MultiAccess™
Communications Server

MA30120

Quick Start Guide

MultiTech® Systems

Quick Start Guide

82001423L Revision D

MultiAccess Model MA30120

Record of Revisions

Revision	Date	Description
A	11/17/03	Manual released.
B	12/06/04	Manual revised to include software version 1.08.
C	07/19/05	Manual updated for Modem Setup configuration. This includes software version 1.12.
D	06/06/06	Manual revised to include software version 1.14.

Patents

This device covered by one or more of the following patents: 6,031,867; 6,012,113; 6,009,082; 5,905,794; 5,864,560; 5,815,567; 5,815,503; 5,812,534; 5,809,068; 5,790,532; 5,764,628; 5,764,627; 5,754,589; 5,724,356; 5,673,268; 5,673,257; 5,644,594; 5,628,030; 5,619,508; 5,617,423; 5,600,649; 5,592,586; 5,577,041; 5,574,725; 5,559,793; 5,546,448; 5,546,395; 5,535,204; 5,500,859; 5,471,470; 5,463,616; 5,453,986; 5,452,289; 5,450,425; 5,355,365; 5,309,562; 5,301,274

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Introduction and Description

Welcome to Multi-Tech's new MultiAccess Communications Server, Model MA30120. The MultiAccess Communications Server is a high-performance digital remote access solution for Enterprise LANs and intranets or internet service providers. MultiAccess is a V.92 remote access server (RAS) supporting up to four T1 line interfaces implementing either RBS or PRI signaling for use in North America or up to four E1 line interfaces implementing PRI signaling for international use. The MultiAccess Communications Server uses a web based Graphical User Interface (GUI) for configuration, is a 1U (one-up) rackmountable unit that contains up to four universal modem ports for dial-in communications.

WAN Communications

MultiAccess ships turnkey for T1/RBS or T1/E1 PRI ISDN and is populated with 30 modems on line interface 1 for the basic configuration. Additional modem modules can be added to support up to four T1/E1 line interfaces.

The high-density modems provide V.92/56K dial-up speeds. In addition, they are manageable from remote locations using platform-independent, industry standard protocols.

Management

MultiAccess includes robust management support allowing a network administrator to securely manage the devices either through a web browser or at the command line. The browser-based option uses the HTTPS protocol, also know as SSL (Secure Sockets Layer) to provide 128-bit encryption to secure the management session. The command line interface is accessible via SSH (Secure Shell) and supports SCP (Secure Copy) and sftp (Secure File Transfer Protocol) to help provide maintenance support.

SNTP Support. MultiAccess includes an industry standard Simple Network Time Protocol (SNTP) client that enables it to synchronize its clock with a remote time/clock server on the Internet. This feature is useful for accounting purposes.

Remote Access

Comprehensive Security. MultiAccess provides an industry standard Radius Server and Radius Client for authentication and authorization of thousands of user profiles using PAP and CHAP. In addition, it uses Network Address Translation (NAT) to hide internal, non-routable IP addresses. If a Radius Server does not exist, one is provided as part of the MultiAccess system. This Radius Server could provide authentication and authorization information for this and other Radius Clients in use at your site.

About This Manual

This Quick Start Guide is intended to provide the experienced system administrator the information needed to quickly get the MultiAccess up and running. A User Guide with more detailed information is provided on the MultiAccess system CD in Acrobat (pdf) format.

Safety Warnings

1. Use this product only with UL- and CUL-listed computers.
2. To reduce the risk of fire, use only 26 AWG or larger telephone wiring.
3. Never install telephone wiring during a lightning storm.
4. Never install a telephone jack in a wet location unless the jack is specifically designed for wet locations.
5. Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
6. Use caution when installing or modifying telephone lines.
7. Avoid using a telephone (other than a cordless type) during an electrical storm; there is a risk of electrical shock from lightning.
8. Do not use a telephone in the vicinity of a gas leak.

Caution: Danger of explosion if battery is incorrectly replaced. A lithium battery on the MultiAccess PC board provides backup power for the time-keeping capability. The battery has an estimated life expectancy of ten years. Contact Multi-Tech if you suspect a failed battery. If data and time are incorrect after having the unit powered off, it may be due to a weak battery or incorrect setup.

