Module contents

- ★ **Upgrading Station Firmware**
- ★ Driver installation - overview
- ★ Installation of Client Manager
- ★ Client station installation
  - ★ ISA adapter installation
  - ★ PCI adapter installation
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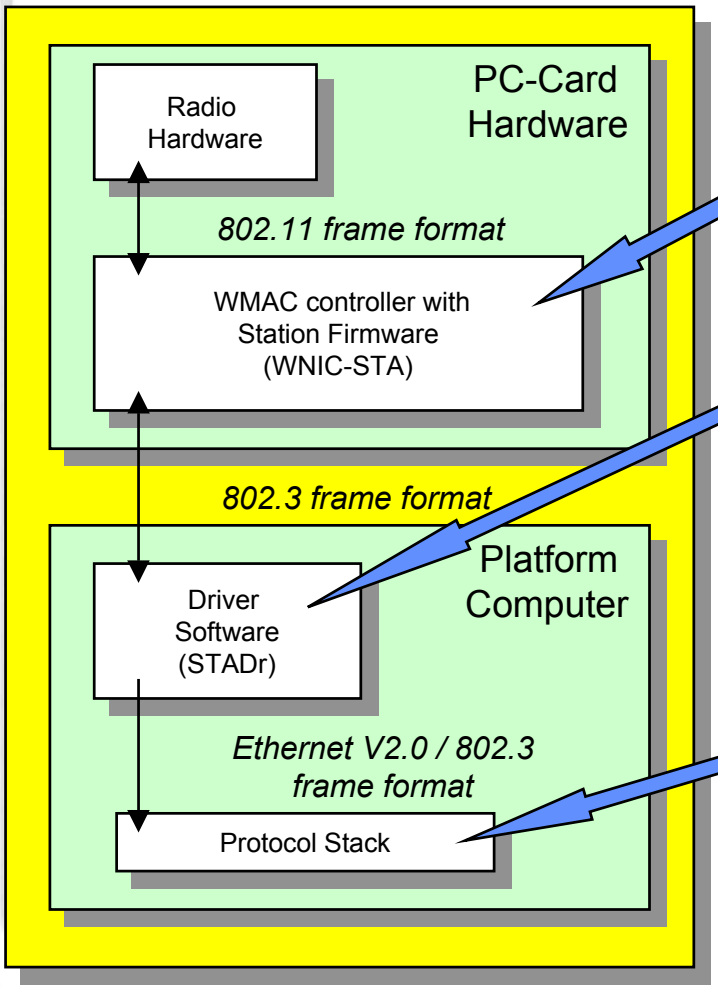
  - ★ USB Client installation
  - ★ PC Card parameter settings
  - ★ Adding protocol stack
- ★ Operating the diagnostic tools

AVAYA communication

Station Architecture



Station Firmware

- IEEE 802.11 MAC functions
- Functionality to be added over time

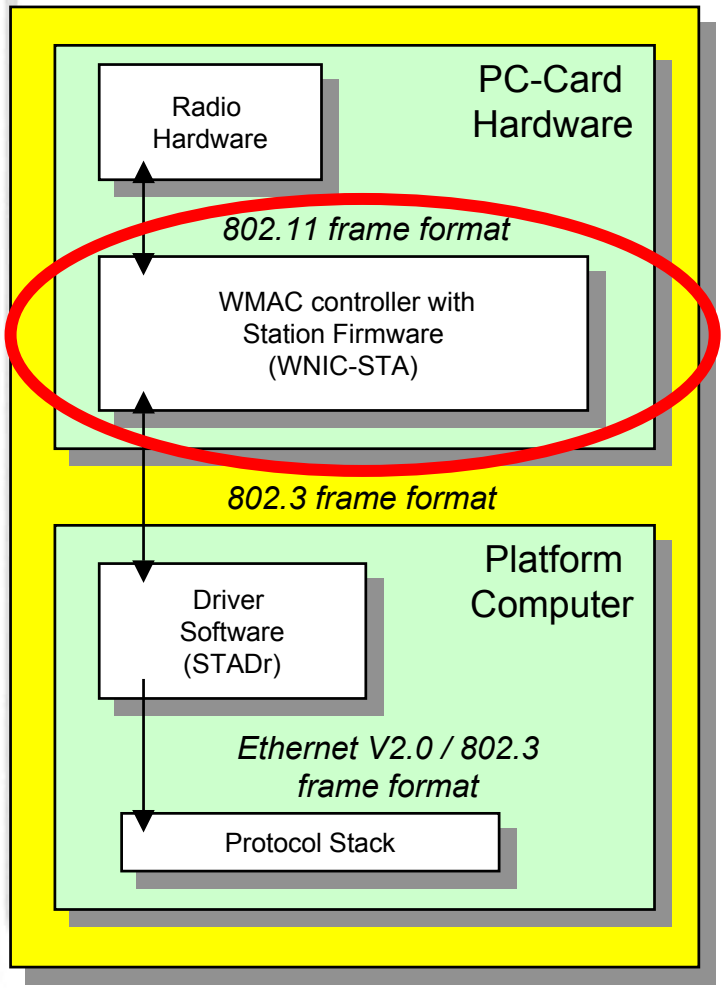
Drivers

- NDIS “Mini-port” driver
- ODI Driver
- DOS Packet Driver
- Apple Power book driver

Protocol Stacks

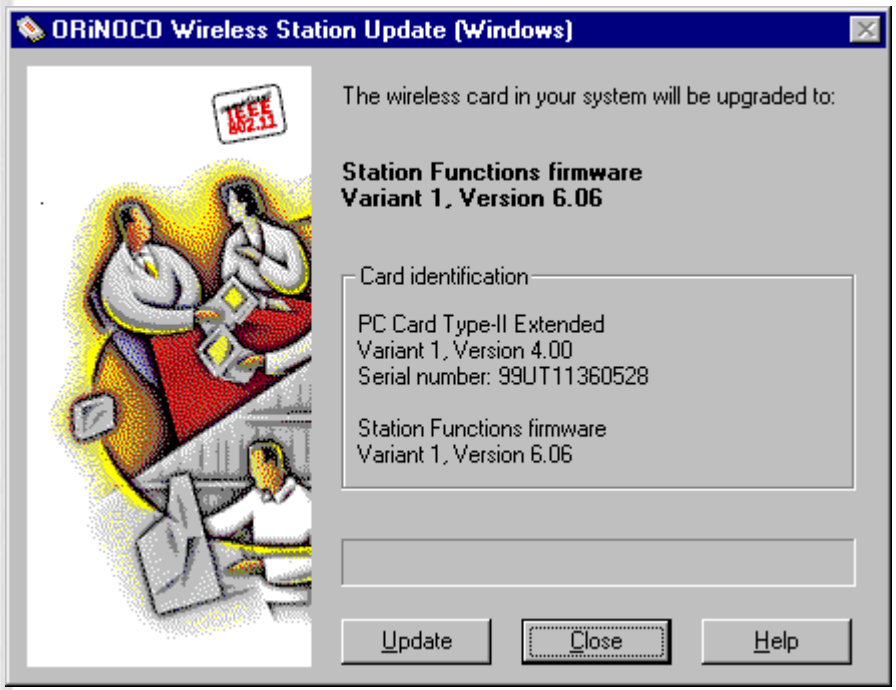
- TCP/IP
- NETBEUI
- IPX/SPX

Upgrading Station Firmware



- ★ Firmware may need to be changed
  - ★ Fixes
  - ★ Improvements
  - ★ Tuning
  - ★ Newly released MAC functions
    - Power Management
    - IBSS
- ★ User can perform update using so-called “WSU” utility
  - ★ Made available via web site, to allow field upgrades
  - ★ Products leaving factory always upgraded to most recent version
  - ★ Downgrading possible if previous version of Utility has been kept

Upgrading Station Firmware



- ★ Download “WSU.EXE” Utility from web-site
- ★ Execute WSU Utility (e.g. double click the Icon in the Windows explorer)
- ★ Network connection will be lost; system may need re-boot, or PC Card may need to be ejected and re-inserted

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AVAYA communication

Driver Installation / configuration

- ★ Windows 95, Windows/NT
  - ★ Install Hardware (ISA card, PCI card, PC Card)
  - ★ PC Card is recognized when inserted
  - ★ Parameters to be changed in Network Neighborhood properties
  - ★ Uses Miniport driver
- ★ NOVELL
  - ★ Uses ODI driver (also used by Windows for Workgroup)
  - ★ Parameters in NET.CFG
- ★ DOS
  - ★ Packet driver

Installation for non- windows based systems

- ★ For example: Novell clients, Windows for Workgroup
- ★ Edit (if needed) configuration and ini files such as:
  - ★ Autoexec.bat
  - ★ Config.sys
  - ★ Net.cfg (for Novell Netware users)
  - ★ protocol.ini (for Windows for Workgroups)
- ★ For details consult the Avaya Wireless PC Card manual or quick installation manual

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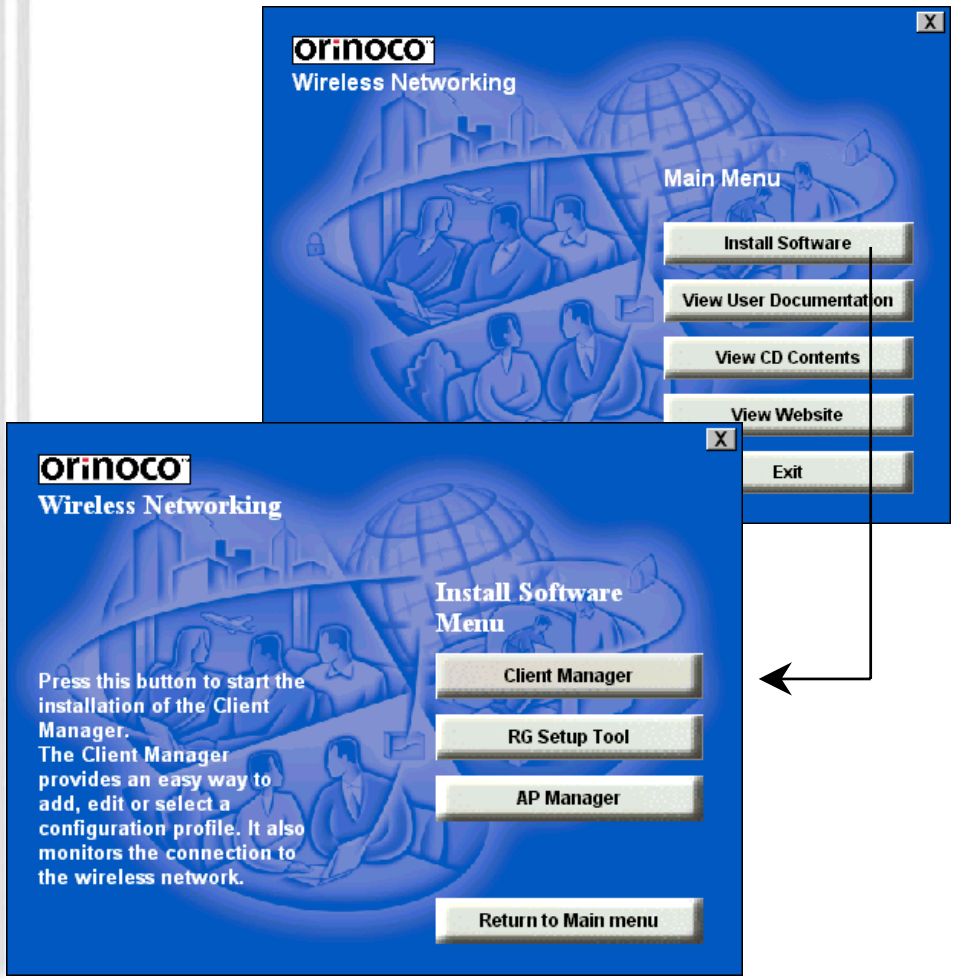
AVAYA communication

Installing the Client Manager

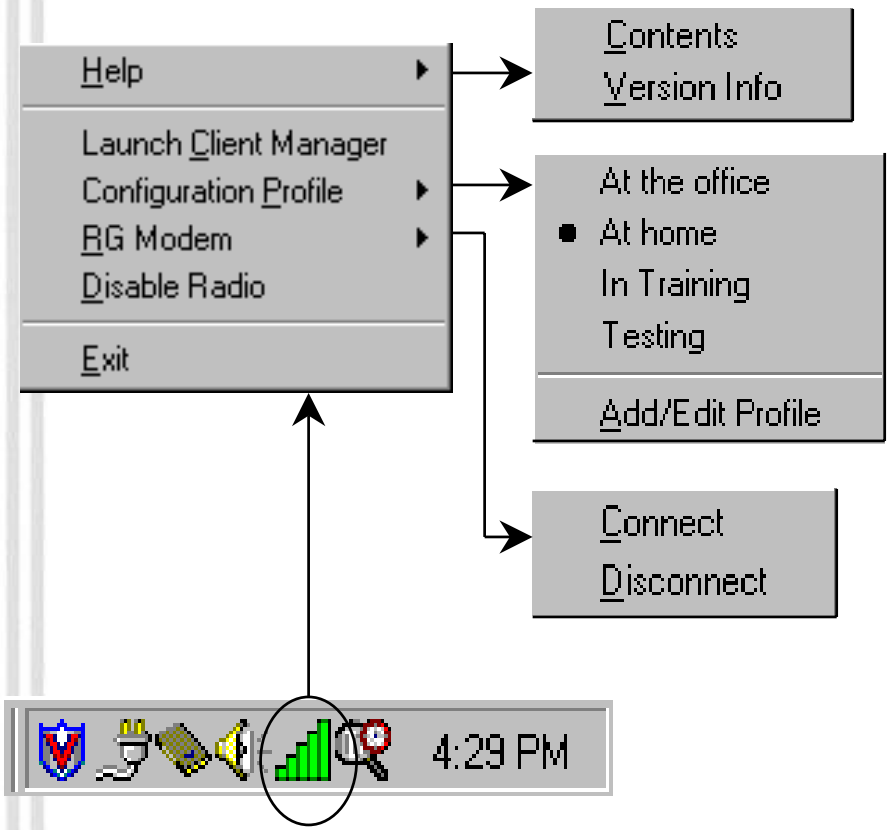


- ★ As of release 6.2 New software will be delivered on CD-ROM using browser to navigate
- ★ CD-ROM contains:
  - ★ Driver software (PC Card, PCI, ISA) for Win 95/98/NT/2000, CE, MSDOS, Linux, MAC
  - ★ Utility software (AP Manager, EC Manager, Client Manager, RG Setup utility)
  - ★ PC Card firmware
- ★ Install Client Manager by selecting the appropriate button

