Introduction

Beta Release Notes
Version 7 of the ORiNOCO™ software is compatible with all Lucent/Agere-derived 802.11 wireless networking cards and the internal Apple Airport™ card. This support is independent of the branding of the card and all compatible cards appear with the branding of the installed software.

The new installer departs from the previous installer’s behavior in that it does not ask the user for a default AS Client network name. The rational is that doing so during install was unusual for the Mac platform and the resulting configuration (lacking any user ID and password) was unusable without further editing.

A superior way to aid the novice user is to present a setup assistant (wizard) after the post-install reboot. As of beta 6, such an assistant is a mode of the control panel. The installer configures the system to run the assistant by default if the ORiNOCO™ preference file doesn’t exist or by request at installation even if one does. The user can also run the assistant independent of the installation process at any time via the control panel’s File menu or via the control strip. The setup assistant itself is not documented here. (Hopefully, it is usable without substantial external documentation.)

Types of Configurations
Three basic types of wireless configurations are supported.

- Infrastructure
  Access Point / Residential Gateway / 3rd Party base-station products
  Any protocols the OS supports over Ethernet can be used. (TCP/IP, AppleTalk™, IPX, etc.)

- Computer To Computer
  Will connect with any 802.11-compliant system also in this mode and appropriately configured.
  Note that at least one compatible protocol (TCP/IP, AppleTalk™, IPX, etc.) and appropriate application-layer software is require to make use of the connection.

- Access Server
  High-security infrastructure with user authentication and per-user / per-session encryption.
  Natively supports only TCP/IP.

Usage Guidelines
The ORiNOCO™ control panel is the primary user interface for creating and modifying wireless configurations. The ORiNOCO™ control strip is a convenient way to switch between wireless configurations. It must be stressed that for Infrastructure and Computer To Computer configurations, the standard steps to configure and select the higher level protocols must still be performed. In these cases, one should consider the ORiNOCO™ hardware and software to be an Ethernet interface. Once setup and active, protocols like TCP/IP or AppleTalk™ must be configured to use the interface in exactly the same manner as for a wired Ethernet network.

Agere Systems recommends using Location Manager to bind ORiNOCO™ configurations, the protocols, and internet preferences into useful sets and switching between them using the Location Manager control strip. The system-level documentation for configuring network protocols and using the Location Manager is provided with MacOS and is not repeated in this document.

The Access Server product is slightly different. Since it only supports TCP/IP, each ORiNOCO™ Access Server configuration automatically defines (and maintains) the subordinate configurations for Remote Access, TCP/IP and modem. The user should not include TCP/IP, Modem, or Remote Access configurations in Location Manager locations which include Access Server configurations.
Configuration Examples

Managing Configurations
If you launch the ORiNOCOTM control panel it will display the main configuration window. The active configuration is noted and is often different from the one selected in the list. The configuration selected in the list is used when the Activate, Edit, Rename, Delete or Duplicate buttons are clicked. The Add button functions regardless of what’s selected in the list.

When Adding, Renaming, or Duplicating the control panel will first ask for a new name using the following dialog.

When Adding, Duplicating or Editing, the main configuration window will be shown next. The appearance and use of this window depend on the kind of configuration involved and the details are discussed in the subsequent sections. But there are several general points to remember when working with ORiNOCOTM configurations.

- You cannot change an Access Server configuration that is active. This is a restriction of the operating system. You may still “Edit” such configurations to view their settings but the Save button will be disabled. You will need to activate some other configuration so the desired Access Server configuration is not active in order to edit it.
- Similarly, you cannot delete an active configuration.
- If you attempt to save changes to an active configuration a warning will appear when you click the Save button indicating that proceeding may interrupt some networking services. If you proceed, the changes will be in effect immediately.
- When editing a configuration that is not the active one, any changes are simply stored. The control panel treats editing and activating a configuration to be separate and distinct operations. Use the Activate button (or switch to the configuration via the ORiNOCOTM Control strip or Apple’s Location Manager) in order for any changes made to take effect.
Standard Infrastructure Configuration

Standard Infrastructure configurations are used to connect with a network being served by one or more 802.11 base stations.

To select this kind of configuration, click the “Access Point / Base Station” radio button in a configuration edit window. The lower portion of the window changes to present the appropriate settings.

If you wish to connect to a closed network, click the Join Closed Network box and type the name of the network. (This is also useful if you want to specify an open network name that happens to not be in-range at the moment but will be when you intend to use it.) If the checkbox is not checked then all open networks are listed and you can simply select one.

Enable WEP, enter its key(s) and choose the transmit key as appropriate for the network. (The network administrator can provide this information.) Click Save when done.

As noted under Usage Guidelines in the Introduction above, you will need to configure the network protocols (TCP/IP, AppleTalk™, IPX, etc.) that you want to use the wireless interface. Do this in the protocol’s control panel by choosing “ORiNOCO™” in the “Connect via” popup menu.
Computer to Computer Configuration

Computer to Computer networks allow a set of clients to form a network among themselves without the support of any central base station(s).

