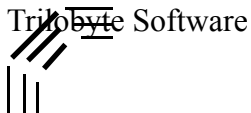


ARACommander 2.0

User's Guide



Registration Information

Users can register by calling or faxing:

513-777-6641
513-779-7760 fax

Prices for ARACommander 2.0 are as follows:

single user license	\$35
10 user license	\$175
20 user license	\$275
50 user license	\$475
100 user license	\$675

Visa or MasterCard accepted.

Shipping & handling charge per order: \$5 US, \$12 International

Registered users of ARACommander 1.0 or ARAClient who purchased before August 1, 1993 can upgrade at just the cost of shipping & handling. Purchases prior to that date can upgrade at the following schedule:

single user license	\$10
10 user license	\$30
20 user license	\$50
50 user license	\$80
100 user license	\$120

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ARACommander™ 2.0

by Ron Duritsch

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System Requirements

ARACommander may be used on any Apple® Macintosh™ computer which is running System 7 or a newer System version. The computer must already have Apple's ARA 1 or ARA 2 installed.

Customer Support

As a registered user of ARACommander you're entitled to customer support. If you have any questions or comments please call customer support at:

513-777-6641
513-779-7760 fax

You may also contact us via electronic mail:

CompuServe™	73740,2472
America Online	Trylobyte
AppleLink	flying.phone

Getting Started

You'll need to already have installed AppleTalk Remote Access or Apple Remote Access version 2, and have set the initial port and modem CCL settings in the "Remote Access Setup" control panel.

Installation

To install ARACommander copy it to the Control Panels folder in the System Folder. Make certain that AppleTalk is turned on in the Chooser. Copy the "ConnectNot 2.0" application and ARAScripser to any convenient place on your hard disk. Now restart your Macintosh.

A Quick Tryout

It's easy to use ARACommander the very first time. Open ARACommander. Your default user name appears in the "Name:" field. The cursor is blinking in the password field, so type in your ARA password. Hit the tab key to move the cursor to the "phone" field. Type in the phone number of the answering ARA server. Hit the return key and watch the progress of the call in the "Status:" area of the window. In moments you're connected to the AppleTalk network that the ARA server resides on.

You can now proceed to use network services. You can keep the control panel open if you like, or close it. The connection remains preserved.

What Are Connectors?

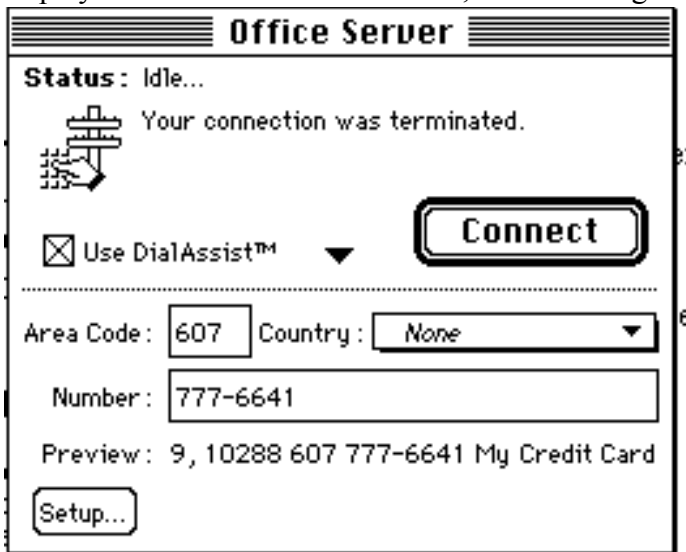


Office Server



Connectors are small applications produced by the ARACommander control panel. They simply get you connected when launched. They store all of the feature settings you made in the control panel before you pressed the "Save Connector..." button, but hide almost all of the details.

In ARACommander 2.0, with ARA 2 and Apple's new Dial Assist control panel installed, Connectors can be toggled to display new Dial Assist information, to aid in long distance and International connection attempts.



Why Are Connectors Useful?

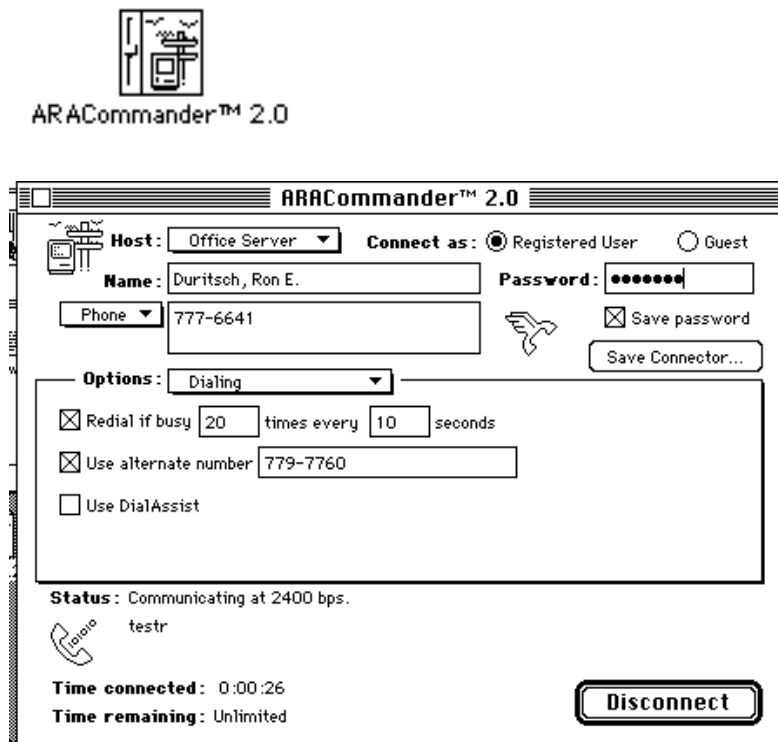
Connectors automate the connection process, getting you there quicker, with less effort and more features - what a utility is all about. They differ from Remote Access connection documents in that they need no one to push the "Connect" button. You can place them in your Apple Menu or on your Desktop for easy access. For an automatic call at startup place a connector in your "Startup Folder". They use a miserly 84K bytes of RAM compared to that of 230k for Apple's Remote Access application, or 400k for version 2 of Apple's Remote Access Client or Remote Access Personal.

What Is ARAScripter?

ARAScripter is an application that looks and acts very much like a Connector, save one important aspect - it is completely controllable by an AppleScript script.