AVAYA communication

Client Manager Icon

(also displays RF status)



- ★ Former CQI (release 6.0) is integrated in the Client Manager.
- ★ When started Client Manager displays itself by Icon on the task bar, indicating RF status:
  - ★ Color
  - ★ Number of columns
- ★ Right-click on icon presents Client Manger menu
  - ★ Starting the client manager
  - ★ Selecting/changing a profile
  - ★ Asking for version data

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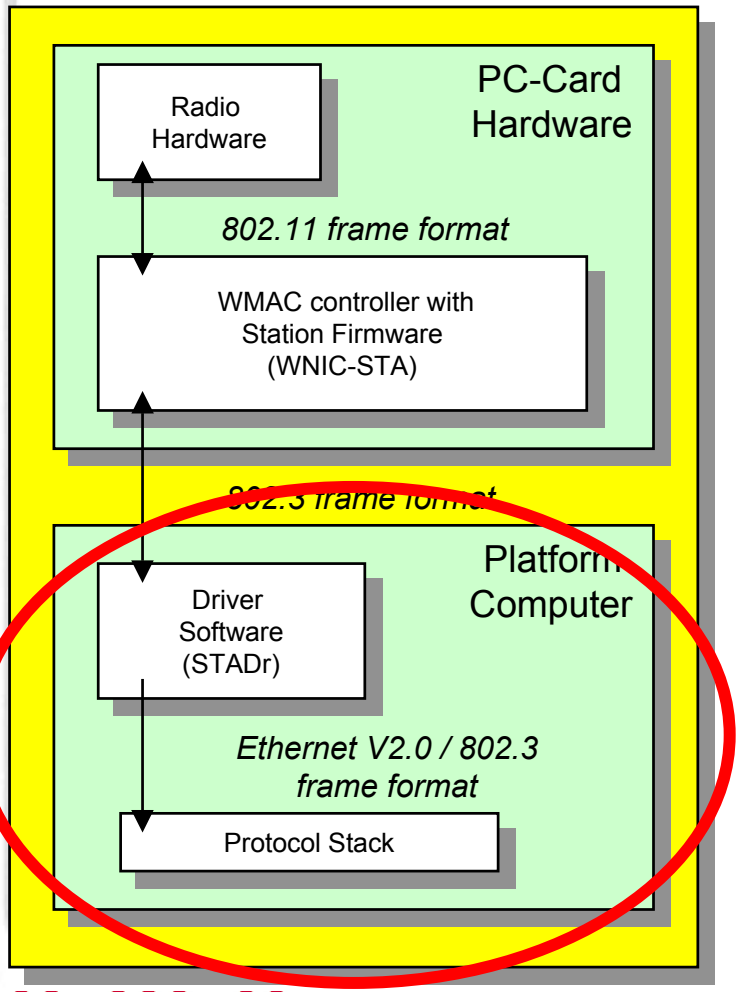
PC Card Installation

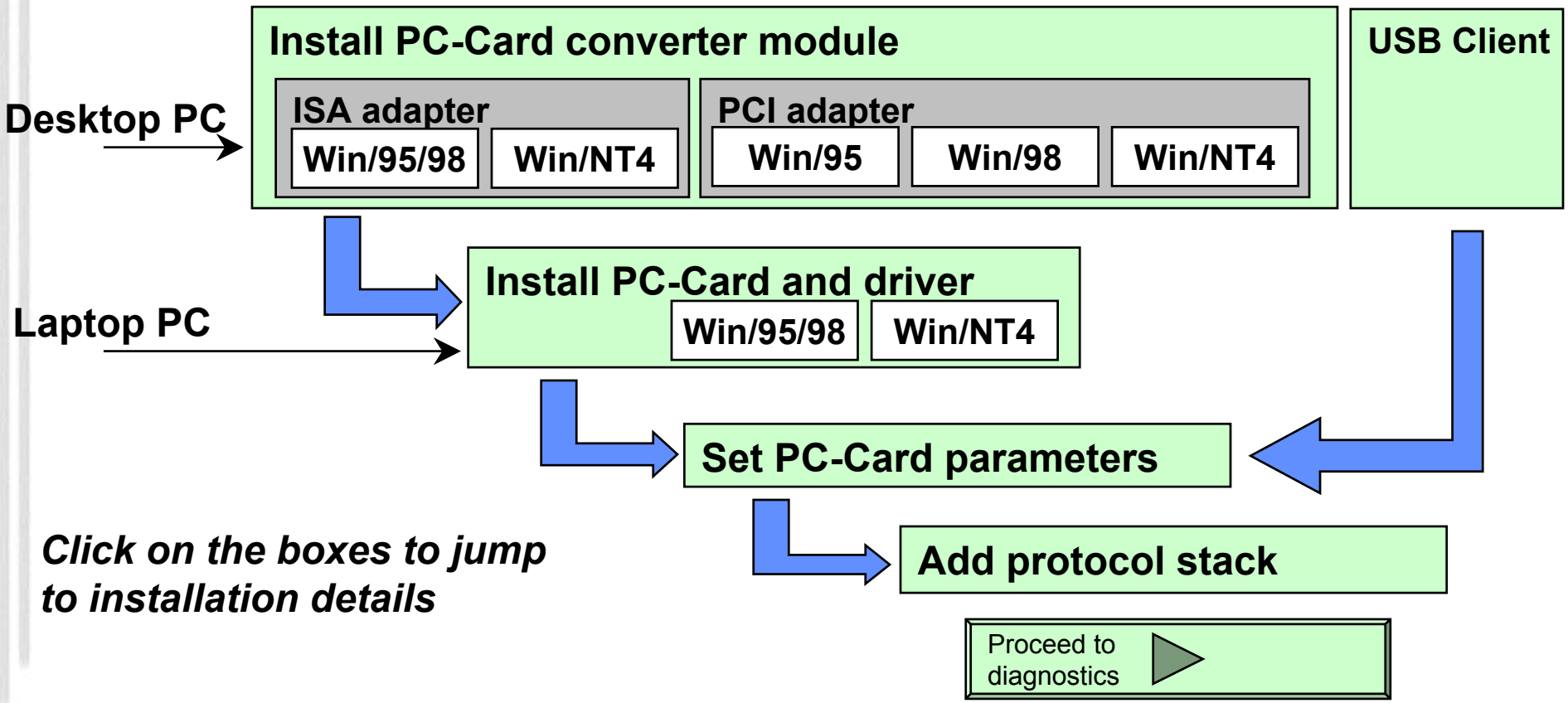
Preparations



- ★ Obtain PC Card Hardware
- ★ Make sure manual is available
- ★ Make sure Windows CAB files are accessible
  - ★ CD-ROM
  - ★ On hard-disk in “options” sub-directory
- ★ Obtain values for advanced parameter from Network administrator:
  - ★ Network name
  - ★ Distance between APs
  - ★ Transmit rate

PC Card Installation

General process



Click on the boxes to jump to installation details

Module contents

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AVAYA communication

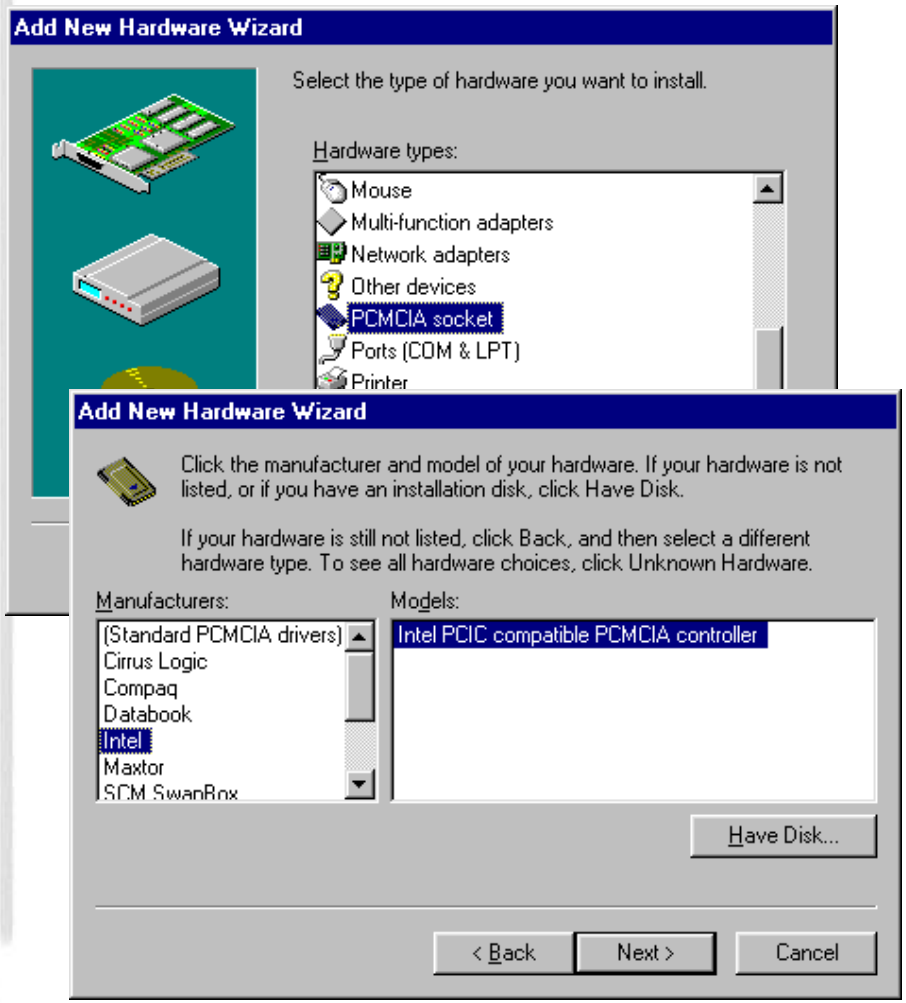
Install ISA adapter

Windows 95/98

- ★ Install the ISA card without the Avaya Wireless PC Card inserted, in an available slot
- ★ The ISA card itself is not “plug and play”
- ★ Activate “Control Panel” and select “Add New Hardware”
- ★ Do not let Windows detect the presence of new hardware but select “no”

Install ISA adapter

Windows 95/98



- ★ In the device list select PCMCIA socket
- ★ From the manufacturers list select Intel
- ★ Select the Intel PCIC compatible PCMCIA controller
- ★ Complete the installation of the ISA card and check the device manager for resource conflicts
- ★ Change board strapping if needed to avoid IO-Base conflict

Return to General Installation Process

Install ISA adapter

Windows NT4

- ★ Install the ISA card without the Avaya Wireless PC Card inserted, in an available slot
- ★ The ISA card itself is not “plug and play”
- ★ Activate “Control Panel” and select “Add New Hardware”

Install ISA adapter

Windows NT4

- ★ Insert ISA Card adapter in your PC
- ★ Introduce ISA Card to the OS of your system
  - ★ Double click “devices”
  - ★ select PCMCIA
  - ★ set startup type “boot”
  - ★ Restart PC

Return to General Installation Process

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- ★ Operating the diagnostic tools

PCI Adapter installation

General considerations

- Requires installation of the “PCI-to-PC Card” converter card (sometimes referred to as “PCI-PCMCIA Bridge” or “PCI Swapbox”)
- Once the PCI Swapbox is installed the Avaya Wireless PC Card can be inserted in the PCMCIA slot (similar to ISA installation)
- Success of installation of the PCI Swapbox depends on:
  - Type of PC Hardware
  - Operating System
  - Version level of BIOS

PCI Adapter installation

Success factors for PCI swapbox installation

- Type of Hardware:
  - New desktops with only PCI slots:
    - no incompatibility issues to be expected (exception for systems that have only PCI slots for reasons of size limitations)
  - Desktops with mixture of PCI and ISA slots:
    - BIOS needs to be of certain level (see below)
- BIOS level:
  - Needs to be PCI version 2.2 compliant
  - List of certified Hardware will be compiled throughout life-cycle based on tests and customer feedback

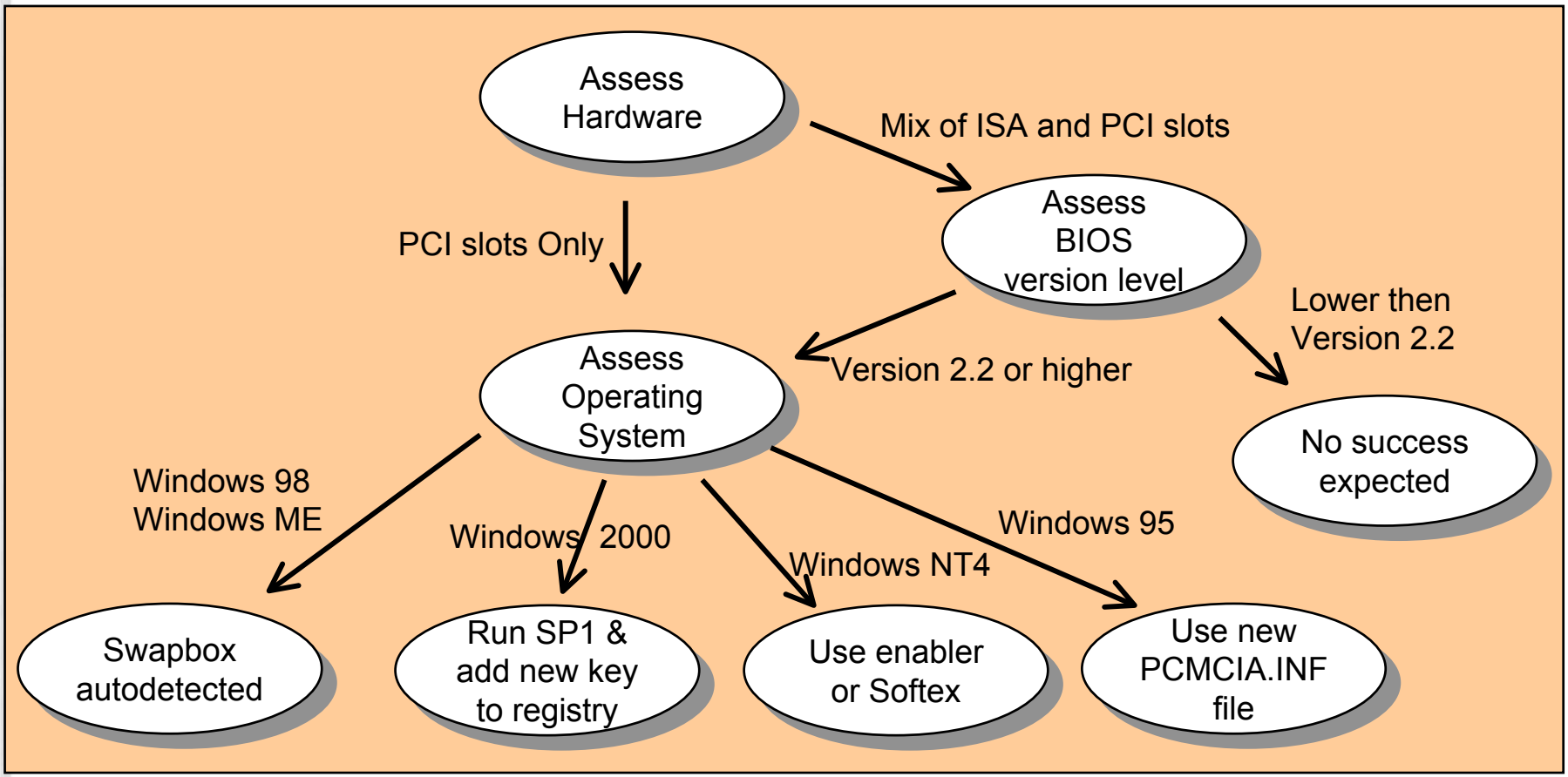
PCI Adapter installation

Success factors for PCI swapbox installation

- Operating system:
  - Windows 98 and Windows ME, will recognize the card and installation is straightforward
  - Windows 95 requires the use of a different PCMCIA.INF file (provided separately by Agere Systems).
  - Windows 2000 requires Service Pack 1 to be installed, plus the addition of an entry in the registry
  - and Windows NT4 require installation of Enabler programs (provided by Agere Systems) or the use of 3rd part software such as Softex