To select this kind of configuration, click the “Computer to Computer” radio button in a configuration edit window. The lower portion of the window changes to present the appropriate settings.

Then decide if you wish to join or create a Computer to Computer network. It’s important to understand that because there is no centralized base station in such a network all members are equal. Once any system is set to create or join such a network (and the configuration is active) the network will exist within range of that system. When two systems configured for the same Computer to Computer network name (and WEP key) come within range, they connect. It does not matter who “starts” such a network. As long as any members remain the network will persist.

For this reason, the Join or Create distinction is only a convenience. It allows one to express intent and offers a means to either enter a network name manually or scan for those in range when editing.

The key points are to enter or select the desired network name and to enter the password used as the network’s WEP key. All members of the network must agree on the password. To turn WEP off and not encrypt the network traffic (and avoid needing to tell users what the password is) simply leave the password blank.

Shown here is a configuration for a Computer to Computer network called “CC Test Net” with WEP enabled.

As noted under Usage Guidelines in the Introduction above, once the network exists you must associate at least one protocol (TCP/IP, AppleTalk™, IPX, etc.) with the interface. Do this using the control panel for the protocol just as you would with any Ethernet interface by setting the “Connect via” popup menu to ORiNOCO™ as shown below.
Access Server Configuration
Access Server networks are an extension of standard infrastructure networks in that they require central base station(s). But they provide much higher security primarily from two sources:

- “Per User / Per Session” encryption means that not only are each user’s encryption keys different from all other users’ they are different each time a new connection is made. This makes it much more difficult for an eavesdropper to attempt to discover the keys and break the encryption. It also removes the need to manually distribute and manage keys as one must with WEP.

- Each user must “log into” the wireless network using their user ID and password. This allows access to be controlled at a central Radius server and allows for accounting for connection time.

To select this kind of configuration, click the “Access Server” radio button in a configuration edit window. The lower portion of the window changes to present the appropriate settings.

Two basic settings need to be specified: authentication credentials (user name and password) and the network names (and their order). Below, we have entered a user name and password:

If you enter a password here it will be saved and used automatically when connecting. If you would prefer, leave the password blank and the system will prompt the user for it each time it’s needed.

There are two ways to specify the network names: manually (clicking the New button) or by copying them from another Access Server configuration (via the popup menu and Copy button). The automatically suppresses duplicates.

To add network names manually click the New button. To modify a name, click on it in the list to select it and then click the Edit button. The add/edit dialog that appears next has on the left the selected network name (if editing) plus all open networks within range and on the right, an edit box that is the real name being edited or added. You may type a network name or choose a scanned network from the list on the left. In this example there are no open networks and we’ve typed the name “West Wing”.

(To delete a name, edit it, clear the name from the edit box, and click the OK button.)

Note that all open infrastructure networks (even those from base stations that are not Access Servers) will be listed. If you have a mix of Access Servers and non-Access Server base stations ask your network administrator for name(s) to use.
Then click the OK button to use the network name in the edit box. You then return to the configuration window with the new or edited name shown.

In our example, we’ve also previously added a network name “East Wing”.

When attempting to connect, the list of network names is processed from the top down and stops at the first one found to have acceptable signal quality. If you know that certain networks will be available more often than others it will make the connection process faster to move them higher in the list. To do this, click on a name to select it and then click the up or down “Move:” arrows.

Note that a single Access Server configuration contains one user name and password pair. If you move between different Access Server networks which do not share a common (or duplicate) authentication service you will likely need different user names and passwords. Each such case would require a separate ORiNOCO™ Access Server configuration.

As before, click the Save button to complete the edit or creation of the configuration. This takes you back to the main window.

Remember that only one ORiNOCO™ configuration can be active at a time and unlike the infrastructure and Computer to Computer types, Access Server configurations are connection-oriented. In addition to activating the configuration, you will need to “connect” just like you would for a PPP connection over a modem. This is discussed in the next section.
Triggering an Access Server Connection

If an Access Server configuration is active, you can trigger it to connect in several ways. One is to have specified that it should auto connect on-demand of TCP/IP. (There is a checkbox for this in the Access Server configuration window.) In that case simply causing an application like Netscape, Internet Explorer or an email client to try to access the network will trigger the connection.

The other way to trigger an Access Server connection is to connect manually. There are two ways to do this. One is to use the Remote Access control strip. Simply click “Connect” at the bottom of the strip’s menu and it will attempt to find an Access Server and connect. The other method is to open the Remote Access control panel and click the Connect button. (As shown here the setup area has been closed since all setup is handled by the ORiNOCO™ control panel.)

If none of the configured network names is reachable an error message will be displayed.

If the user name or password is not accepted by the Access Server, this message is displayed:

Once a connection is up you can set the control strip to show time elapsed or remaining (via the Status Display… item in the menu) or use the Remote Access control panel’s status area, as shown here.

To manually disconnect, click the disconnect button in the Remote Access control panel or choose the disconnect item at the bottom of the Remote Access control strip menu. You should disconnect before putting the system to sleep as the connection will be dropped anyway in that case.