Using AppleScript, or another OSA compliant scripting language, a user can invoke most of the features of ARACommander in ARAScripter, giving the user unprecedented control of an ARA session. This important capability is not currently available in any other ARA utility.

Using the Control Panel



The ARACommander control panel serves two main purposes:

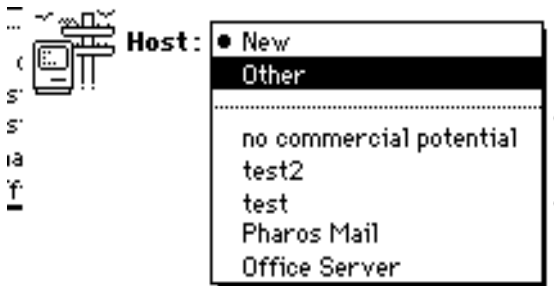
- Connecting to a host ARA server
- Making Connectors

It uses approximately 120K bytes of RAM while open. Most users will find that once all the details of connection are worked out they will prefer to save a Connector to handle those connection chores for subsequent calls to the same host.

The Main View

Host Database

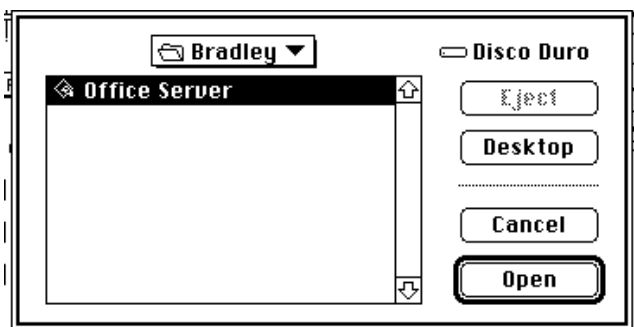
ARACommander provides an easy way to access the information you have stored in your Connectors. Each time you save a Connector the name and location are stored for easy access by the control panel. There is no need to remember where you've placed the Connector or to search to find it. ARACommander knows where to find it. These names appear in the "Host:" popup menu.



To access one simply use the menu to choose a Connector. The information for that Connector will appear in the fields of the control panel.

Choosing the "New" menu item will cause all fields in the control panel to assume their default values, ready for you to supply new information.

Choosing "Other..." will allow you to open a Connector that is not in your Host Database. This choice will provide you with a standard file dialog window.



The act of choosing a Connector that is not yet in your Host Database automatically adds it to your Host Database.

To remove a Connector from the Host Database first delete the Connector, then reopen ARACommander. The Connector will no longer appear in the menu since ARACommander looks for all of the members of the Host Database when it starts up. If it can't find a member it deletes it from the list.

To find where a Connector resides on your disk, hold the option key down while selecting it from the popup menu. The Finder will then open the folder in which the Connector resides and select it.

User Connection Privileges

Connect as : ☒ Registered User ☐ Guest

Connections to an ARA Host can be made as a registered user or as a "Guest". If guests are accepted by the ARA server then no name or password needs to be specified, since they are ignored.

User Name

Name :

A field is provided for the input of the user name. This name must be one recognized in the "Users and Groups" of the ARA server.

Password


 A form element for password input. It consists of a label 'Password:' followed by a rectangular text box containing eight dots. Below the text box is a checkbox with a small 'X' inside, followed by the text 'Save password'.

A field is provided for input of a user password. This password must be one recognized in the "Users and Groups" of the ARA server. The password may be saved in a Connector by checking the "Save password" checkbox. The password is stored in an encrypted form on disk.

Phone Number Features


 A form element for phone number input. It features a small dropdown menu on the left with the word 'Phone' and a downward arrow. To the right of the dropdown is a large, empty rectangular text box for entering the phone number.

A field is provided for entering a phone number for ARA to call. This field may be typed into directly. This number will also be stored with a saved Connector.

A Phone Book for storing phone numbers and phone prefixes is provided with the "Phone" popup menu.



Choosing a named dialing string from the phone menu will pop that string into the phone field at the insertion point. If the cursor is not in the phone field when a string is chosen, the string will prefix any text already in the field. If a range of text is selected in the field, the string will replace the selected text. Thus, the menu becomes an easy way to build a dialing string to use or to save in a Connector.

To add to the Phone Book string list choose the "Edit Dialing Strings..." menu item. You can add named strings to this list.

Label	Number
Office Se	982-2020
San Jose	1-415-222-6627
Calling	855-061-4570-6627
Dial out	9,

Cancel OK

Making Connectors

The "Save Connector..." button in the ARACommander control panel is used for making Connector applications. It is most useful to place Connectors in the Apple Menu or on the Desktop for quick, easy access.



Save Connector...

A press of this button will bring up a custom dialog window for naming a new Connector and saving it to a disk.

Status

The bottom section of the control panel, as well as a Connector window, displays current connection status information. Error messages to the user are also displayed in this area.

Hot Connect/Disconnect

The "Connect" and "Disconnect" buttons always respond to a carriage return or the "enter" key to accomplish the task, whether in the ARACommander control panel or in any Connector.

Options

ARACommander™ 2.0 has several Option views from which users can configure connection or Connector parameters.

Options:

- Dialing
- Modem Setup
- After Connection
- Schedule
- Connector preferences
- Compatibility

Dialing Options

Options: Dialing

☒ Redial if busy 20 times every 10 seconds

☒ Use alternate number 779-7760 Alt. Area Code:

☒ Use DialAssist City / Area Code: Country: None

Setup... **Dial Preview:** 9, 777-6641

Redial Features

An automatic redial feature is provided for both Connectors and the ARACommander control panel.

☒ Redial if busy 20 times every 10 seconds

Redial will occur if the phone you are calling is busy. Redial will also occur if the modems could not connect. Redialing attempts can occur in the background while the user is working on other tasks in another application. So while you're waiting your turn to connect you can be getting some work done.

The user can specify an alternate number to be dialed if the original number is busy or can't connect.


☒ Use alternate number 779-7760

The alternate number will then be dialed every other connection attempt, while the original number is alternatively called. Thus, the two numbers will be dialed one after another, after the user-specified delay between dials, until connection occurs or the redial limit is reached.

You can also temporarily suspend redialing by clicking off the redial checkbox in the ARACommander control panel. When you wish that redialing attempts continue, simply click the checkbox again and redialing will resume where it left off. Also, the number of redial times and seconds between redials can be modified on-the-fly, while a redial operation is in progress.