PCI Adapter installation

System assessment chart for PCI Swapbox



PCI Adapter installation

List of PCs that are tested for compliance

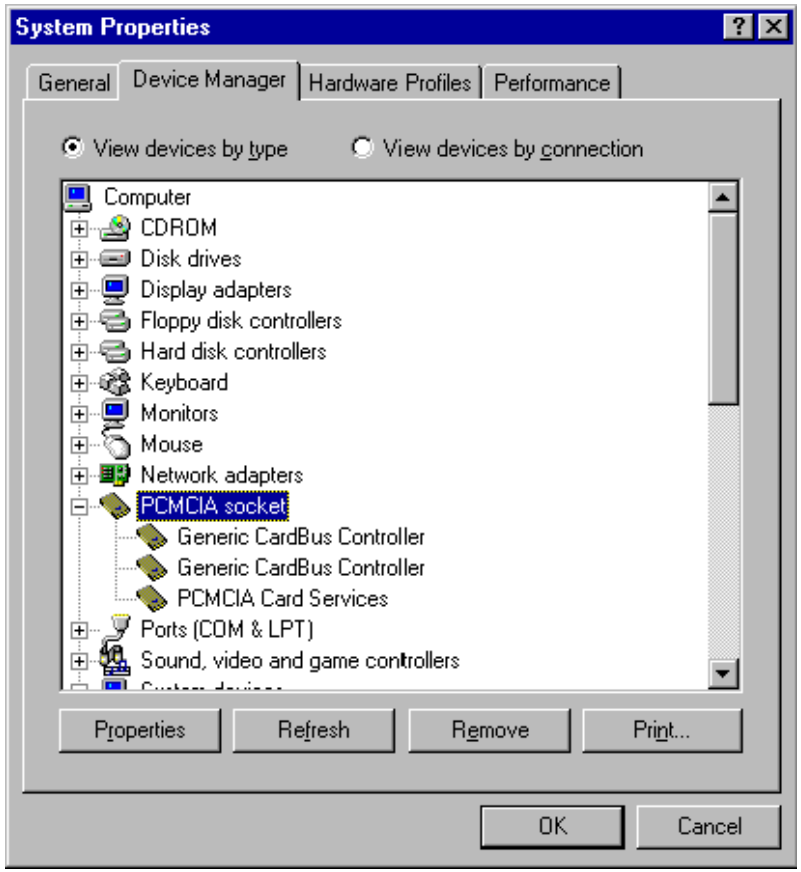
Brand Desktop	PC Model	Operating System
Compaq	Presario 5547	Win 98
Compaq	Presario 5600i	Win 98
Compaq	Deskpro 200	Win 98
Dell	Dimension L 500 C	Win 98/NT4
Dell	Dimension XPS 350	Win 98/NT4
Dell	Dimension XPS 450	Win 98/NT4
Dell	Dimension XPS 500	Win 98/NT4
Dell	Dimension XPS 600	Win 98/NT4
Hitachi	FLORA Prius 330	Win NT4 JP
Fujitsu	FMV-6450CL3	Win NT4 JP
No name (motherboard)	Intel 440 BX	Win 98
No name (motherboard)	Intel 440 GX	Win 98
Siemens Nixdorf	Scenic 800	Win 98
IBM	300PL 6862-340	Win NT4
Fujitsu	Myrica	Win 98
HP	Vectra Vli8 MT	Win NT4
AOpen		Linux 2.2.13

- ★ List of certified PCs is expected to grow
- ★ Readme.txt file will contain up to date list of certified PCs

Return to General Installation Process

PCI Adapter Installation

Windows 98

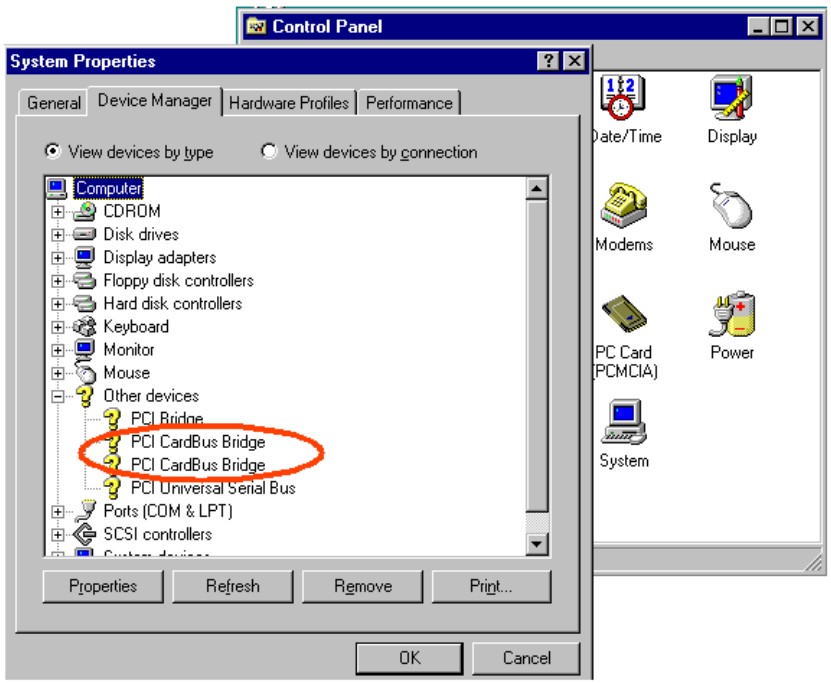


- ★ Install the PCI card without the Avaya Wireless PC Card inserted, in an available slot
- ★ The PCI card itself is “plug and play”
- ★ Windows 98 will detect the adapter and start the installation
- ★ Follow instructions on the screen and re-boot when advised
- ★ Verify the settings in the device Manager (see capture left)

Return to General Installation Process

PCI Adapter Installation

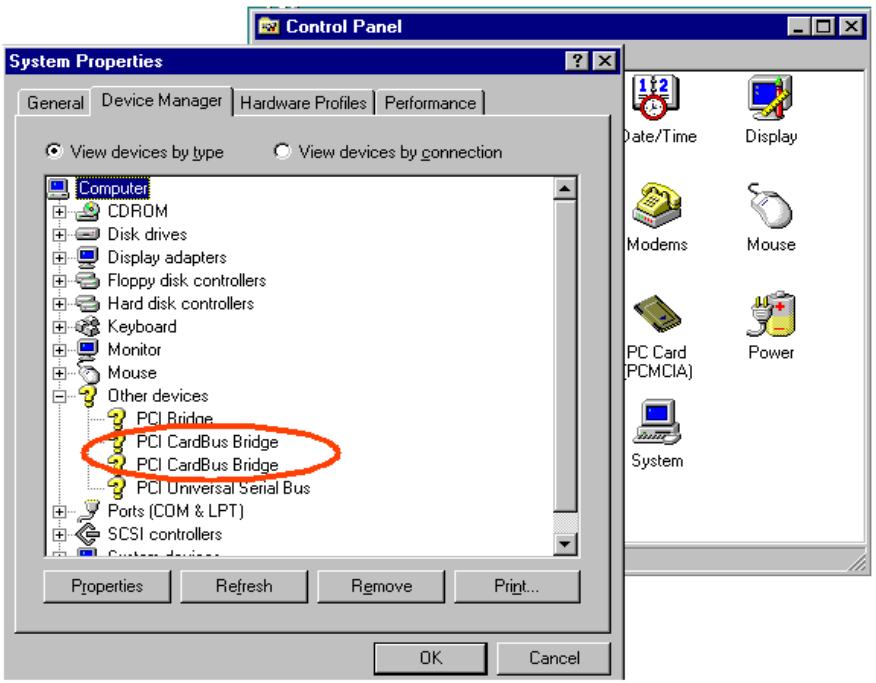
Windows 95



- ★ Install the PCI card without the Avaya Wireless PC Card inserted, in an available slot
- ★ The PCI card itself is “plug and play” and will auto-detect the card, and the driver for the generic PCIC controller is installed
- ★ Copy the file PCMCIA.INF provided by Agere Systems to the sub-directory windows\inf

PCI Adapter Installation

Windows 95



- ★ Reboot the PC
- ★ Proceed to Device Manager, select the PCIC controller and update the driver (Windows will locate the new .INF file)
- ★ Restart the PC
- ★ Windows now installed the correct TI1410 Cardbus controller

Return to General Installation Process

AVAYA communication

PCI Adapter Installation

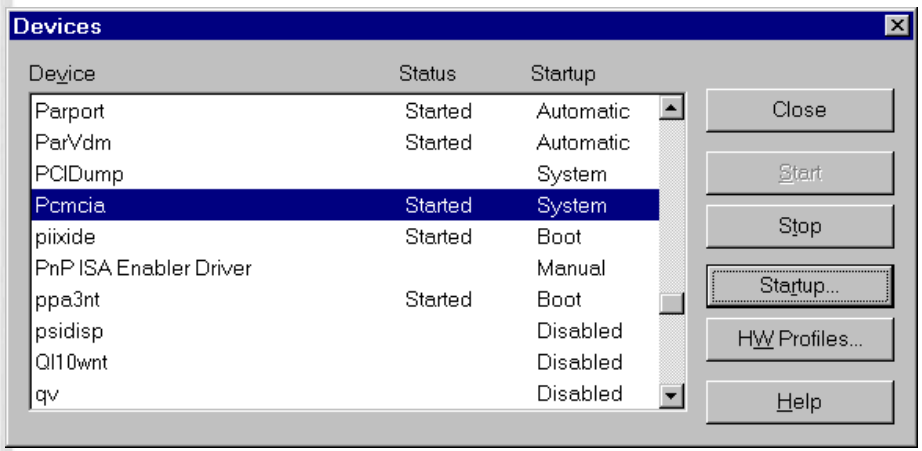
Windows/NT 4.0 - Hardware & PCI-Enabler

- If possible use a 3rd part Card Manager such as Softex.

- Alternatively install the Enabler as provided by Agere Systems:
  - Verify that Service Pack 4.0 is installed
  - Install the PCI card without the Avaya Wireless PC Card inserted, in an available slot
  - Start the system and log in as “Administrator”
  - Insert installation diskette in a the floppy disk drive.
  - Execute the “Setup.exe” program that is on the installation diskette
  - Follow the instructions on the screen and restart the system

PCI Adapter Installation

Windows/NT 4.0 - Card and Socket Services



- ★ On the Control Panel select “Devices”
- ★ From the device list select “PCMCIA”
- ★ Click the “Startup” button on the right side of the list
- ★ Set the Start-up type for the PCMCIA device to “Boot”
- ★ Close the window (select OK) and reboot

Return to General Installation Process

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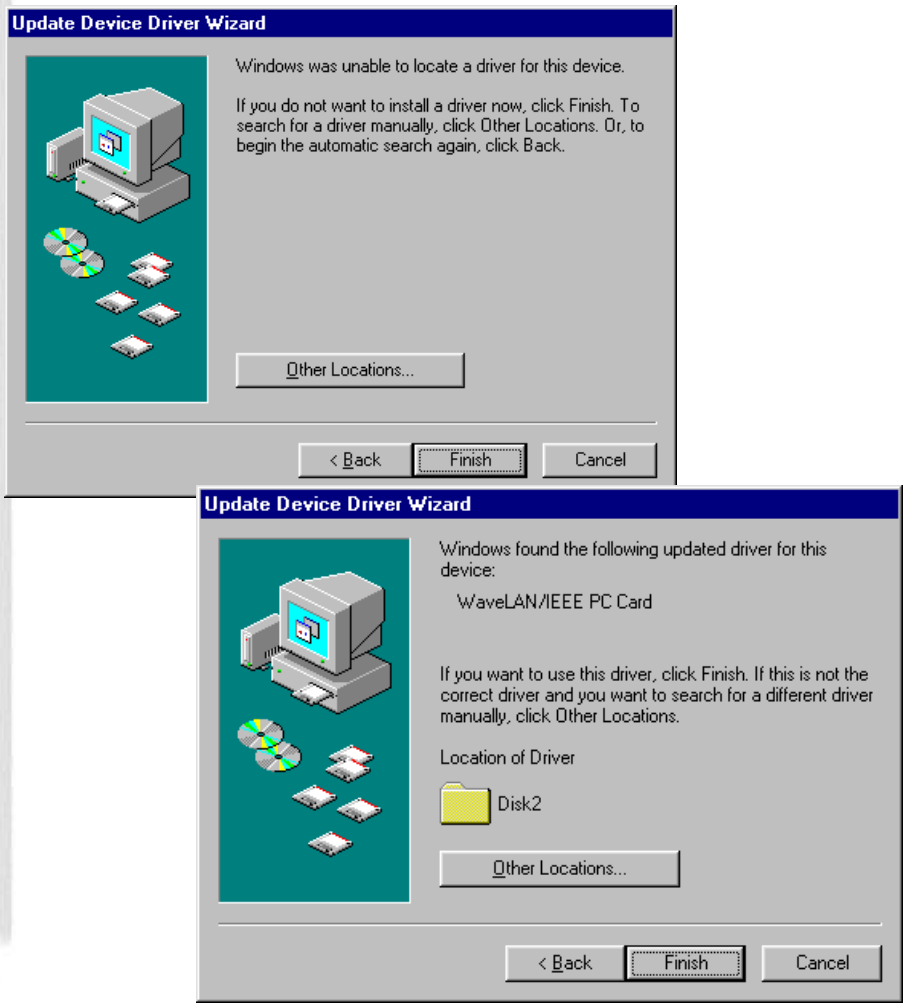
Install PC Card and driver

Windows 95/98

- ★ Remove a previous version of the Avaya Wireless PC Card driver (I.e. older PC Card driver)
  - ★ Remove from network configuration
  - ★ Delete any Avaya Wireless related driver files left in the “System” and “Inf” sub-directories (no longer needed for release 5.0 and higher)
- ★ Insert the Avaya Wireless PC Card in PCMCIA slot
- ★ Switch on PC, if not already switched on
- ★ PC Card is “plug and play”
- ★ Windows 95/98 will report PC Card as new hardware detected.
- ★ If not activate “Control Panel” and select “Add New Hardware”
- ★ Do not prematurely cancel process as an entry for the card is made in the registry before the driver is installed.

