by some servers and that provides at least password security. Explorer is prepared to use this protocol.
- Reliability: Data is as safe as the underlying tcp protocol. (Not bad, but today standards are higher.)
- Reliability: FTP protocol itself does not have any check on the receiver side. However, Explorer implementation is safer due to additional checks.
- Reliability: File transfers may fail if the file is simultaneously modified by another client.

How to build your own FTP server

If you look for this information, use the links in the References section or do the easiest step - Google for "ftp server".

There exist ready FTP servers for each platform and many of them are free - at least for personal use. Newer Windows versions include basic FTP support as part of the IIS (Internet Information Services). Can be enough for personal use, but 3rd party FTP servers provide better support.

While the installation uses to be straightforward, setup may require more work: At the minimum you need to specify the data storage (folders) and users with their access rights.

One problem you will have to solve is the IP address of the FTP server. You can either purchase a fixed IP address (a cheap option) or employ additional software that enables the use of the dynamic IP address. (Basically it takes care that whenever the dynamic address changes, the DNS server gets this information so that the symbolic name of your server always links to the current IP address.)

FTP servers listen by default on port 21 for incoming connections from FTP clients. (Your firewall must allow this port.)

Public FTP hosting services

If you don't have access to an FTP server (and don't want to build your own server), you can go for FTP hosting services. These services provide FTP space on the Internet and are usually paid with the price around \$5/month.

Resco Explorer offers one such service - **www.DriveHQ.com**. Nice thing on the Drive Headquarters offer is the free account with respectable limits: 1GB storage and 1 GB download/month - parameters that are hard to beat.

When you consider such a service, then - besides the price - try to evaluate the safety and reliability of the provider, i.e. check the things such as:

- References, web reviews, how long is the company in the business etc.
- Provided bandwidth and storage space.
- Whether they offer a trial. This is needed - you want to test the compatibility!
- Whether they provide an FTP client for your desktop OS and whether the standard FTP clients (CuteFTP, WS FTP etc.) can be used.

How to find such a service? You can start by Googling for "FTP hosting service". The query will return lots of possibilities, often combined with a more frequent service - "web hosting".

A comparison of selected FTP hosting services is at www.top10ftphosting.com.

4.1 Implementation details

To manage FTP connections use Main menu > FTP Connections dialog. Every new connection added will be represented by a separate tree node under the Network tree branch. If you don't see this branch, then go to General Options and allow network use.

Connection details:

- Explorer supports both passive (preferred) or active modes and does not support transfer resume.
- Explorer uses port 21 (if you don't specify it explicitly).
- If you always work with a nested directory on the server side, then you can specify it directly in the connection string, e.g. ftp.microsoft.com/pub/my_dir

Auxiliary indicators:

- "..." alert appears whenever a single send or receive communication takes too long. If you see the ellipsis for a considerable time, then there is a connection problem or the server is overloaded.
- Another indicator is a network icon that uses to flash in the top right corner. This icon is shown when the server response is expected.

Checking the log:

The log contains complete history of the commands sent and server responses received since the last connect. (The data communication is excluded, of course.)

To display the log, select the ftp node in the tree and tap the info icon.

To clear the log, select another root node in the tree. (This causes a disconnect from the FTP server.)

Analyzing the log:

Sent commands are numbered for easier orientation.

Server responses always start with a numerical code, e.g. the 5xx codes denote a negative reply. (The meaning of the codes can be easily found on the web.)

Comparing log with another FTP client:

In case of problem you may verify the server functionality using independent FTP client. (There are plenty of free desktop clients.) Just pay attention that you setup the connection in the same way. (E.g. the mode parameter.)

You can even compare the logs from both programs and come closer to the problem.

5 Tips and tricks

Checking the network connectivity

Explorer > Control Panel > Network > Ping

- Ping 127.0.0.1 verifies network consistency.
- Ping www.google.com verifies Internet connectivity (tcp).