Caution: The Ethernet ports are not designed to be connected to a Public Telecommunication Network.

Safety Recommendations for Rack Installations

- Ensure proper installation of the MultiAccess in a closed or multi-unit enclosure by following the recommended installation as defined by the enclosure manufacturer. Do not place the MultiAccess directly on top of other equipment or place other equipment directly on top of the MultiAccess.
- If installing the MultiAccess in a closed or multi-unit enclosure, ensure adequate airflow within the rack so that the maximum recommended ambient temperature is not exceeded.
- Ensure that the MultiAccess is properly connected to earth ground via a grounded power cord. If a power strip is used, ensure that the power strip provides adequate grounding of the attached apparatus.
- Ensure that the mains supply circuit is capable of handling the load of the MultiAccess. Refer to the power label on the equipment for load requirements.
- Maximum ambient temperature for the MultiAccess is 40 degrees Celsius (104° F).
- This equipment should only be installed by properly qualified service personnel.
- Only connect like circuits. In other words, connect SELV (Secondary Extra Low Voltage) circuits to SELV circuits and TN (Telecommunications Network) circuits to TN circuits.

Ship Kit Contents

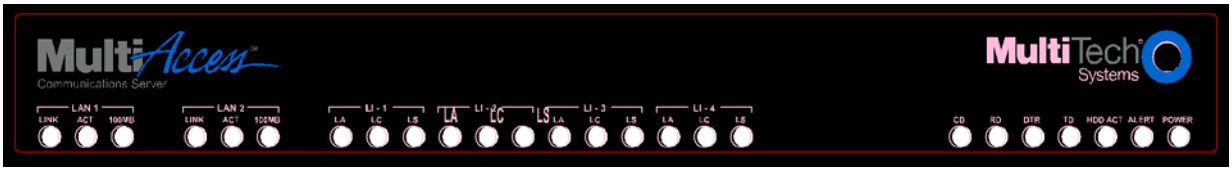
The MultiAccess is shipped with the following:

- 1 MultiAccess
- 4 Power Cords (US,Euro, Austel, & UK)
- 1 Document CD
- 1 Recovery Image CD
- 1 printed Quick Start Guide manual
- 2 Rack Mounting Brackets and four mounting screws

If any of these items are missing, contact Multi-Tech Systems or your dealer or distributor. Inspect the contents for signs of any shipping damage. If damage is observed, do not power up the MultiAccess; contact Multi-Tech's Tech Support for advice.

Front Panel

The MultiAccess has 16 front panel LEDs to provide operating status.



Front Panel LED Descriptions

LED	Description of LAN 1 & 2 LEDs
LINK	The LINK LED indicates link integrity for the LAN Ethernet port. If the Ethernet link is valid at either 10 Mbps or 100 Mbps, the LINK LED is lit. If the Ethernet link is invalid, the LINK LED is off.
ACT	The ACT (Activity) LED indicates either transmit or receive activity on the LAN Ethernet port. When activity is present on the LAN Ethernet port, the ACT LED is lit. When no activity is present on the LAN Ethernet port, the ACT LED is off.
100MB	The 100MB LED indicates the speed of the LAN Ethernet port. The 100MB LED is lit if the LAN Ethernet port is linked at 100 Mbps. The 100 MB LED is off at 10 Mbps.
LED	**Description of LIne LI-1 thru LI-4 LEDs**
LA	The LA (Link Active) indicates layer 1 is up. LA blinks when Los of Frame Alignment (LFA) but not Loss of Signal (LOS).
LC	The LC indicates a red alarm.
LS	The LS indicates a yellow alarm.
LED	**Description of Support Modem LEDs**
CD	The CD (Carrier Detect) LED lights when the modem detects a valid carrier signal from another modem. It is on when the modem is communicating with the other modem. It is off when the link is broken.
RD	The RD (Read Data) LED flashes when the modem is receiving data from another modem.
DTR	The DTR (Data Terminal Ready) LED lights when the operating system detects and initializes the modem.
TD	The TD (Transmit Data) LED flashes when the modem is transmitting data to another modem.
LED	**Description of System LEDs**
HDD ACT	The HDD ACT (Hard Disk Drive Activity) LED lights when the MultiAccess hard disk drive is accessed.
ALERT	The ALERT LED lights and the system beeps when memory DIMM is bad, missing, or if other rudimentary hardware failure.
POWER	The POWER LED is off when the MultiAccess is in a reset state. When the POWER LED is lit, the MultiAccess is not in a reset state.