Office Server

Status: Idle...

 Line is Busy or modems could not connect.
Redialing in 7 seconds

Connect

Dial Assist

☒ Use DialAssist City / Area Code: 513 Country: United States

Setup... **Dial Preview:** 9, 513 777-6641

Dial Assist is a dialing utility developed by Apple Computer Inc. It is a feature currently found only in ARA 2, and thus

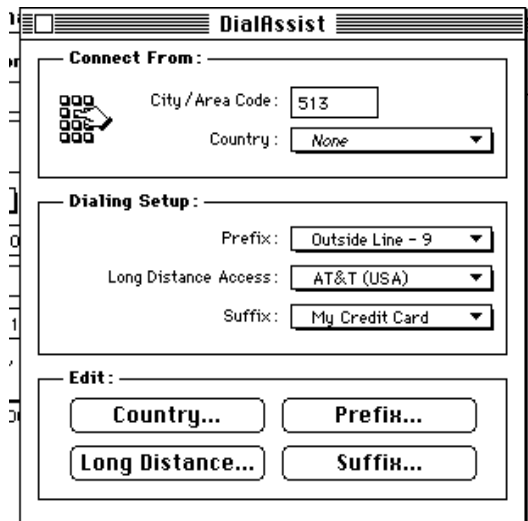
will not be presented or available to the ARA 1 user of ARACommander. The Dial Assist control panel gets installed when the user installs ARA 2.

Dial Assist is completely supported from within ARACommander, ARAScripser, and Connectors when ARA 2 is present on the user's machine.

The features of Dial Assist are meant to assist travelers, or those who find themselves away from their home base of operations and who need to call an ARA server. For detailed information on Dial Assist operations and features please consult your ARA 2 User's Guide.

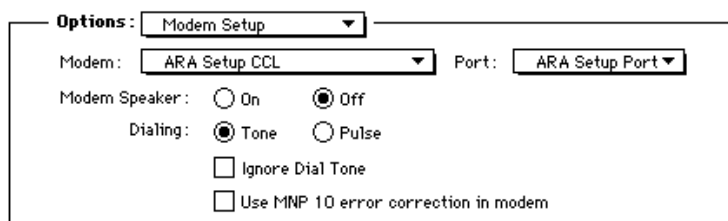
In essence, Dial Assist provides a system whereby users can "wrap" their target phone number with most of the extra information needed to perform long distance, international, or extraordinary dialing - items such as prefixes (like "9." to dial out), area code or country code, long distance access information, and suffixes such as Calling Card and/or Credit Card numbers.

Dial Assist is invoked in ARACommander by clicking in the "Dial Assist" checkbox. Immediately, the "Dial Preview" area displays the complete "wrapped" target telephone number. If the information is not applicable to the current dialing target, a press of the "Setup..." button causes the Macintosh Finder to present the user with the Dial Assist control panel, ready for editing.



Changes made to the Dial Assist control panel are reflected in ARACommander as soon as the ARACommander window is selected.

Modem Options



The Modem Setup view presents choices to the user that are normally found in the Remote Access Setup control panel. ARACommander provides these modem options so that each individual connection or Connector application can contain modem information tailored for its specific use. This precludes use of the Remote Access Setup control panel every time a modem change is needed.

Users of ARA 1 will be able to choose a Modem CCL file, the serial port to use, and whether they wish their

modem speaker to be on.

ARA 2 users will have the additional choices of Tone or Pulse dialing, Ignoring the Dial Tone, and the use of MNP 10 error correction if their modem supports it.

Choosing a Serial Port

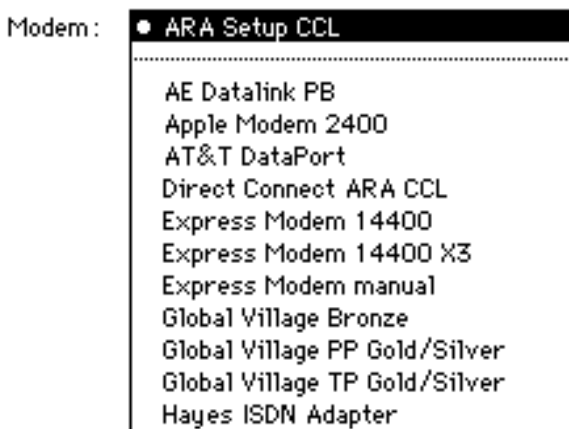


A serial communications port can be chosen in ARACommander. This selection will override the choice made with the "Remote Access Setup" control panel.

If "ARA Setup Port" is chosen, the port choice defaults to the one chosen in the "Remote Access Setup" control panel.

If you never have to change your port, simply use "ARA Setup Port".

Choosing a modem CCL script



A serial modem CCL script can be chosen in ARACommander. This selection will override the choice made with the "Remote Access Setup" control panel.

If "ARA Setup CCL" is chosen, the modem CCL script choice defaults to the one chosen in the "Remote Access Setup" control panel.

If you never need to change your modem CCL script, simply use "ARA Setup CCL".

Modem Speaker On/Off Switch

Modem Speaker: ☐ On ☒ Off

An On/Off switch for your modem speaker can be controlled from the ARACommander control panel or any Connector.

Tone/Pulse Dialing

Dialing: ☒ Tone ☐ Pulse

Tone or pulse dialing can be chosen, instructing the modem to emit the proper signals for tone or pulse dialing.

Ignore Dial Tone

☐ Ignore Dial Tone

The “Ignore Dial Tone” choice will instruct the modem to ignore the dial tone when preparing to dial. Thus, a phone number can be dialed without the modem waiting to hear a dial tone before proceeding to dial.

MNP 10

☐ Use MNP 10 error correction in modem

Using MNP 10 error correction will help to add additional error correction features to a connection. It is especially useful for users of cellular services who are typically plagued with “noisy” connections.

This choice, however, is only available to ARA 2 users, and will only work if both the ARA client modem and the ARA server modem have MNP 10 capabilities. Please consult the User’s Guides of your modems to determine if you can use MNP 10 error correction.

After Connection Options

Much of the added value of ARACommander is involved with what the user wants to occur AFTER a connection is accomplished. ARACommander provides several options for post-connection operations found nowhere else. These options constitute valuable additions to the utility of Apple Remote Access.