Install PC Card and driver

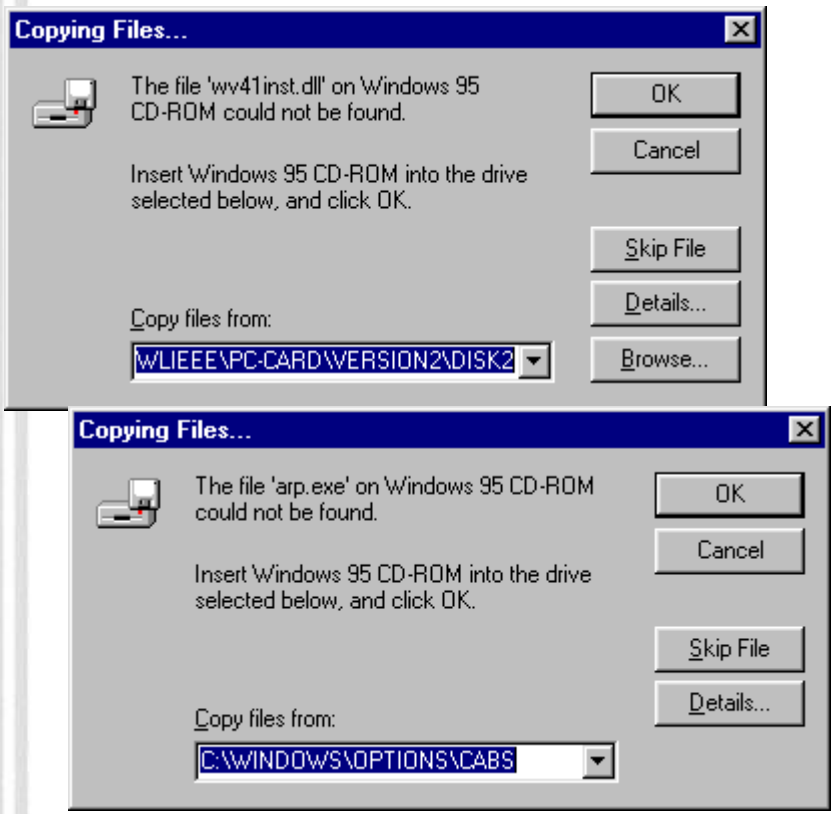
Windows 95/98



- ★ Windows reports detection of PC Card
- ★ Follow instructions on screen
  - ★ When asked for the Avaya Wireless PC Card driver please insert diskette (or CD-ROM) and follow instructions
  - ★ If the driver has been downloaded and stored on disk, browse to the sub-directory on the disk

Install PC Card and driver

Windows 95/98

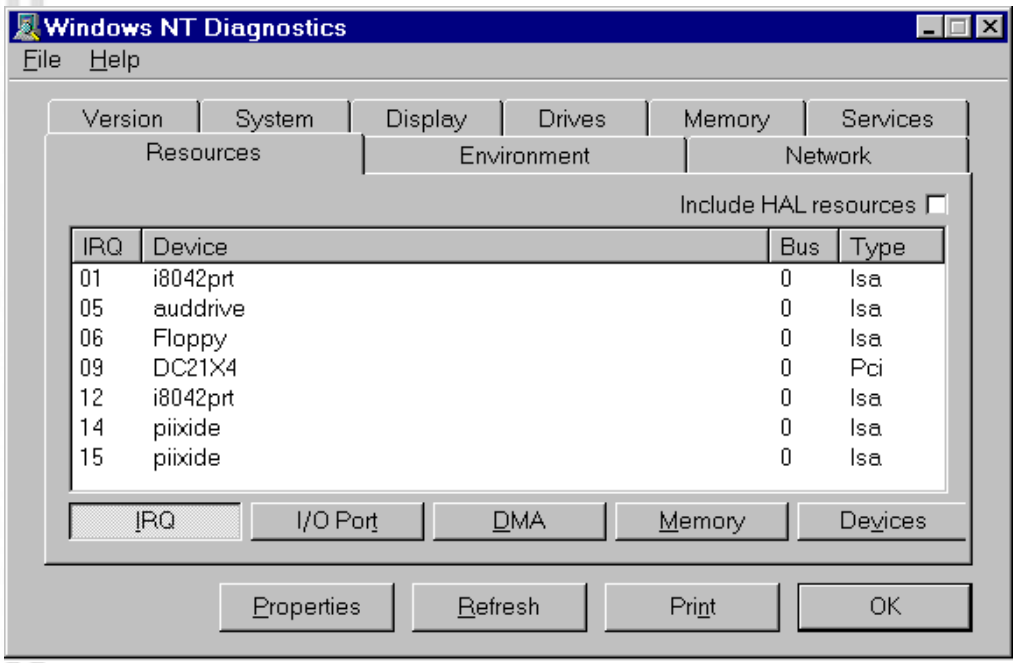


- ★ After driver installation Windows will install network software
- ★ System will ask for CAB files
- ★ Please insert CD ROM or browse to the directory with the CAB files

Return to General Installation Process

Install PC Card and driver

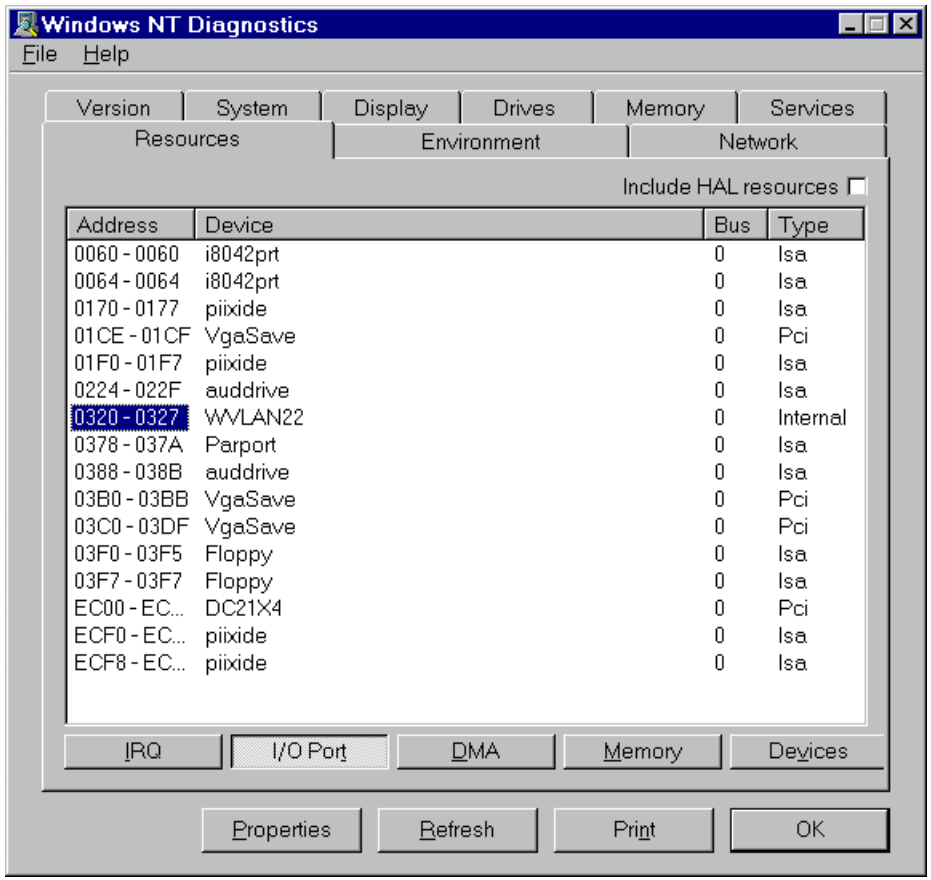
Windows NT4



- ★ Verify IRQ setting
  - ★ Windows NT diagnostics screen
  - ★ Resources screen
  - ★ select IRQ and find free value

Install PC Card and driver

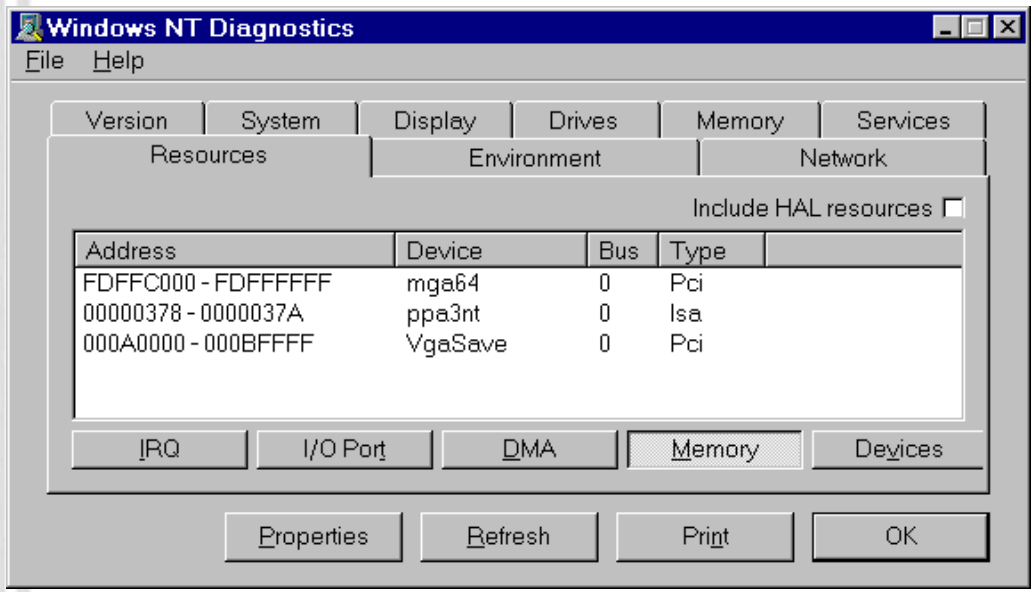
Windows NT4



- ★ Verify I/O port Setting
  - ★ Windows NT diagnostics screen
  - ★ Resources screen
  - ★ select I/O ports and find free value

Install PC Card and driver

Windows NT4



★ Verify PC Card Memory

- ★ Windows NT diagnostics screen
- ★ Resources screen
- ★ select memory and check values
  - Avaya Wireless default 000D8000 - 000D8FFF
  - For alternative values check Avaya Wireless PC Card manual

Install PC Card and driver

Windows NT4

- ★ Insert PC Card in PCMCIA slot
- ★ Switch on PC, if not already on
- ★ System will automatically detect card
  - ★ Follow instruction
- ★ If system does not detect the card
  - ★ select control panel
  - ★ select devices
  - ★ follow instructions as above

AVAYA communication

Install PC Card and driver

Windows NT4

- ★ Windows reports detection of PC Card
- ★ Follow instructions on screen
  - ★ When asked for the Avaya Wireless driver please insert diskette and follow instruction
  - ★ If the driver has been downloaded and stored on disk, browse to the sub-directory on the disk

Note: when installing newer version of the driver assure to remove the old driver files from the "windows/system sub-directory" to assure that Windows selects the new driver and not the old one (see readme.txt file)

Return to General Installation Process

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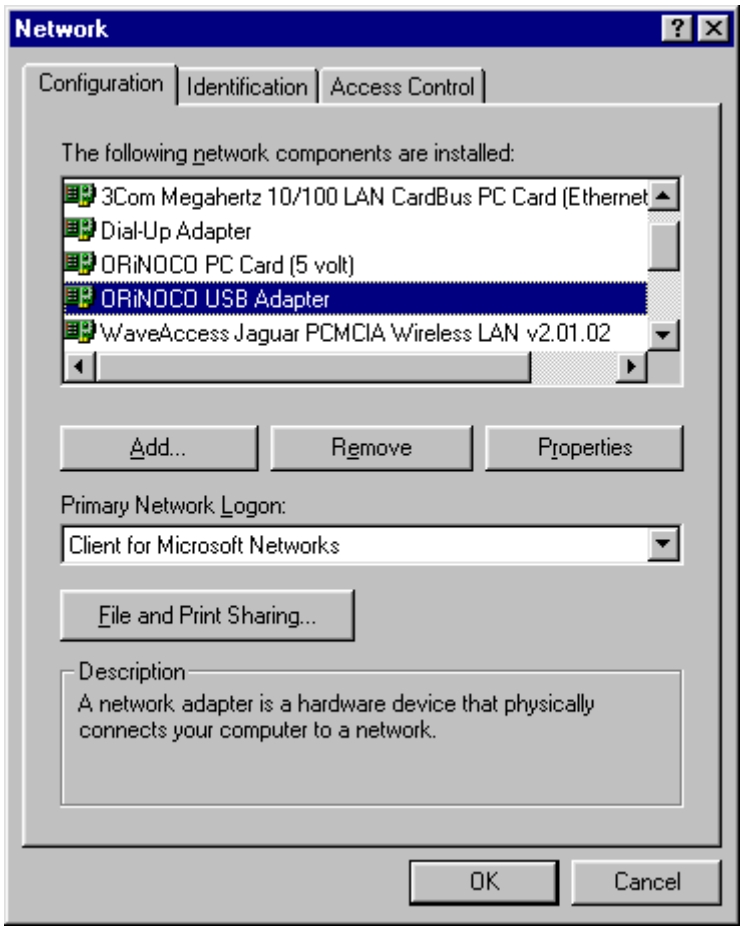
Avaya Wireless USB Client