Note: The **Back Panel** is described in the **Cabling** section.

Installation

Site Planning

With proper planning, your MultiAccess system can be installed quickly and in a short time. To implement the suggested planning process, you must:

1. Plan for physical space, environmental, electronic and electrical needs. Identify physical installation site. The environment should be properly ventilated with controlled temperature and humidity.

   • Good AC power source with proper Earth Ground.
   • EIA 19" rack, MultiComTower, or standalone installation.
   • Determine where the termination point is for each T1, PRI, or E1 line.
   • Determine physical access point to the Ethernet network.
   • Identify high quality category 5 cable for Ethernet & T1 cabling. Depending on environment characteristics, shielded T1 cable may be necessary.
   • For initial setup and administrative purposes, a network workstation with a WEB browser supporting HTTPS will be needed.

2. Define your users' client computer needs

   • Determine the number of dial in analog modem users
   • Identify client workstation OS (PC running Windows®98/XP/2000, or MAC OS10)
   • Identify client modem types (V.34, V.90, V.92)
   • Identify dial up security protocol (CHAP & PAP)
   • Third-Party Security Devices (SecurID)
   • Identify the Security Database (i.e. user file in RADIUS server or Microsoft SAM\Active directory with IAS) and make sure users have dial in rights with framed protocol PPP attribute

3. Identify applicable network resources (IP address of; gateway/default route, DNS, WINS, RADIUS server(s), etc)

   • Identify the network MASK
   • Identify available IP addresses (determine the static IP address that is to be assigned to the Multi Access)
   • Determine IP assignment method (predefined pool/range) to be implemented by the MultiAccess (regarding the IP addresses to be assigned to the remote dial in users).
   • When Implementing RADIUS Authentication and Accounting, identify the UDP ports used by the RADIUS server(s)

4. Define your line interfaces

   • Obtain T1 or E1 PRI line provisioning information for your LEC
   • Identify the telephone number(s) of the line or lines
   • Identify the Framing Format
   • Identify the Line Coding
   • Identify the type of signaling (RBS or PRI for T1 or E1 PRI)
   • For RBS, the signaling type can be referred to as the start method and/or the FXS signaling method (i.e. Immediate, Wink, Ground, and Loop)
   • For PRI signaling identify the type of central office switch\protocol, i.e. AT&T5ESS, DMS100/250, National ISDN2
   • Identify the Line Build-Out (LBO) i.e. what db level is presented on premise by the provider and what db level should the premise equipment transmit at.

   Note: For E1 lines the signaling type must be PRI. R2 signaling methods are not supported.