These features enable a user to, for example, connect to their office server, open their Network mailbox, open their calendar, open a couple of remote Finder windows on their desktop, mount a server volume, and run a file synchronization program. After these tasks are accomplished, a disconnection can automatically occur after a user specified period of idle time. All this can all be accomplished in one automated Connector.

Playing Sounds

Any sound resource ('snd' resource) in the system can be chosen to be played at connect time.

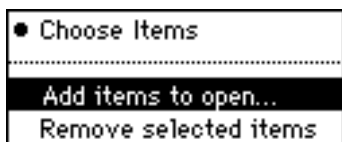


Opening Things

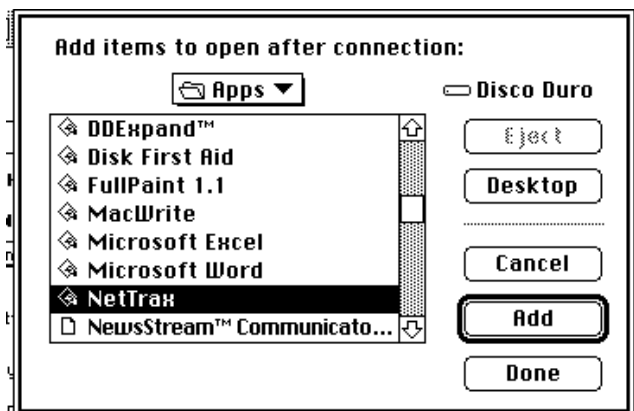
ANY item and any number of items can be opened by ARACommander and Connectors at connect time including:

- applications
- documents
- volumes
- servers
- folder windows in the Finder
- desk accessories
- control panels
- sound files

To choose these multiple items use the "Choose Items" popup menu and select the "Add Items to Open..." menu item.



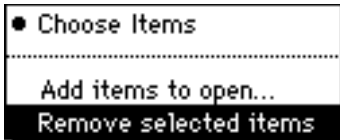
You will be presented with a dialog to select multiple items.



As you select items, a list accumulates in the ARACommander control panel

To remove items that have been previously chosen, select the items in the list and choose the "Remove selected

Items" menu item.



Disconnect Alert

☒ Display Disconnect Alert every minutes

This choice will display a dialog asking the user if they wish to remain connected. If the dialog is not answered a disconnection occurs. Users concerned with racking up substantial long distance phone charges may want to insure that their connection will not stay open if they get called away from their machine. This option ensures a connection will expire after the specified number of minutes.

After disconnection, the ARA driver displays a modal dialog informing the user that a disconnection has occurred.

Disconnect After Idle

☒ Disconnect after idle time of minutes

A powerful feature of ARACommander is the ability to instruct ARA to automatically disconnect if the machine becomes idle for a period of time. This feature will ensure that unattended operations, such as file transfers, will complete before an automatic disconnection occurs.

The ensuing disconnection will not result in a show-stopping modal dialog, as occurs in the “Disconnect Alert” option above. All mounted remote volumes will be unmounted by ARACommander before the connection expires. Since no modal dialog is presented, and ensuing automated process can continue, such as a “quit after disconnection”, as discussed in the Connector Options below.

Flash Icon

☒ Flash Icon in Menu Bar

An ARA connection icon will be periodically displayed over the Apple Menu icon when this option is chosen. This feature provides an additional reminder to the user that a remote connection is in progress.

This feature is available only to users of ARA 2.

Schedule Options

Options : Schedule ▾

<input type="checkbox"/> Saturday	<input checked="" type="checkbox"/> Monday	<input checked="" type="checkbox"/> Wednesday	<input checked="" type="checkbox"/> Friday
<input type="checkbox"/> Sunday	<input type="checkbox"/> Tuesday	<input type="checkbox"/> Thursday	

Check All Clear All

12 2 4 6 8 10 12 2 4 6 8 10 12
am pm am

Users of both ARA 1 and ARA 2 can utilize the scheduling features of ARACommander to enable automatic

connections at prescribed times. The schedule can be executed from the ARACommander control panel or from a Connector.

A Connector that has been saved with a schedule will not automatically connect at startup, but will connect at the next scheduled time after startup.

The ARACommander control panel, or a Connector with a schedule, must be open for a scheduled connection to occur. That is, a scheduled connection will not occur if the control panel, or the Connector with a schedule, is not running.

The status area of ARACommander, or a Connector, will display the next scheduled day and time of connection.

Status: Next Connection: 12/27/93 12:00 PM

If the next scheduled day is the present day, and the next connection time has not been passed, the status area will display the amount of time until the next connection.

Status: Time until Connection: 2:31:00

A “Clear All” button is provided to clear the schedule completely with one press of the button.

Clear All

A “Check All” button will schedule every day of the week.

Check All

Connector Options

Options: Connector preferences ▼

<input checked="" type="checkbox"/> Don't add to database	<input checked="" type="checkbox"/> Hide dialing string when dialing
<input checked="" type="checkbox"/> Protect from viewing/editing	<input checked="" type="checkbox"/> Quit after disconnection
<input type="checkbox"/> Quit after connection	<input type="checkbox"/> Disable after <input type="text"/> days
<input type="checkbox"/> Prompt for prefix or credit card	<input type="checkbox"/> Disable after <input type="text" value="3"/> bad passwords

While all of the features of ARACommander can be saved in automated Connector applications, there are some features that are exclusive to Connectors. Many of these lend themselves to automated connection sequences, while others are designed with security in mind.

Don't add to database

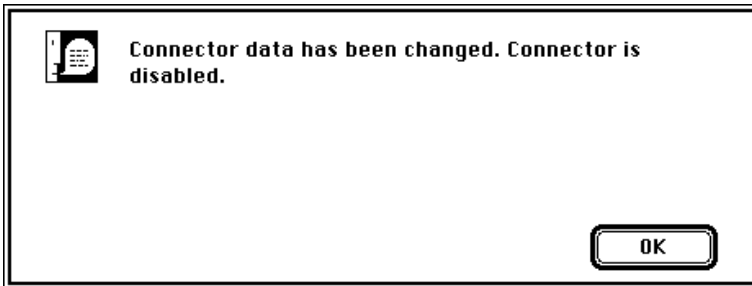
☒ Don't add to database

The “Don't add to database” option simply prevents the saved Connector from being automatically entered in the Host database. Check this feature if you don't want a Connector's name and location accounted for.