Blazer represents a more complex method to verify Internet connectivity.

IP address

The IP address is a unique address that identifies Internet devices (computers, servers, PDAs, etc). To find IP address of your PC open the command prompt and type ipconfig. (One of the possible procedures.)

Addresses of the form 192.168.xxx.xxx (or those starting with 10 or 172) are so-called private address, i.e. they are ignored outside your site and the computers with such an address are not visible on the web. Instead, your PC will use for the outside communication a temporary IP address "leased" from the Internet provider. If you never heard it - this is what the so-called DHCP protocol is about.

What can you do with a network file:

You can do complete file management (copy, delete, rename etc.) - as far you have sufficient user rights. Further a few additional actions supported directly by the Explorer:

- Preview images
- Edit text files
- Process zip files. (Zip creating is efficient; editing is possible, but less efficient.)

What can't you do with the network drive:

- Pass the network file as an argument to another application. (Example: Docs To Go won't work with network documents.)

6 Problems

Q: Error "The DNS server address is not setup properly (0x1250)"

Your Palm device cannot use the network's DNS server for translating www name address into the numerical IP address.

Suggestions:

- Wait a bit & repeat; can be a temporary problem.
- Reset and retry; can be a problem in the PDA network layer.
- Verify DNS functionality in another program. E.g. open the address that failed in your browser.
- You can basically open any web address in the browser, such as www.google.com. Just pay attention that the address was not recently used. (In such case the translation is taken from a cache instead of querying DNS server.)
- Another tool for verification is Resco Explorer > Control Panel > Network. Here you can "ping" selected net address. (Supply first part before the first "/".)
- If nothing helps, then read "DNS Servers" in the "Tips and Tricks" chapter; maybe it's time to change your network setup.

Q: Error "nonexistant DNS name (0x123E)"

DNS server was not able to resolve www name address into the numerical IP address.

Suggestions:

- Start by checking the www address: The most probable reason is a typing error.
- Verify www address in your browser.
- Another tool for verification is Resco Explorer > Control Panel > Network. Here you can "ping" selected net address. (Supply first part before the first "/".)
- This error can be caused also by a bug in the network layer.

7 References

VPN connections

- Palm overview of the VPN support <http://www.palm.com/us/wireless/vpn/>
- Beginners Guides: VPNs and Internet Connection Security
<http://www.pcstats.com/articleview.cfm?articleID=608>

BT connection to a PC

- The Geekzone Bluetooth Guides - <http://www.geekzone.co.nz/content.asp?contentid=449>
- Specifically the tutorial "How to share your Internet connection via BT" -
<http://www.geekzone.co.nz/content.asp?contentid=1240>
- Tam Hanna in "Howto: Bluetooth Internet with Windows XP" explains problems with Windows XP SP2. <http://www.palminfocenter.com/news/8567/howto-bluetooth-internet-with-windows-xp/>
(Note that the original m-router download link is dead, hence you have to do a search.)
- PalmZone.net Bluetooth Guide <http://www.palmzone.net/content.php?pid=2>

WiFi/cable connections

- PalmZone.net Wi-Fi Guide <http://www.palmzone.net/content.php?pid=20>
- David A. Desrosiers: Connecting via cable <http://howto.pilot-link.org/ppp/>

FTP

- FTP: For The People
<http://www.webmonkey.com/webmonkey/02/36/index4a.html?tw=authoring>
- FTP 101 - A Beginner's Guide <http://www.ftpplanet.com/ftpresources/basics.htm>
- How to set up an FTP server in Windows 2000
<http://support.microsoft.com/default.aspx?scid=kb;en-us;300662&sd=tech>
- Beginners Guides: Setting up a FTP Server in WinXP
<http://www.pcstats.com/articleview.cfm?articleID=1491>
- Comparison of FTP servers http://en.wikipedia.org/wiki/Comparison_of_FTP_servers