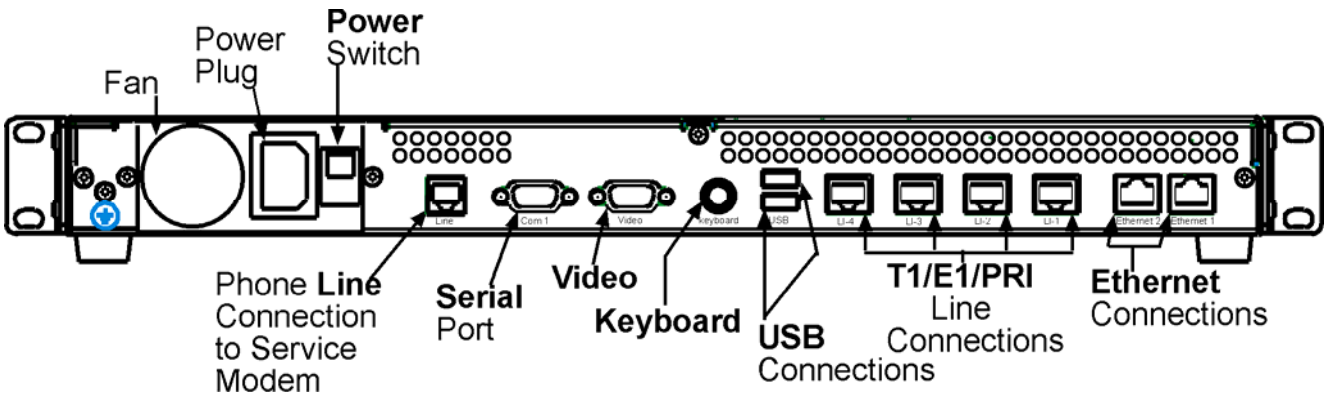
Hardware Installation

The MultiAccess is designed to install either on a desktop or in a standard EIA 19“ rack, and is shipped with the mounting hardware to install the MultiAccess in the rack. If installing in a rack, use the provided mounting hardware and follow the rack enclosure manufacturer’s instructions to safely and securely mount the MultiAccess in the rack enclosure. Proceed to the cabling procedure.

Cabling Procedure - Back Panel

Cabling your MultiAccess involves making the proper power, phone, and line (T1/E1/PRI) connections as described and illustrated below.

The MultiAccess back panel has a fan, a power plug, **POWER** Switch (**| / O**), a RJ-11 phone **LINE** jack, a DB-9 **COM1** jack, a DB-15 High-density DSUB (**VIDEO**) jack, two **USB** (Revision 1.1 compliant) jacks, four RJ-45 **T1/E1/PRI** line jacks, and two **Ethernet** RJ-45 (Ethernet 1 & Ehternet 2) jacks.



1. Using an RJ-45 cable, connect one end to **LI-1** (Line 1 Interface) on the back of the MultiAccess and the other end to your first T1/E1/PRI line connection. If a second, third, or fourth line connection is required, connect an RJ-45 cable for each of the line connections being used.
2. Connect a workstation to your local network, connect one end of an RJ-45 cable to the **Ehternet 1** jack on the back of the MultiAccess and the other end to the hub on your local network.
3. For advanced users, the **Video** and **Keyboard** connections are for manual intervention of the Operating System.

   The default root level login password is linux (lower case) and the command to change the root level password is “passwd”. The recommended mimumum password length is 8-characters. However, the MultiAccess will accept less than 8-characters.

   The Linux command to properly shut down the MultiAccess is shutdown -h now. The command to restart is shutdown -r now.
4. With the MultiAccess Power switch in the off (**O**) position and using the supplied power cord, connect the MultiAccess power plug to a live power outlet.
5. Place the MultiAccess Power switch to the on (|) position to turn on the MultiAccess

Caution: ***Never switch off MultiAccess Power until after you have performed the Shutdown process.*** Refer to **Administration > System Tools** in Chapter 3 of the User Guide. If the MultiAccess is not properly shut down before switching off Power, the next start may take a little longer, or in the worst case, data could be lost.

6. Proceed to Starting the MultiAccess.

Starting Your MultiAccess

This section of the Quick Start Guide covers the steps for connecting a workstation to the MultiAccess, starting up the MultiAccess, opening the MultiAccess Communications Server Web Management program, performing the time zone setup, and using the menu bar to navigate through the Web Management software screens.

1. Set the workstation IP address to **192.168.2.x** subnet other than 192.168.2.1 which is the IP address of Ethernet 1 (eth0) and 192.168.2.5 which is already assigned to Ethernet 2 (eht1).
2. Turn on power to the MultiAccess. When you hear 5 beeps, approximately 2 minutes after applying power, continue with the next step.

   Note: Depending on the version of MultiAccess (and other variables, like the previous shutdown and the number of expansion modules) the duration needed to boot may vary. It may be helpful to connect an external monitor and keyboard to determine the current status of the system. Five seconds after turning on power, one beep is heard, indicating a successful POST of the mother board, next the BIOS detects the hard drive from which the Linux operating system and appropriate drivers are loaded.
3. Bring up a Web browser on the workstation. At the browser's address line, enter **https://192.168.2.1** and press the **Enter** key.

   Important: Be sure to type **https** (http will not work).
4. In some environments, one or more Security Alert screen(s) may display. At the initial **Security Alert** screen, click **Yes** and follow any additional on-screen prompts.