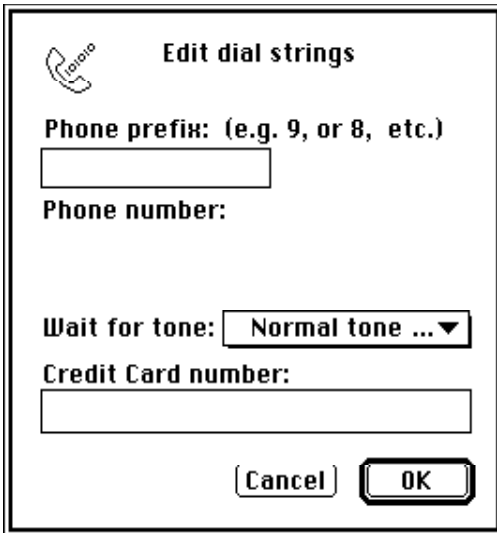
Protection

☒ Protect from viewing/editing

Checking this item prevents Connectors from being viewed or tampered with. A Connector protected in this manner cannot be viewed from the ARACommander control panel by anyone, including the creator control panel. If any important name, password, or phone number information is modified, subsequent use will result in the following dialog:



This feature enables Network Administrators to distribute Connectors to users that can't be viewed or modified by the recipients. In the event that a user needs to add a prefix or add a credit card number the dialog will not display the stored phone number but will allow the additions.



Choosing this option also automatically selects the “Don’t add to database” option, since protected Connectors cannot be viewed from the ARACommander control panel.

Quit after connection

☒ Quit after connection

This feature "Quits" the Connector application immediately after connect time but leaves the Connection preserved. To eventually disconnect the user can launch the Connector again and hit the "Disconnect" button, or open the ARACommander control panel and hit the same button, or simply use the "ConnectNot" application for a quick disconnect.

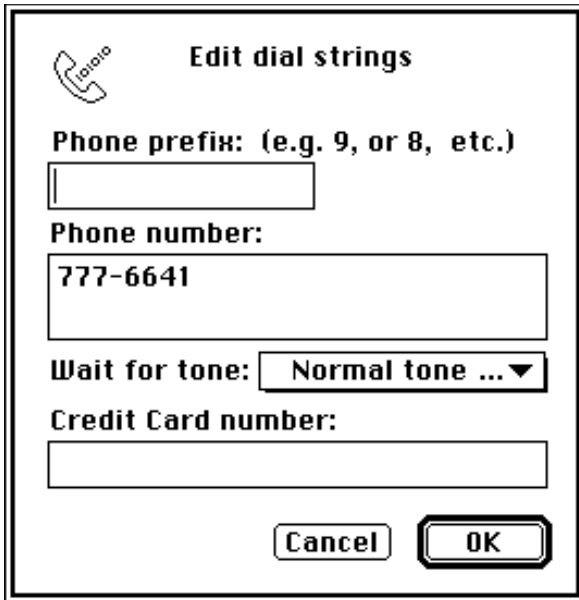
Prompt for prefix or credit card

☒ Prompt for prefix or credit card

Connectors can be made to present to a user a quick method for input of additional dialing information. This

method predates the new Dial Assist features of ARA 2, and is still useful for requiring users to input special numbers, or for a quick adjustment to the phone number string on-the-fly.

If this feature is checked, the user will always be prompted to add or modify dialing information just after the Connector is launched, but before an actual connection attempt is made. A “Cancel” leaves the stored phone number as it is and the connection attempt will continue unmodified.



Edit dial strings

Phone prefix: (e.g. 9, or 8, etc.)

Phone number: 777-6641

Wait for tone: Normal tone ...

Credit Card number:

Cancel OK

After the "OK" button is pressed the Connector will commence dialing with the added information.

This feature is present in any Connector regardless of this option being checked, and can be manually invoked by holding down the “option” or “ctrl” key during the launch of a Connector.

Hide dialing string while dialing

☒ Hide dialing string when dialing

Many company strategies involve the use of an 800 number, or a number where administrators view the display of the phone number itself as leading to a possible breach of security. This option will prevent the phone number from being displayed in a Connector while dialing is occurring.

Used in conjunction with the “protection” option, this feature will prevent viewing of the phone number at any time before, during, or after connection.

Quit after disconnection

☒ Quit after disconnection

A “Quit” after disconnection can be forced if this option is chosen. This may be useful if there is no longer a need to keep the Connector running after a disconnection.

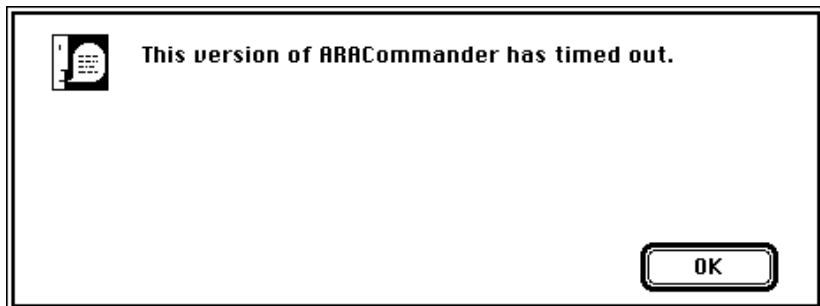
Automatic disabling

☒ Disable after days

Temporary Connectors can be made that disable themselves after a specified number of days. This may be useful in company strategies that involve temporary users, such as potential clients or temporary employees.

Used in conjunction with the “protection” feature, this choice may provide administrators the ability to pass out secure Connectors to non-employees to accomplish needed temporary tasks.

An expired Connector will display the following dialog window.



Disable after bad passwords

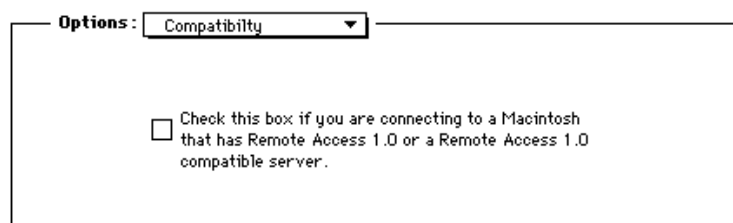
☒ Disable after bad passwords

Connectors can be made to expire after a user-specified number of bad password attempts.

This feature is available only to clients that call an ARA 1 server.

An ARA 2 server will continue to prompt the user for five consecutive times before disabling the user’s account in the “User’s and Groups” of the ARA 2 server. Redemption of account privileges is restored only by contacting the person responsible for making “User’s and Groups” changes on the server, and having them reinstate the account.