- ★ Have the USB Client Driver software accessible by the OS
- ★ Connect the Avaya Wireless USB Client to the PC
- ★ Windows will detect the Avaya Wireless USB Client as new hardware and start its wizard
- ★ Alternatively select Add New hardware from the Control Panel
- ★ Direct the wizard to the location of the driver files

Avaya Wireless USB Client



- ★ Follow the instructions on the screen:
  - ★ Provide the requested driver parameters
  - ★ Restart the computer if requested
- ★ After Installation USB Client is available in the network configuration

Return to General Installation Process

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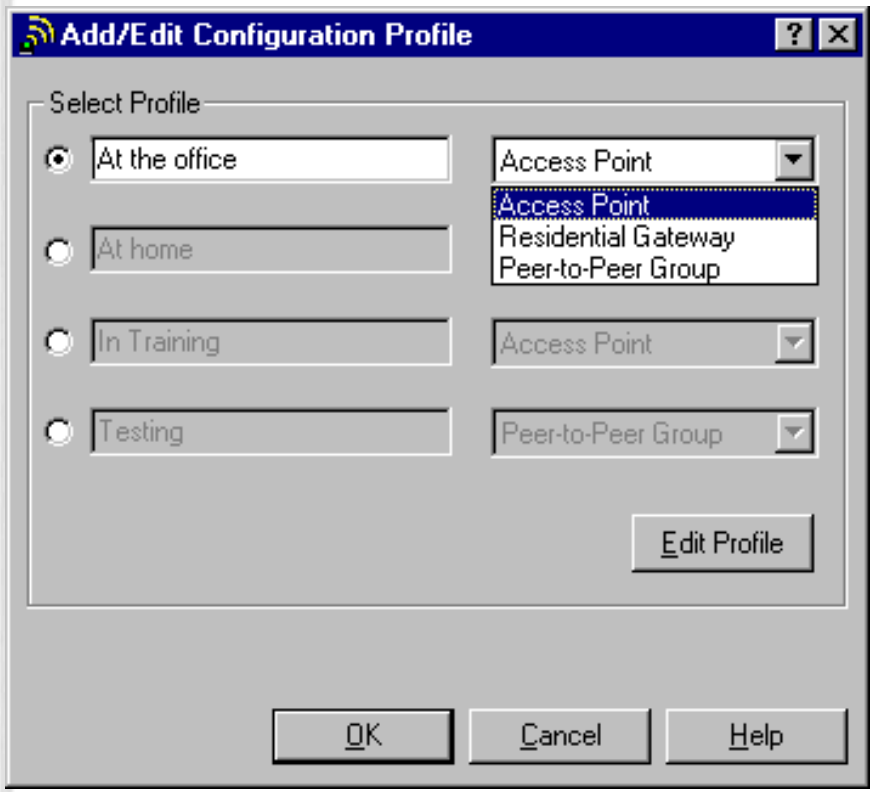
AVAYA communication

Set PC Card parameters

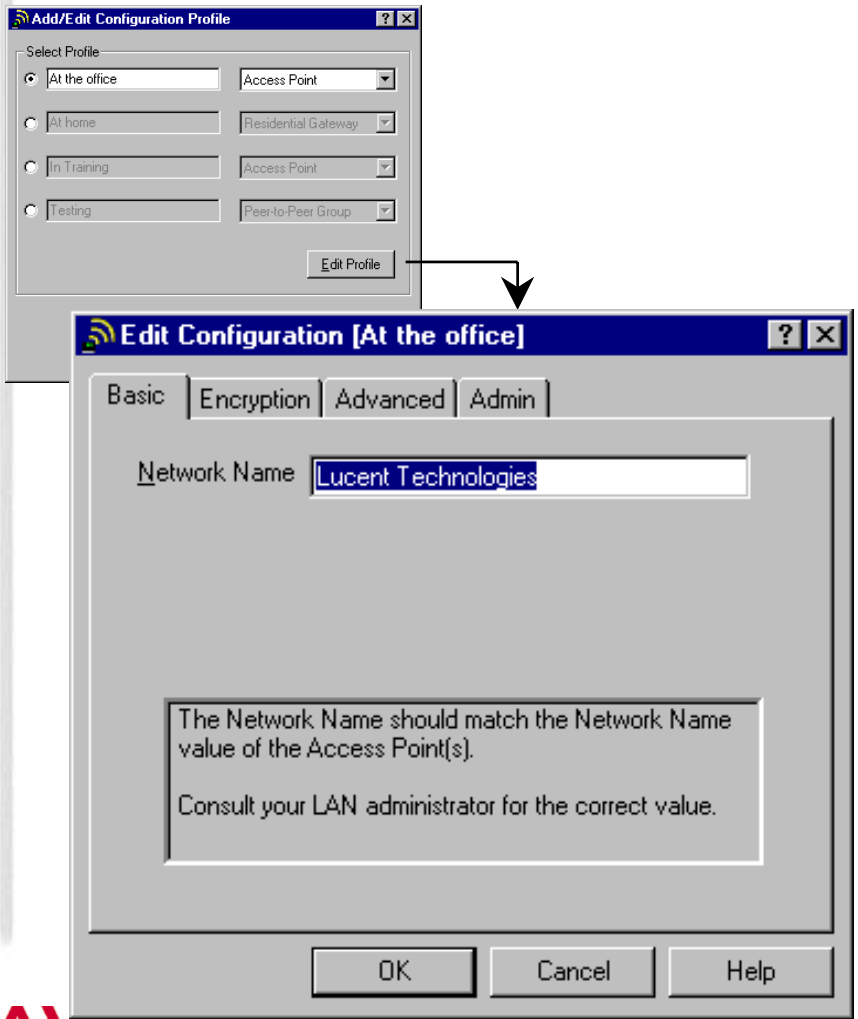
Profiles



- ★ Up to four driver profiles can be defined each having their profile specific parameters
- ★ Activating a profile is done by clicking the associated button
- ★ Three basic modes of operation:
  - ★ Access Point
  - ★ Residential Gateway
  - ★ Peer-to-Peer (IBSS)
- ★ Switching between profiles is dynamic (no re-boot required)

Set PC Card parameters

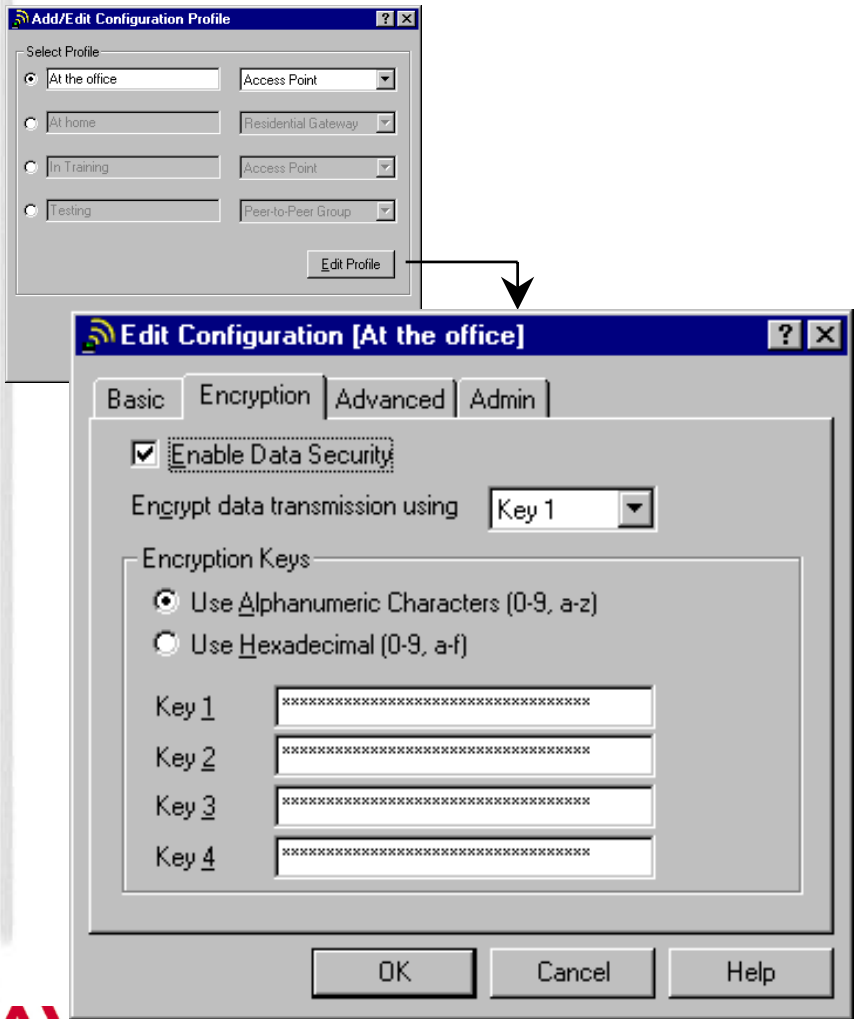
Basic



- ★ Network name (SSID) needs to be the same for all AP's that make out the network
- ★ If "ANY" is entered, station will associate to the AP with best communications link, if that AP is not "closed"

Set PC Card parameters

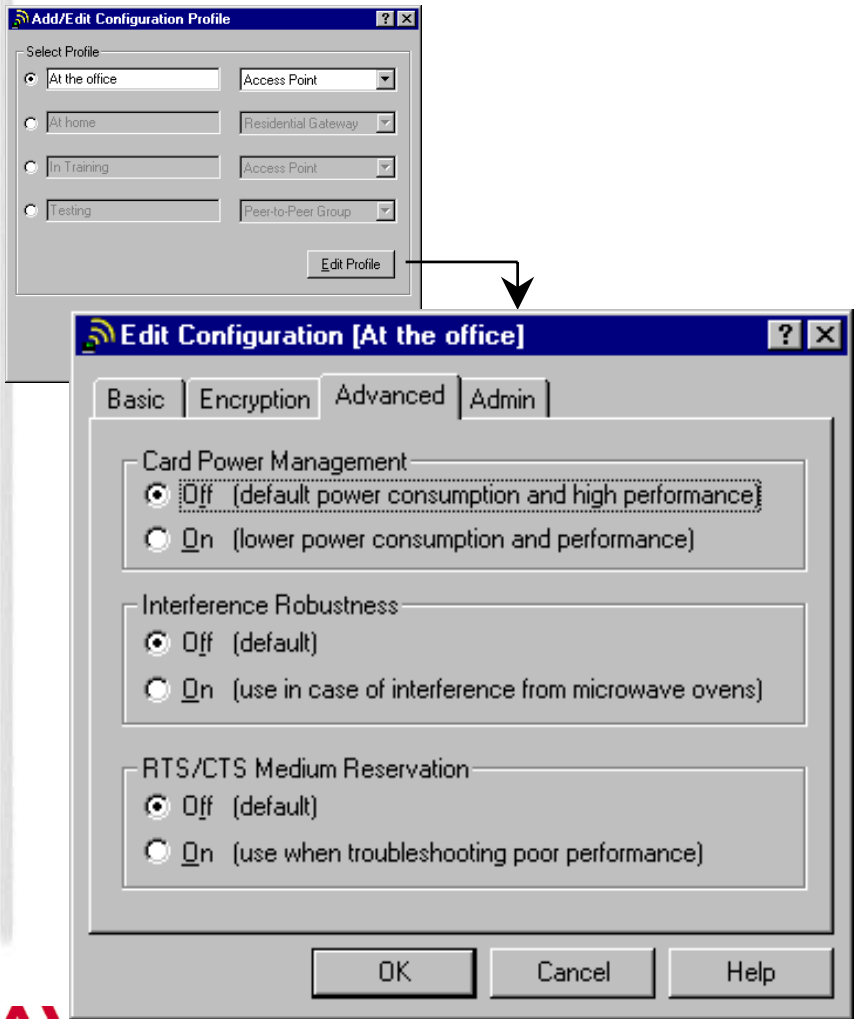
Encryption



- ★ Enable/disable WEP encryption using tick box
- ★ Identify up to four WEP keys:
  - ★ ASCII string
    - Max. 5 characters for Silver Cards
    - Max 13 characters for Gold Cards
  - ★ Hexadecimal string
    - Max 10 characters for Silver Cards
    - Max 26 characters for Gold Cards
- ★ Identify the transmit key by selecting it from the drop-down list

Set PC Card parameters

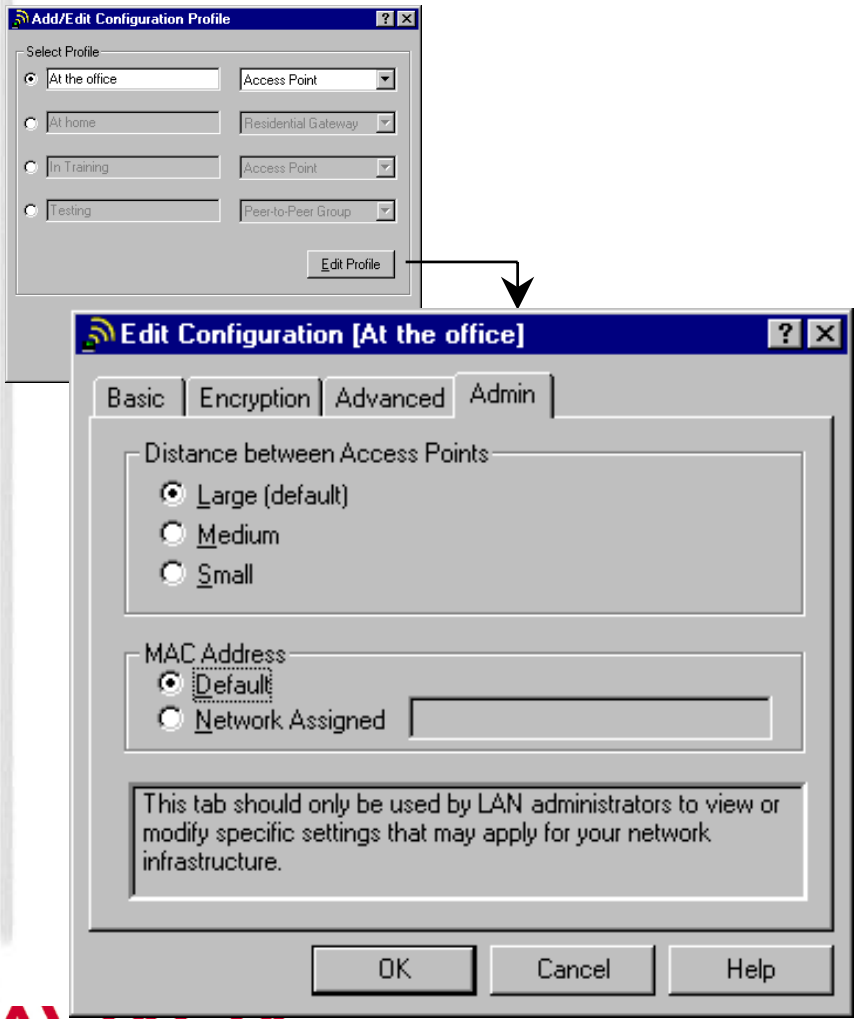
Advanced



- ★ Enable/disable Card Power Management, by selecting the appropriate radio button
- ★ Enable/disable Interference Robustness (Microwave Robustness), by selecting the appropriate radio button
- ★ Enable Medium reservation (RTS/CTS), by selecting the appropriate radio button (has to match setting in the AP)