Compatibility

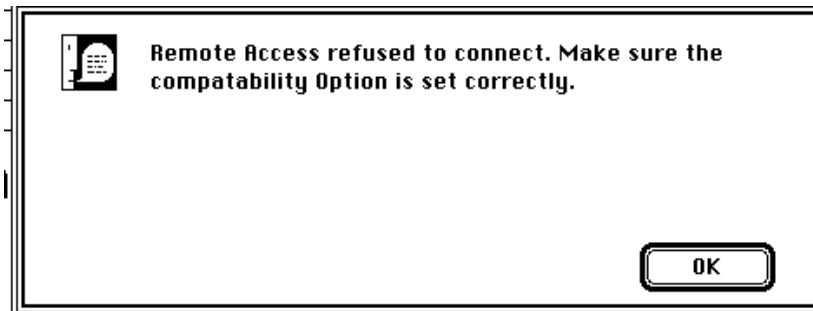


The introduction of ARA 2 with changes to the ARA protocol has necessitated a “compatibility” checkbox.

Users of ARA 1 that call ARA 1 servers can ignore this checkbox.

Users of ARA 2 that call ARA 2 servers can must make sure this box is not checked.

Users of ARA 2 that call ARA 1 servers must check this box or they will receive the following error message:



Users of ARA 1 that call ARA 2 servers will also receive the above error message. However, there will be nothing they can do to immediately alleviate the problem because:

NO ARA 1 CLIENT CAN EVER SUCCESSFULLY CALL AN ARA 2 SERVER.

Changes made to the ARA 2 protocol have excluded backward compatibility.

Phone Number Strategies

In making Connectors to meet your needs it makes sense to determine beforehand the most likely dialing circumstances - whether a server will be called locally most of the time, or whether the user will normally be in a long distance situation. Connectors should be made for common connection situations. After all, the name of the game is to automate actions - to reduce the need for user actions. At some point, however, the user will need the flexibility to change or add to the common Connector.

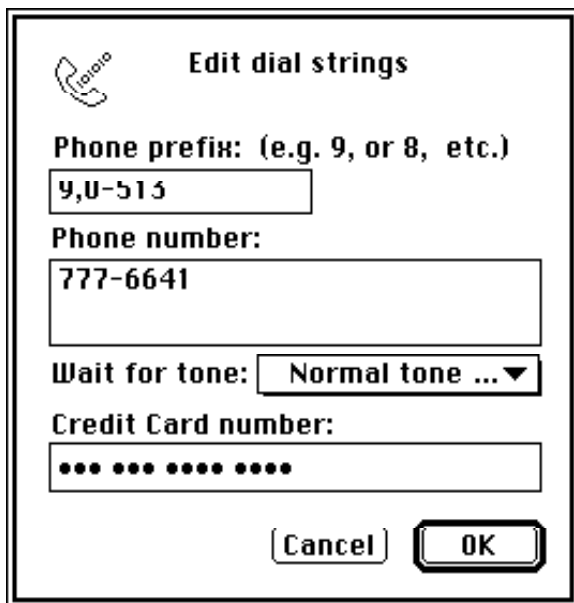
A common strategy would be to build a Connector with a regular local server phone number, say "233-7879". If you find yourself in a uncommon situation where you need to add a prefix, say "9," to dial out, just hold the "option" or "ctrl" key down when launching the Connector to get prompted to input the prefix.

 A rectangular dialog box with a double border. In the top-left corner is a small icon of a telephone handset. To its right, the title "Edit dial strings" is centered. Below the title are four input fields:

- "Phone prefix: (e.g. 9, or 8, etc.)" with a text box containing "9,"
- "Phone number:" with a text box containing "777-6641"
- "Wait for tone:" with a dropdown menu showing "Normal tone ... ▼"
- "Credit Card number:" with an empty text box

 At the bottom are two buttons: "Cancel" and "OK".

For frequent travel it makes sense to build Connectors with all the necessary information saved right into the phone number, including a Credit Card number. For infrequent trips, however, you may find you need to add your credit card on-the-fly.



Edit dial strings

Phone prefix: (e.g. 9, or 8, etc.)
9,0-513

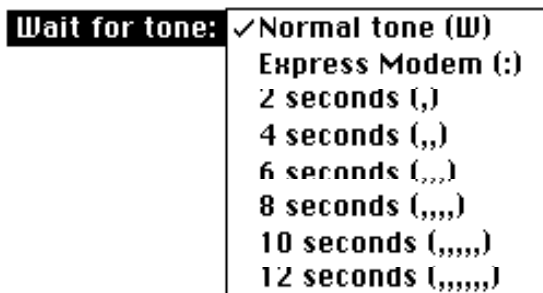
Phone number:
777-6641

Wait for tone: Normal tone ... ▼

Credit Card number:
••••••••••

Cancel OK

A Credit Card number will always be disguised with "bullet" characters in place of the real number to safeguard your private Credit Card number. A "Wait for tone" popup menu enables you to choose the wait character(s) for the long distance service tone (the "bong" sound). Normally, the modem will recognize the long distance tone with the use of the "W" character. This choice is the default choice. If this fails to work, then the user must choose to select a pause of a few seconds duration.



Wait for tone:

- ✓ Normal tone (W)
- Express Modem (:)
- 2 seconds (,)
- 4 seconds (,,)
- 6 seconds (,,,)
- 8 seconds (,,,)
- 10 seconds (,,,,)
- 12 seconds (,,,,,)

For Apple Express Modem™ users, the default choice will be the "Express Modem (:)" choice if the modem CCL saved with the Connector is an Express Modem™ CCL, such as "Express Modem 14400". In this case the Express Modem accepts a ":" character to wait for a wide variety of long distance carrier tones.

It may be helpful to view the entire phone number text as a sum of three parts. These three parts are, in precise order, prefix + phone number + credit card number. This is the same order you enter them in a manual call (you know, using your fingers).

Since modifying or adding to the dialing strings on-the-fly can be a trial and error process the modem speaker is always turned on to aid in audio feedback. If an attempt fails the Connector must be launched again in order to Edit the dialing strings.

You can arrange pieces of the numbers just about any way you want but remember that ARACommander adds the "wait" for the long distance tone (you know, the tone you get before the recorded voice tells you what long distance service you're using) between the phone number and the credit card number. What this means is that you could put the area code at the end of the prefix, or the beginning of the phone number. But don't add a "W" or a bunch of commas

after the phone number or before the credit card number, since this is unnecessary and may

cause the attempt to fail.

In general, place necessary commas or a necessary wait-for-dial-tone ("W") in the prefix.

Alternatively, a user of ARA 2 could use the Dial Assist features to accomplish roughly the same goal - wrapping a local phone number in prefixes and suffixes to perform an extraordinary connection.

To ConnectNot



To disconnect from an ARA connection the user can hit a "Disconnect" button or, if no window with a button is available, simply use the "ConnectNot" application.

Users attempting to conserve RAM may elect not to keep a Status window or the Control panel open. In these cases a quick disconnect method is needed. ConnectNot does only one thing - disconnect. It will not present the user with any modal dialog boxes that may halt unattended disconnections. Most users will find it handy to use from the Apple Menu.

Errors and Aborted Connections

Even the most successful users of Apple Remote Access will encounter errors of some type along the way. Computer communications over phone lines has to flawlessly hurdle a myriad of technical challenges to simply place one character of information before the user's eyes.

Even though a successful connection places you onto a familiar AppleTalk network, there are a few factors that can impede continuity that are otherwise not present when the connection is not a remote one.

The two most probable causes for aborted connections after a successful connection are:

- 1) Line noise
- 2) The CCL file is incorrectly chosen, or incorrectly written

Very few connections can stand up to a burst of line noise. One way to tell if your aborted connections are caused by local line noise is to use a simple terminal emulation program to call a local Bulletin Board System. If you see garbage characters in the terminal window it's likely that local line noise is the reason for your problems.

Local line noise problems can sometimes be solved by your local phone service provider, while some providers will attempt to charge extra for installing a "data grade" service. One thing you can do for yourself is to check all of your phone line wire connections as far along the wire as you can. An improperly shielded line, or even an open connection box with some copper wire exposed can be the culprit.

The other leading cause of connection failure is an improper CCL modem script. Choosing the correct CCL file is very important for Apple Remote Access, since each modem must be instructed to turn off its inherent error correction and data compression. These must be turned off because the ARA driver desires to perform these itself for a variety of reasons.

The problem is that while the Hayes AT command standard provides standard commands for telling a modem to do almost anything, telling it to turn off compression and error correction are not covered. Thus, a command to turn compression off on a Hayes Ultra modem may not work for a Supra modem. So, if you use a Hayes Ultra CCL with a Supra modem you may not be successfully turning compression and error correction off.

A telltale sign of using ARA 1 client software with ARA 2 server software is the -6053 error code. You may see this error number without an explanation if you call an ARA 2 server with Apple's ARA 1 "Remote Access" application, or ARACommander 1.0.

Another common error is a -39 error at startup. This usually means that a needed file has become corrupted to the point where it is not completely readable by the client software. In this case, ARACommander users should remove the "Client Preferences" file from the Preferences folder, and try again. In the case of a Connector producing this error message, try removing the "Connector Preferences" file from the Preferences folder. Other files that can become corrupted include the "Remote Access Preferences" file and the "Dial Assist Preferences" file. Removing any of these will result in the loss of some information, but new a new preferences file will be created by the owning application at startup time.

ARAScripter

ARAScripter is an application that responds the commands presented to it via AppleScript, or any other OSA compliant scripting language.

Most of the features of ARACommander can be provided to ARAScripter via a scripting language.

Scripting ARAScripter is straightforward. You use "Set" commands to set the parameters of a connection before a "Connect" attempt, and "Get" commands after a "Connect" attempt to retrieve connection information. Take a look at the "sample script connection" file provided on your ARACommander 2.0 disk.

Once items are set with "Set xxxx" commands they remain in that state until the script writer explicitly changes them with further "Set xxxx" commands.

The only information required to be set prior to "Connect" is "Set UserName" and "Set UserPassword", if registered user status is set, or just "Set GuestUser", if you're getting on with guest privileges.

There are, however, several optional items you can set to tailor your connection to a specific task. In fact, most of the options you see in ARACommander can be set in ARAScripter.

Once the "Connect" command has been given, and before the connection has completed, you can always tell at what point in the connection process you are by calling "Get ConnectResultCode". Since all ARAScripter connection attempts are asynchronous (meaning the user can be working on other tasks while ARA is attempting connection), you call "Get ConnectResultCode" in a loop to find when you actually get connected, which can take several seconds.

If you have set redial attempts to occur with the "Set RedialTimes" command, there will be no need to script the redial since it is handled internally by ARAScripter.

Once connection is complete, and you exit the loop, you can open other applications, documents, and folders, via the scripting language. If the connection attempt has been unsuccessful, an error message is usually retrieved with a "Get ErrorMessage" command.

After you start a few other scripted tasks going you may want to enter another loop, calling "Get Connection Status", which tells you (among other things) when disconnection occurs.

While the user is connected you can get status information such as the name of the server you are connected to, the last

status message issued by the ARA driver, the time remaining in the connection, and the time transpired in the connection.

After disconnection, If you choose to continue the script to make another connection attempt, remember that items previously set remain in that state until you change them with another "Set xxxx" command. So, if you wanted to

call the same server, all you would have to do is issue another "Connect" command, while calling another ARA server would necessitate setting old variables to new values, such as the phone number.

Once ARAScripter has quit, all information set with "Set xxxx" commands is lost. That is, no connection information is remembered across startups of ARAScripter

ARAScripter Commands

The following is a description of ARAScripter verbs, and how they can be used in AppleScript.

`Set GuestUser`

Sets up an attempt to gain Guest Access to an ARA server, in which case a UserName and UserPassword are not required.

Parameters: none

Result: none

`Set RegisteredUser`

Sets up an attempt to gain Registered User access to an ARA server, in which case a UserName and UserPassword are required.

Parameters: none

Result: none

`Set UserName`

Parameters: string -- The user name text as set in the Users & Groups control panel on the ARA server being called.

Result: small integer -- Returns 0 for no error, or 1 for a bad name (such as a name longer than 31 characters).

`Set UserPassword`

Sets the user password for a connection attempt, which is required for Registered User access.

Parameter: string -- The user password text as set in the Users & Groups control panel on the ARA server being called.

Result: small integer -- Returns 0 for no error, or 1 for a bad password (such as a password longer than 8 characters).