Set PC Card parameters

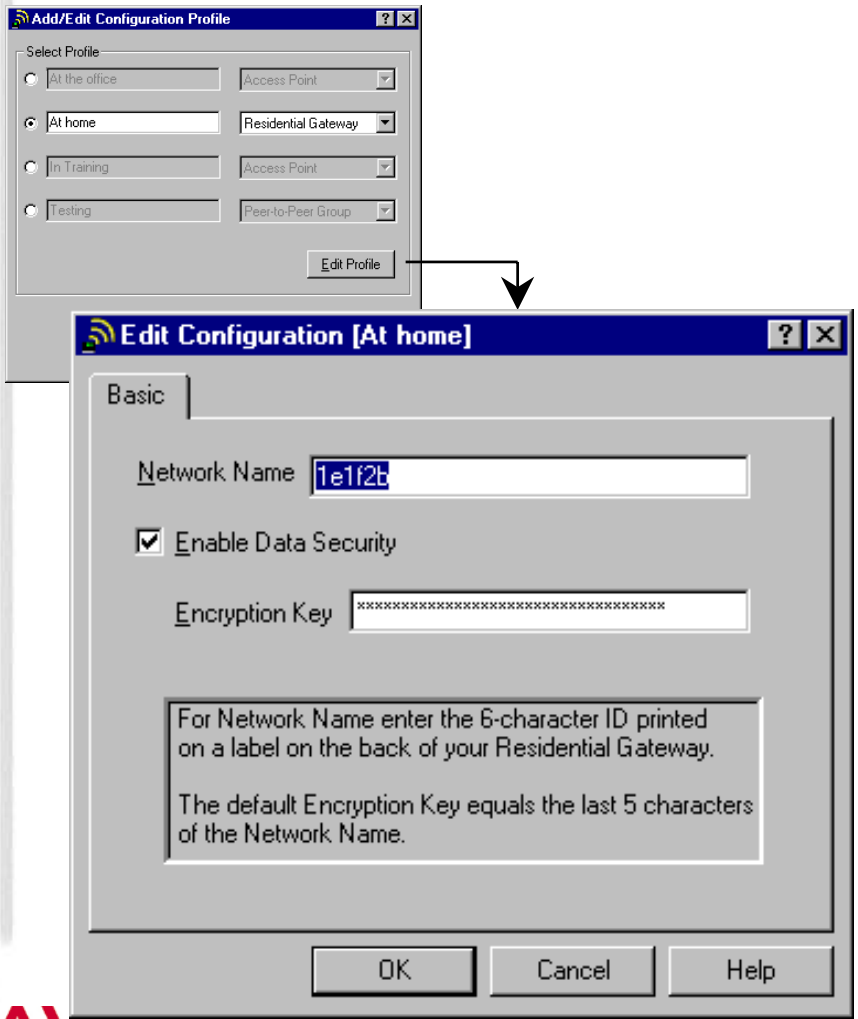
Admin



- ★ Distance between Access Points:
  - ★ large for low bandwidth requirement
  - ★ small for high bandwidth requirement
  - ★ Parameters needs to match the setting on the APs
- ★ Select factory installed (default) MAC address or user assigned

Parameter settings for RG mode

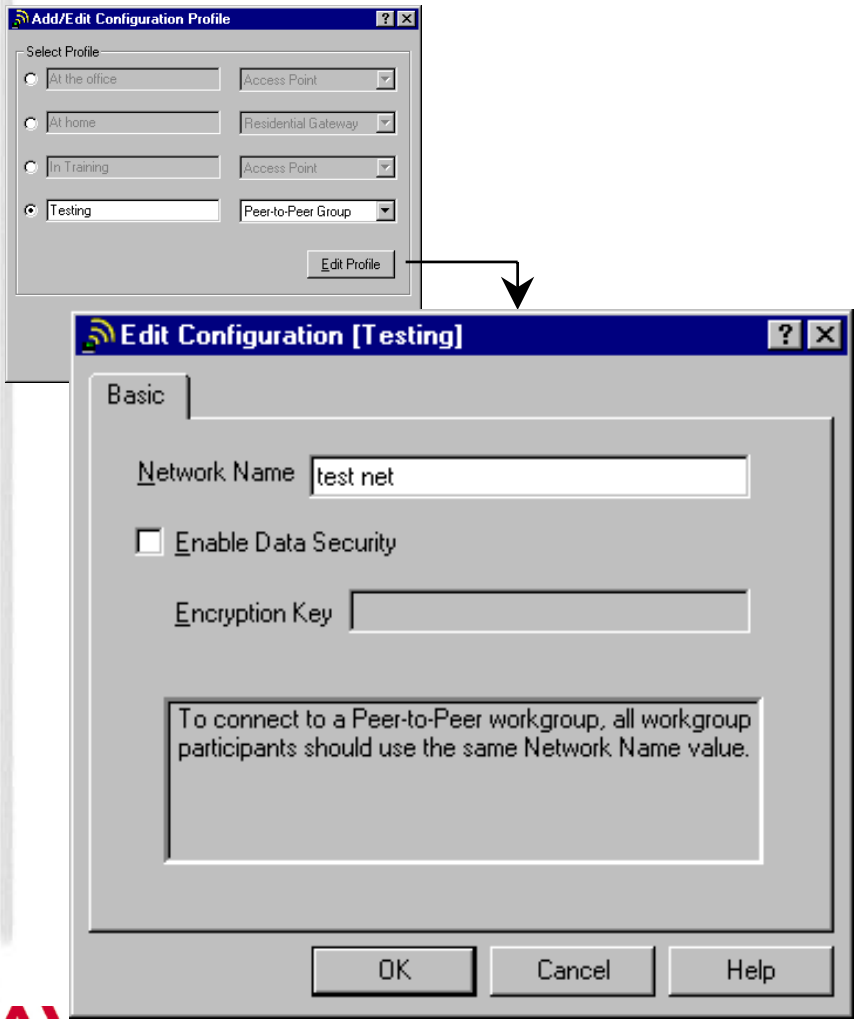
Basic



- ★ For Residential Gateway profiles just one tab is present:
- ★ Network name (ID on the back of the RG-1000); pre-set in the RG-1000, cannot be altered
- ★ Encryption key (default being the last 5 digits of the ID); can be altered on the RG-1000

Parameter settings for IBSS mode

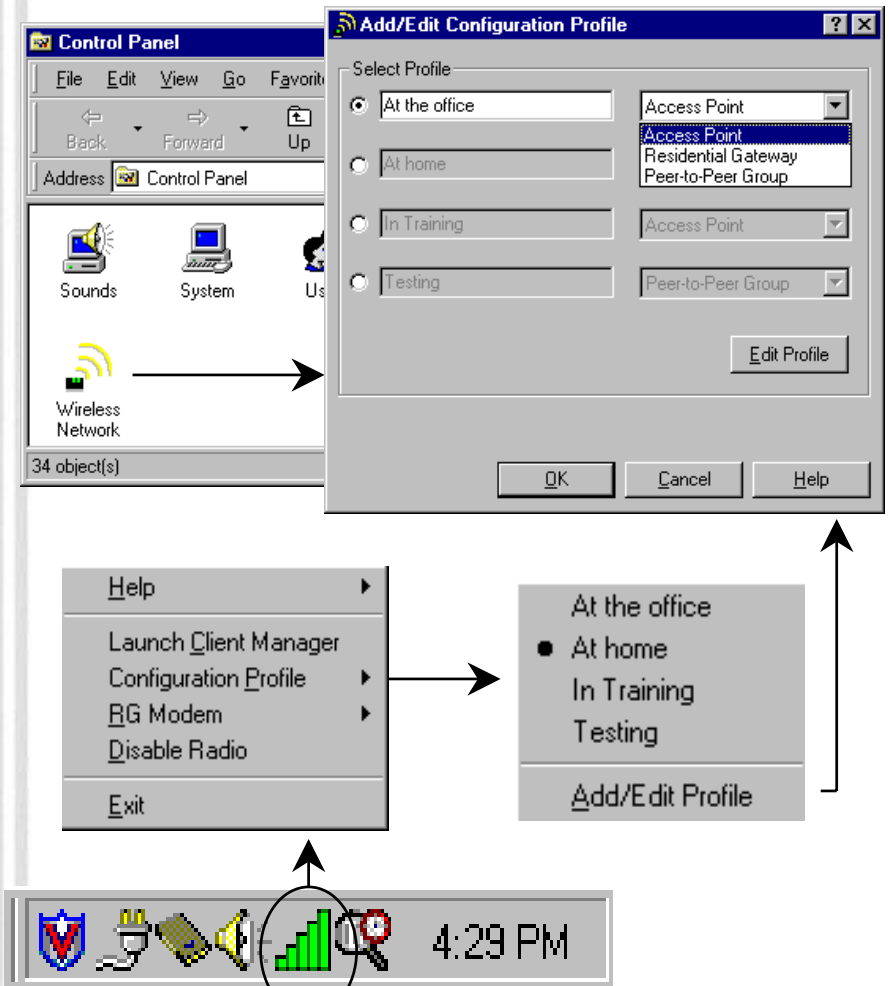
Basic



- ★ name (SSID) of the network that needs to be joined or created
- ★ Encryption can be switched on but only one key can be selected.

Set PC Card parameters

Re-setting the parameters



Control Panel Applet

★ Configuration window activated from “Avaya Wireless applet” on Control Panel

Client Manager Icon

★ Resides on System Tray in task bar

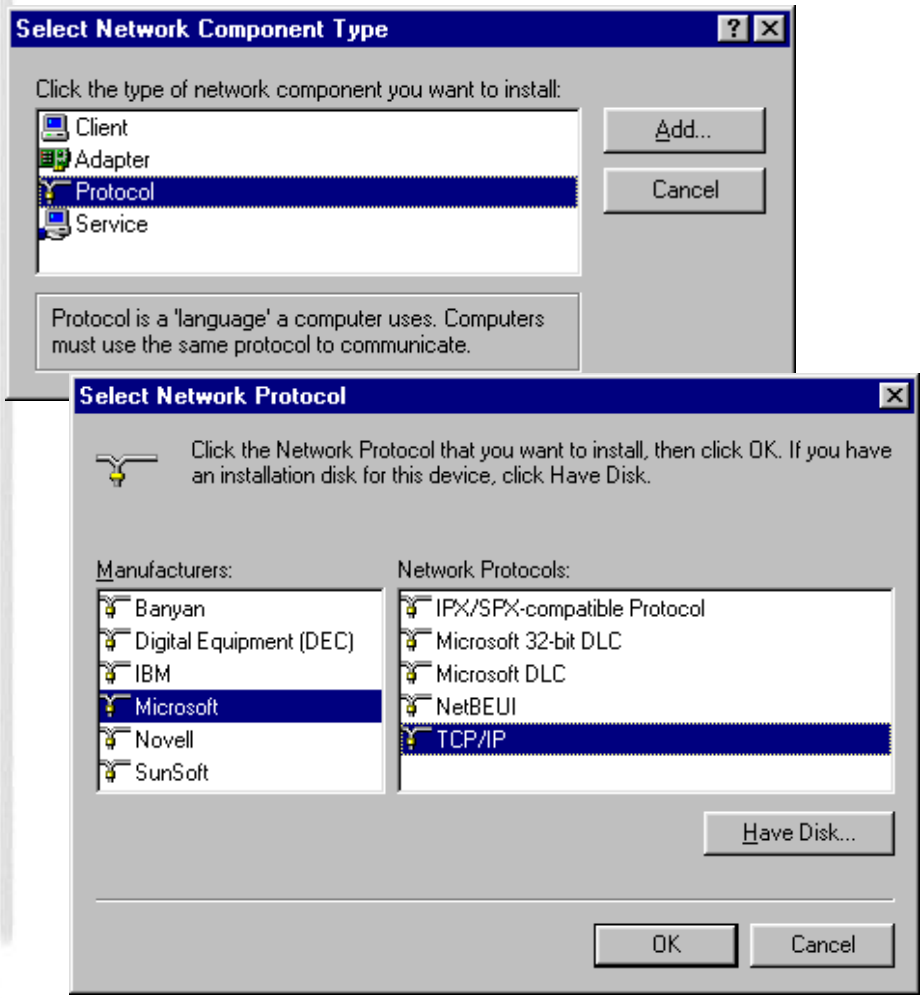
★ Right-click pops up menu; selecting *Configuration Profile* displays configuration window

Return to General Installation Process

Module contents

- ★ Upgrading Station Firmware
- ★ Driver installation - overview
- ★ Installation of Client Manager
- ★ **Client station installation**
  - ★ ISA adapter installation
  - ★ PCI adapter installation
  - ★ PC Card installation
  - ★ USB Client installation
  - ★ PC Card parameter settings
  - ★ **Adding protocol stack**
- ★ Operating the diagnostic tools

Add Protocol stack



- ★ It may be needed that additional protocol stacks are needed
- ★ Add protocol on network neighborhood properties
- ★ Select Manufacturer (most time: Microsoft)
- ★ Select protocol

Return to General Installation Process

Module contents

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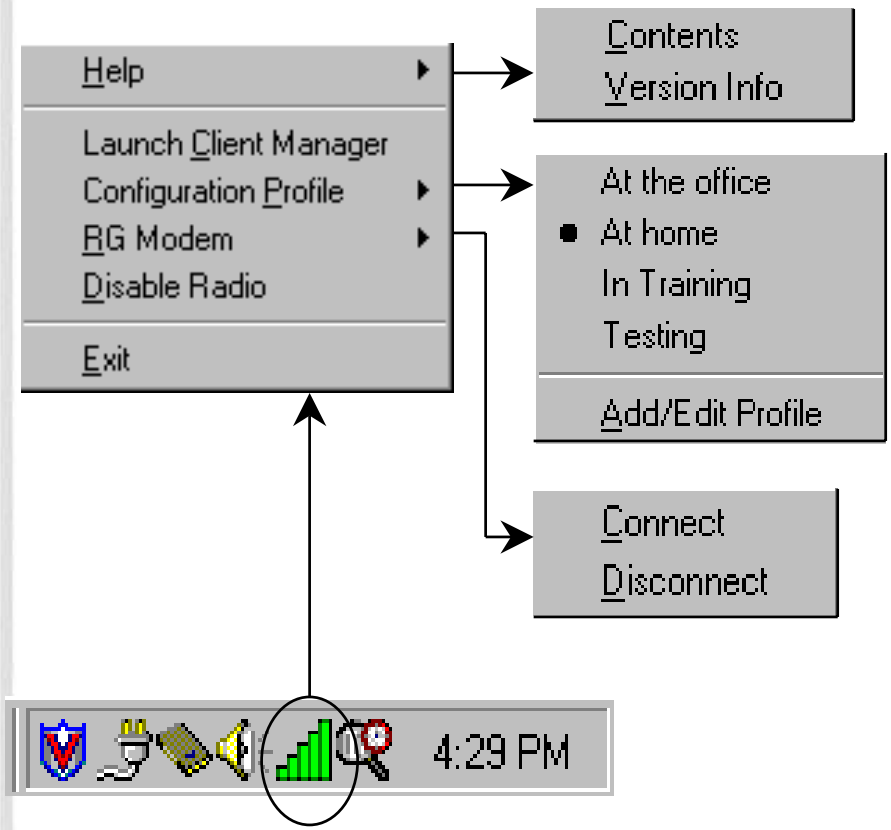
  - ★ Adding protocol stack
- ★ **Operating the diagnostic tools**

New Client Manager Icon

(also displays RF status)

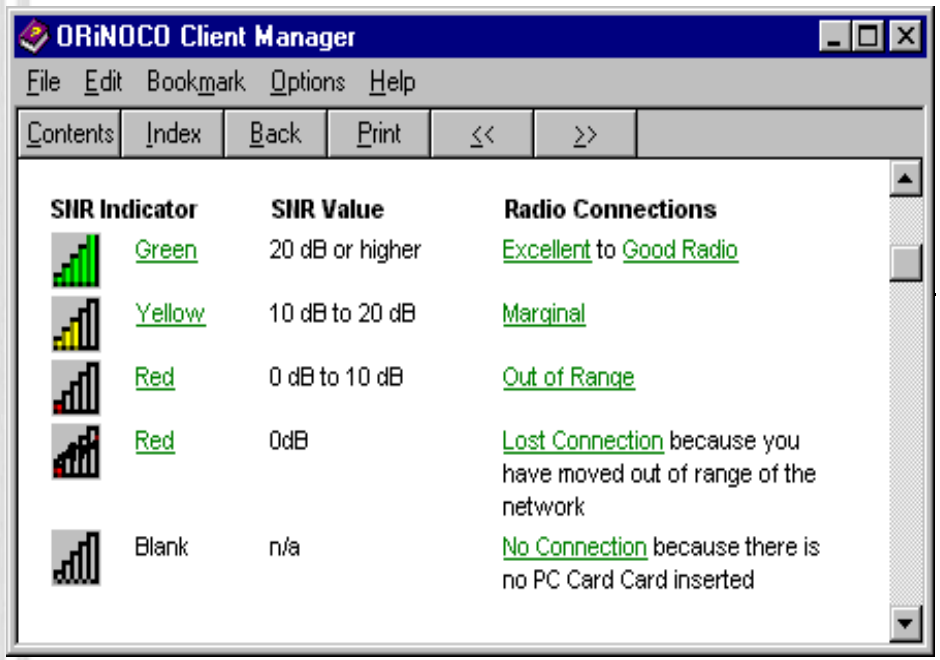


- ★ Former CQI (release 6.0) is integrated in the Client Manager.
- ★ When started Client Manager displays itself by Icon on the task bar, indicating RF status:
  - ★ Color
  - ★ Number of columns
- ★ Right-click on icon presents Client Manger menu
  - ★ Starting the client manager
  - ★ Selecting/changing a profile
  - ★ Connecting an modem line on the RG-1000
  - ★ Asking for version data

AVAYA communication

New Client Manager Icon

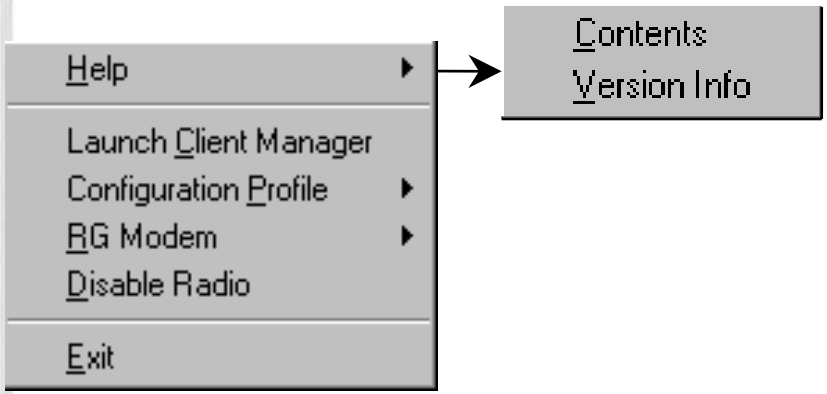
Interpreting the Icon

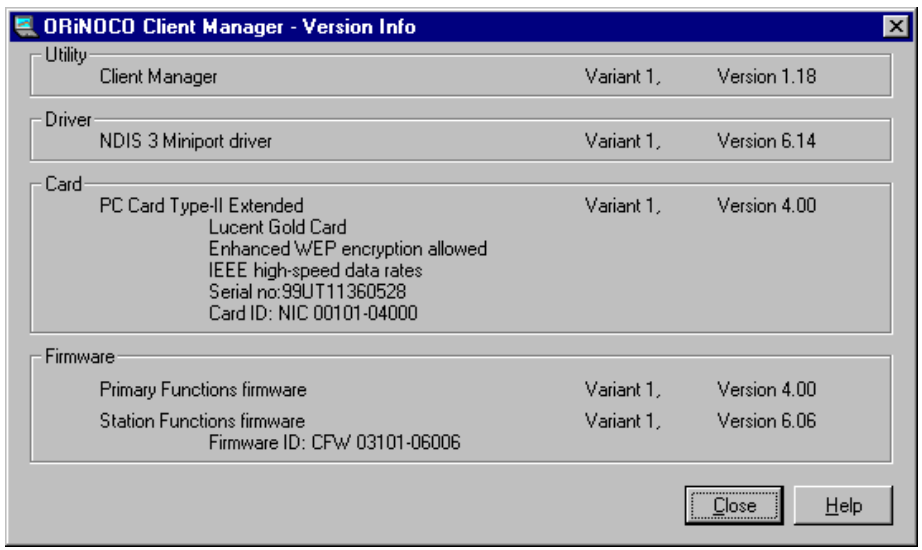


- ★ The Client Manager Icon on the task bar can take different shapes and colors
- ★ Use “help” to obtain information on how to interpret the icon

New Client Manager

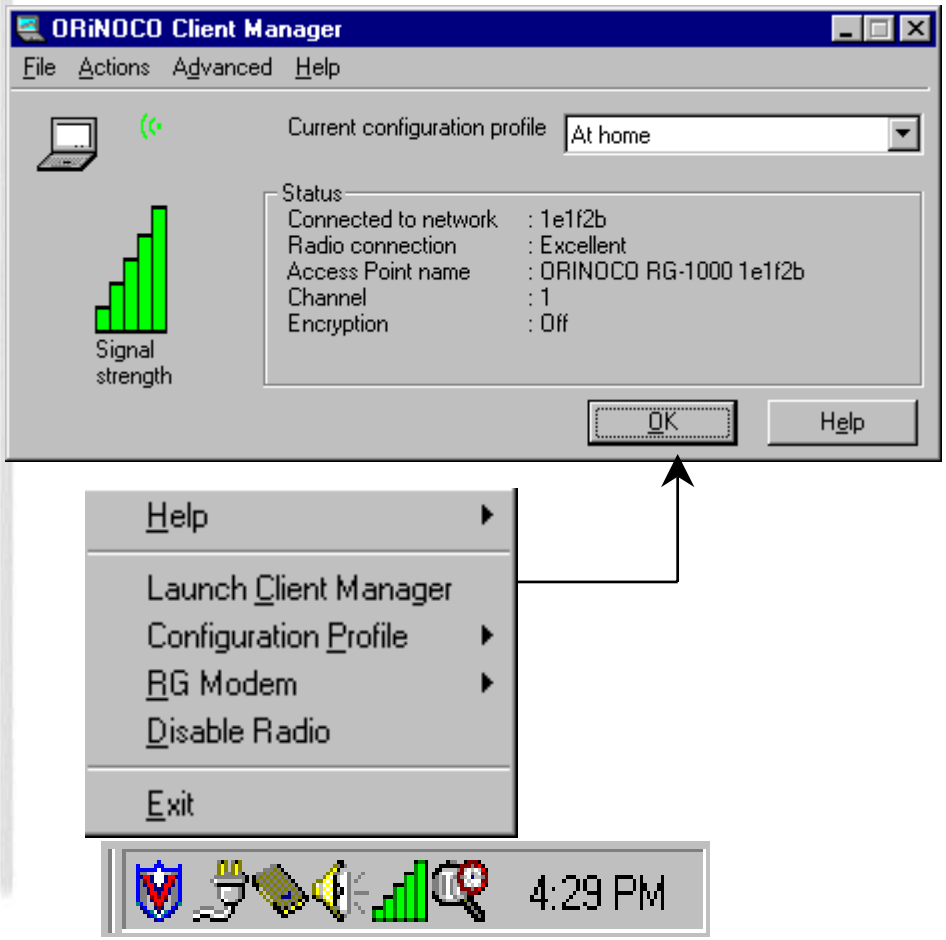
(version information)





- ★ Version information important for diagnostic purposes.
- ★ Identifies version of
  - ★ Client Manager Utility SW
  - ★ PC Card driver
  - ★ PC Card Hardware
  - ★ PC Card Firmware

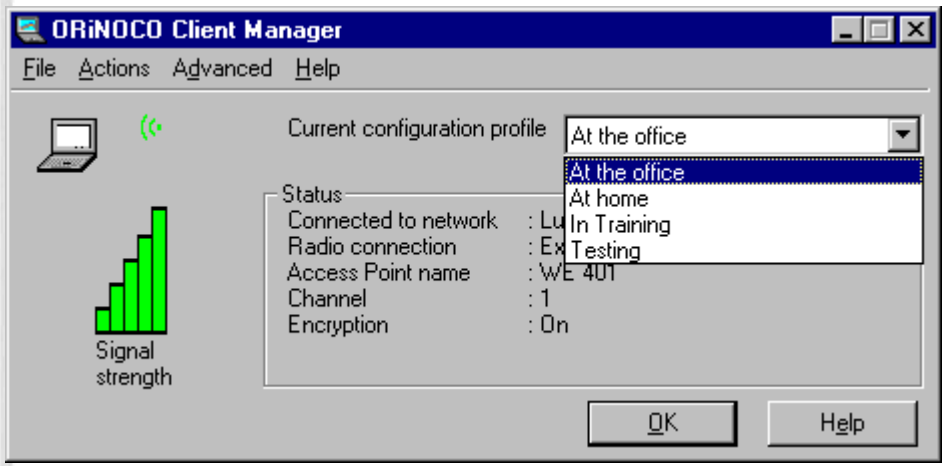
Avaya Wireless Client Manager



- ★ Windows 95/NT/98/2000
- ★ Can be started from the Start Menu or via task-bar Icon
- ★ Integrates diagnostic functions and PC Card configuration setting
- ★ Welcome screen shows general status:
  - ★ Network name
  - ★ Link Qualification
  - ★ AP name (if applicable)
  - ★ Channel
  - ★ Encryption status

Avaya Wireless Client Manager

(profile selection)



- ★ Current profile is identified on welcome screen
- ★ Other profile can be selected from the drop down list that holds available profiles

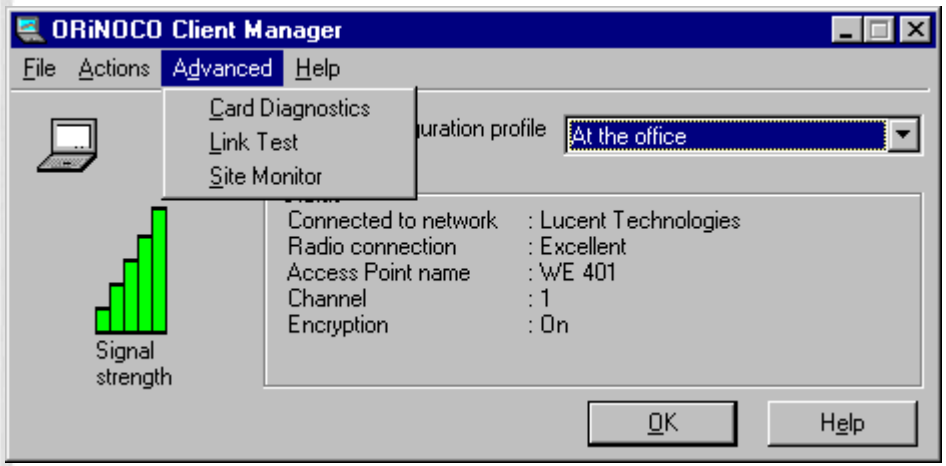
Avaya Wireless Client Manager

(profile selection)

- ★ Alternatively profiles can be selected from the "*Actions*" item on the menu bar
- ★ "*Actions*" item also holds capability to add or change a configuration profile