`Set PhoneNumber`

Sets the characters that will be sent to the modem (typically a phone number) in a connection attempt.

Parameter: string -- A string of alphanumeric characters that comprise a phone number along with optional prefixes and suffixes.

Result: small integer -- Returns 0 for no error, or 1 for a bad phone number (such as a string of characters longer than 128 characters).

Set RedialTimes

Sets the number of times automatic redial will occur after a connection attempt has failed due to a busy signal, or modems unable to connect.

Parameter: small integer -- A positive integer less than 6 digits in length.

Result: small integer -- Returns 0 for no error, or 1 for a number out of range (such as a negative number or number with more than 5 digits).

Set RedialInterval

Sets the number of seconds between the end of a connection attempt that is "busy" or "modems failed to connect", and the beginning of a redial.

Parameter: small integer -- A positive integer less than 6 digits in length.

Result: small integer -- Returns 0 for no error, or 1 for a number out of range (such as a negative number, or a number longer than 5 digits).

Set CCLName

Sets the name of the modem CCL file in the Extensions folder that will be used in a subsequent connection attempt.

Parameter: string -- The exact text of the name of the modem's CCL file in the Extensions Folder.

Result: small integer -- Returns 0 for no error, or 1 if the CCL file is not found in the Extensions Folder. In this case, the CCL name last set successfully will be the default.

Set PortName

Sets the name of the Macintosh serial port to be used in a subsequent connection attempt.

Parameter: string -- The exact text of the name of the Macintosh serial port desired.

Result: small integer -- Returns 0 for no error, or 1 if the port name does not match with an existing port. In this case, the port name last set successfully will be the default.

Set SpeakerOn

Instructs the modem to turn it's speaker ON, subsequent to a connection attempt.

Parameter: none

Result: none

Set SpeakerOff

Instructs the modem to turn it's speaker OFF, subsequent to a connection attempt.

Parameter: none

Result: none

Set ToneDial

Instructs the modem to "tone" dial in a subsequent connection attempt. This automatically turns "pulse" dialing off, and is available only with ARA version 2 client software, otherwise it is ignored.

Parameter: none

Result: none

Set PulseDial

Instructs the modem to "pulse" dial in a subsequent connection attempt. This automatically turns "tone" dialing off, and is available only with ARA version 2 client software, otherwise it is ignored.

Parameter: none

Result: none

Set MNP10On

Instructs the ARA driver to use the modem's MNP10 error correction in a subsequent connection attempt. This is available only with ARA version 2 client software, otherwise it is ignored.

Parameter: none

Result: none

Set MNP10Off

Instructs the ARA driver not to use the modem's MNP10 error correction in a subsequent connection attempt. This is available only with ARA version 2 client software, otherwise it is ignored.

Parameter: none

Result: none

Set ConnectSound

Sets the name of the Macintosh sound to be played immediately after a successful connection attempt.

Parameter: string -- The exact text of the name of an existing sound (snd) to be played once at connection.

Result: small integer -- Returns 0 for no error, or 1 if the sound is not found. In this case, the Simple Beep will be the default.

Set IdleDisconnect

Sets the number of minutes of idle time before an automatic disconnect will occur. Default is zero (0), meaning "no disconnection".

Parameter: small integer -- A positive integer less than 4 digits in length.

Result: small integer -- Returns 0 for no error, or 1 for a number out of range (such as a negative number, or a number longer than 3 digits).

Set ConnectIconOn

Set subsequent to connection attempt to enable a flashing notification icon during connection. (For ARA version 2 only, else this is ignored.)

Parameter: none

Result: none

Set ConnectIconOff

Set subsequent to connection attempt to disable flashing notification icon during connection. (For ARA version 2 only,

else this is ignored.)

Parameter: none

Result: none

Set HideDialingString

Set subsequent to a connection attempt to prevent the phone number from being displayed while dialing.

Parameter: none

Result: none

Set ShowDialingString

Set subsequent to a connection attempt to allow the phone number to be displayed while dialing.

Parameter: none

Result: none

Set ARA1Compatible

Set subsequent to connection attempt to instruct ARA 2 driver to connect to an ARA 1 compatible server. (Ignored if running ARA 1 client software.)

Parameter: none

Result: none

Set ARA2Compatible

Set subsequent to connection attempt to instruct ARA 2 driver to connect to an ARA 2 compatible server. (Ignored if running ARA 1 client software.)

Parameter: none

Result: none

Connect

Starts asynchronous connection attempt. Call "Get ConnectResultCode" in a loop to determine success.

Parameter: none

Result: small integer -- Returns 0 if connection process has started, 1 if already connected.

Disconnect

Disconnects synchronously, claiming the machine for a few seconds.

Parameter: none

Result: small integer -- Returns 0 if disconnection process has started, 1 if already disconnected.

Get ConnectResultCode

Gets the result code of a connection attempt must be called repeatedly after "Connect" to determine if connection was successful, or to get an error code.

Parameter: none

Result: small integer -- Returns a negative error number if an error occurred, 0 if connection has completed without error, or 2 if connection attempt is repeating due to a request to redial.

Get ConnectionStatus

Call this every so often to get the current status of the ARA driver regarding connection/disconnection.

Parameter: none

Result: small integer -- Returns -1 if in process of disconnecting, 0 if disconnected, 2 if in process of connecting, 3 if connected, or 4 if waiting to redial.

Get LastStatusMessage

Gets a text message of last reported status of the ARA driver.

Parameter: none

Result: string -- Text description of most situations encountered, otherwise empty. Useful for displaying to users.

Get TimeConnected

Called after connection to obtain the number of seconds since the connection was fully established.

Parameter: none

Result: integer -- Returns a positive integer.

Get TimeRemaining

Called anytime after a successful connection to obtain the number of seconds remaining in the connection.

Parameter: none

Result: integer -- Returns -1 if unlimited time remains, a positive integer otherwise.

Get UserName

Called after successful connection to obtain the user name of the caller as known by the ARA server.

Parameter: none

Result: string -- Returns the user name string. Empty if not connected.

Get ConnectedTo

Called after successful connection to obtain the name of the ARA server connected to.

Parameter: none

Result: string -- Returns text string of name of ARA server. Empty if not connected.

Get ErrorMessage

Retrieves an error message, if any, after a failed connection attempt. Usually called after a "Get ConnectResultCode" returns a negative error number.

Parameter: none

Result: string -- Returns text characters that comprise an error message from the ARA driver. Can be empty.