Avaya Wireless Client Manager

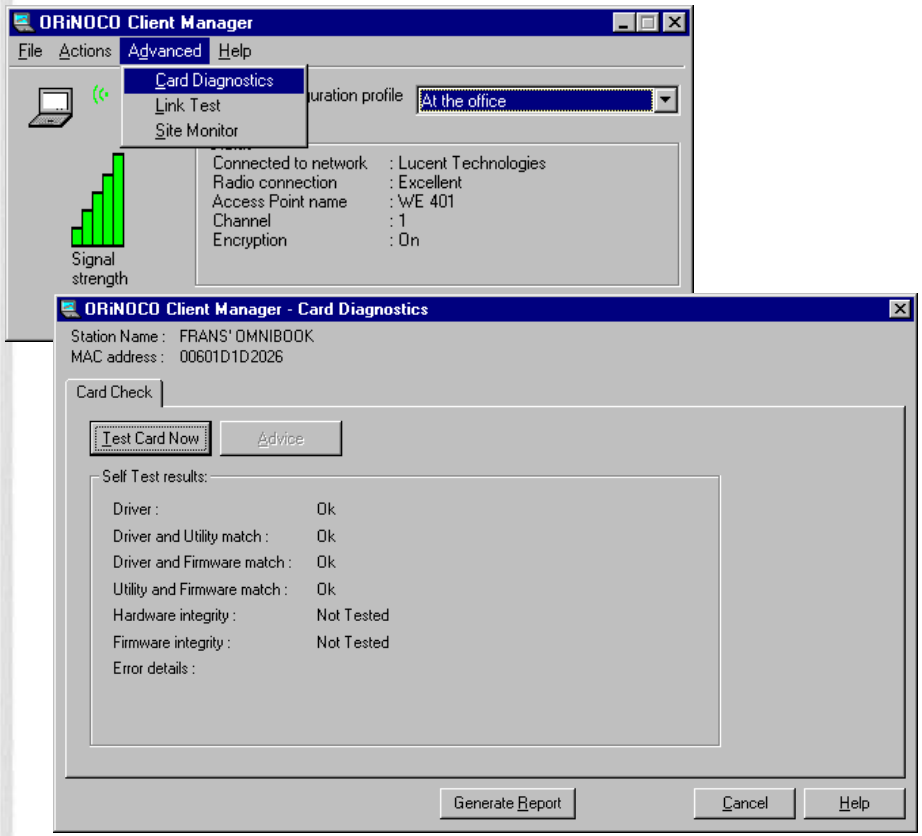
(Diagnostic functions)



- ★ Diagnostic functions are available via the "*Advanced*" item on the menu bar:
  - ★ PC Card diagnostics
  - ★ RF Link test
  - ★ Site Monitor

Avaya Wireless Client Manager

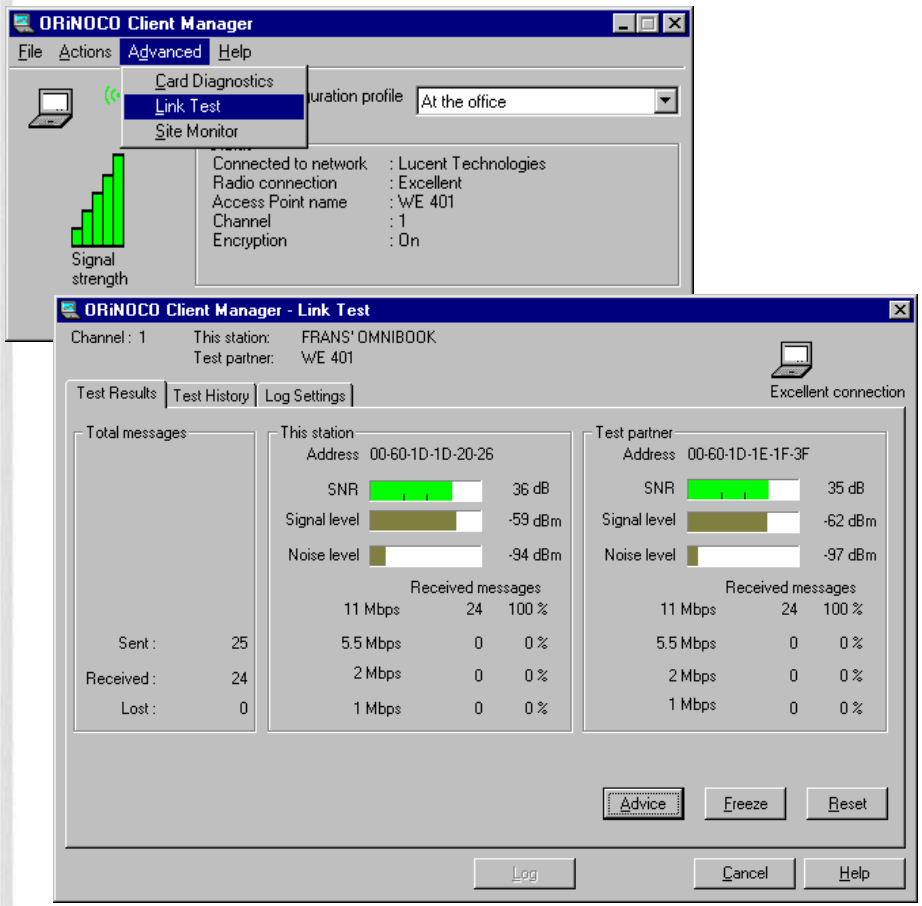
(Diagnostic functions)



- ★ Card Diagnostics runs a series of tests on different elements of the communication HW and SW to check the integrity of the device
- ★ For support purposes a report can be generated

Avaya Wireless Client Manager

(Diagnostic functions)

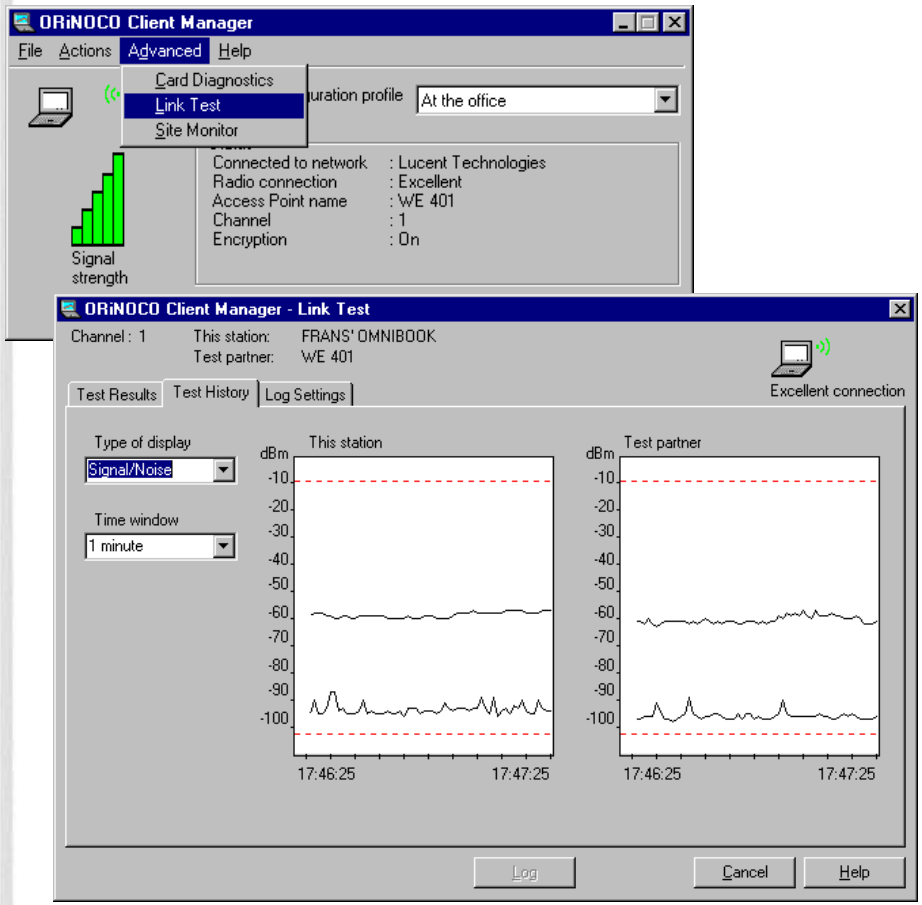


- ★ RF link test is the single most important test to verify the quality of the wireless link between two stations
  - ★ In AP mode link test is always between client station and AP
  - ★ In peer to peer mode link test is executed between client station and another client to be selected from a list of explored stations
- ★ Test results show snapshot readings of SNR, Signal and Noise and indication of attainable data-rate

AVAYA communication

Avaya Wireless Client Manager

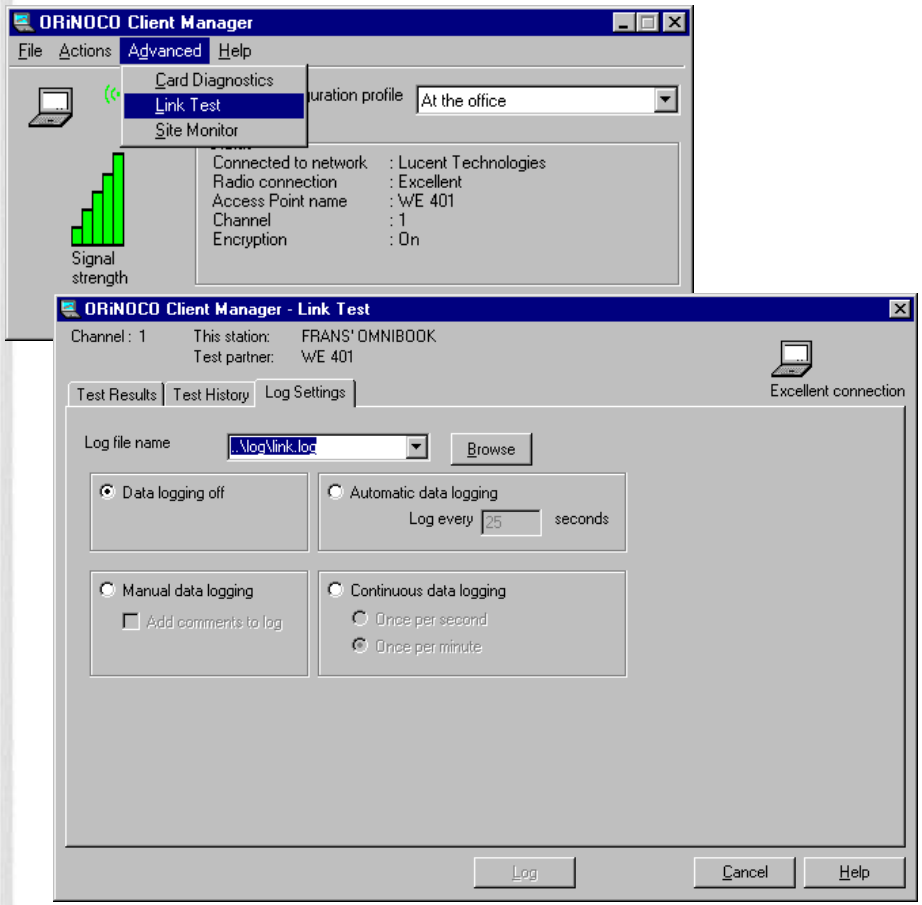
(Diagnostic functions)



- ★ History test shows selected values over time
- ★ Values to be displayed can be selected from drop list:
  - ★ SNR
  - ★ Signal and Noise (two separate lines)
  - ★ Ranges for Noise, Signal or SNR
- ★ Very useful to detect noise spikes

Avaya Wireless Client Manager

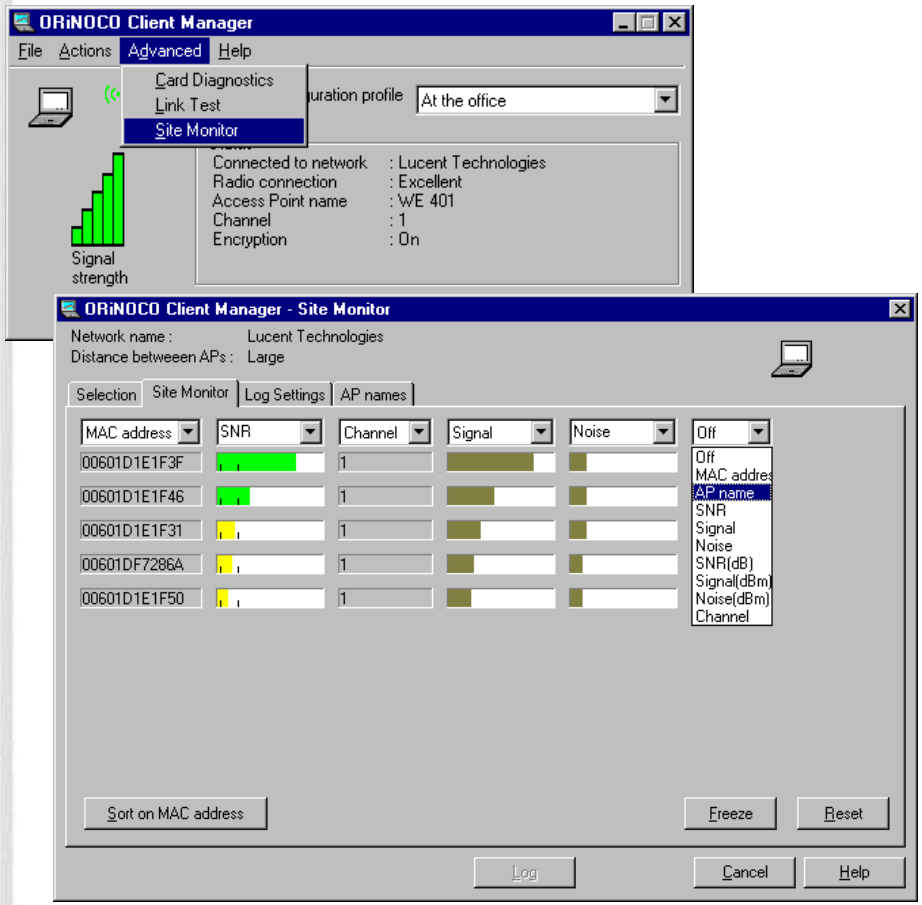
(Diagnostic functions)



- ★ Test results can be logged to disk for later analysis
  - ★ User identified file
  - ★ Manual logging (on user command)
  - ★ Automatic logging (after every x seconds)
  - ★ Continuous logging

Avaya Wireless Client Manager

(Diagnostic functions)



- ★ Site monitor allows a user to "see" all APs with the same network name, from a location.
- ★ Display to be configured by the user by selecting items to show from drop down list
- ★ AP names can be assigned to locate APs easily.
  - ★ Names are maintained in file aplist.txt in association with the MAC address of the PC Card in the AP
  - ★ Can be created by editing or using AP names discovery function

AVAYA communication

Module Summary

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