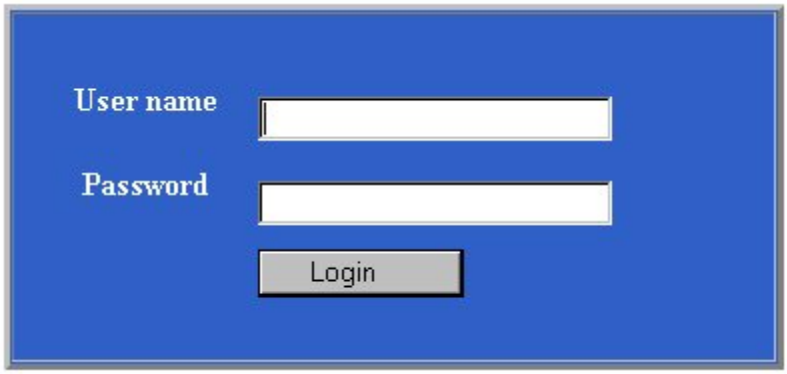
Login

1. The **Login** screen is displayed.
   - Type the default User name: **admin** (all lower-case)
   - Tab to the Password entry and type the default password: **admin** (all lower-case).
   - Click the **Login** button.

   Note: The **User name** and **Password** entries are case-sensitive (both must be all lower-case) and can be up to 12 characters each. Later, you will want to change the password from the default (**admin**) to something else. (If Windows displays the **AutoComplete** screen, for security reasons, you may want to click **No** to tell Windows OS to not remember the password.)

Changing the Password: You should change the default User and Password entries. This can be accomplished in the WEB Admin screen of the Administration menu.

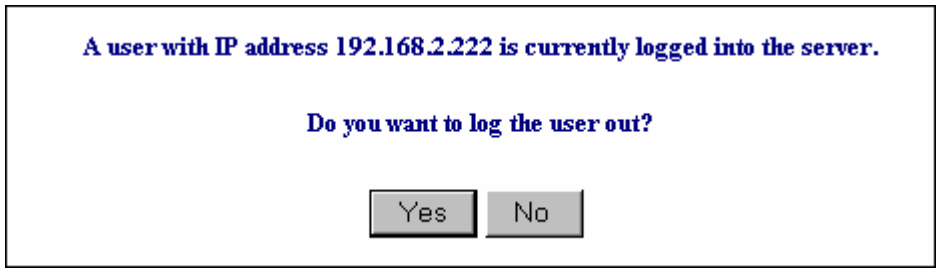
Caution: Use a safe password! Your first name spelled backwards is not a sufficiently safe password; a password such as xfT35$4 is better.



2. If someone else is already logged onto the MultiAccess or you were logged in recently, the following message displays.

   At the prompt **Do you want to log the user out?** Click **Yes**.

   If you click **No**, you are returned to the Login screen.



3. The MultiAccess™ Communications Server Web Management **Home** screen is displayed.

Navigating Through the Screens

When you click one of the MultiAccess Menu Bar buttons, the first screen for that function displays. Once the first screen opens, you can navigate to other screens within this function; they are listed on the left side of the screen.

Home: The main screen.
Administration: System setup such as Time & Date, Web management, and certificate. Provides for system shutdown and restart, plus other administrative tools such as PING, Traceroute, and TCP Connect.
Networks & Services: Define networks, services, and groups to make them available to be used by other functions such as allowed networks, and packet filters.
Network Setup: Set up the LAN 1, and LAN 2 Ethernet ports, etc.
DHCP Server: Configure the DHCP server settings.
System Update: Update services can be downloaded from the update server to keep your system continually updated.
Logout: Logout and return to the login screen
Tracking: Set up tracking of all packets through the network ports.
Packet Filters: Define filter rules and ICMP rules.
User Authentication: Defines security protocol methods, passwords, and user database details.
Modem Setup: Defines the primary role of the modem; RAS, fax, or network modem pool.
Statistics & Logs: View and download all the statistics and log files maintained by your system.
Line Interfaces: Defines setup information of your PSTN lines.
Help: (Online Help) Describes what to do on each screen.

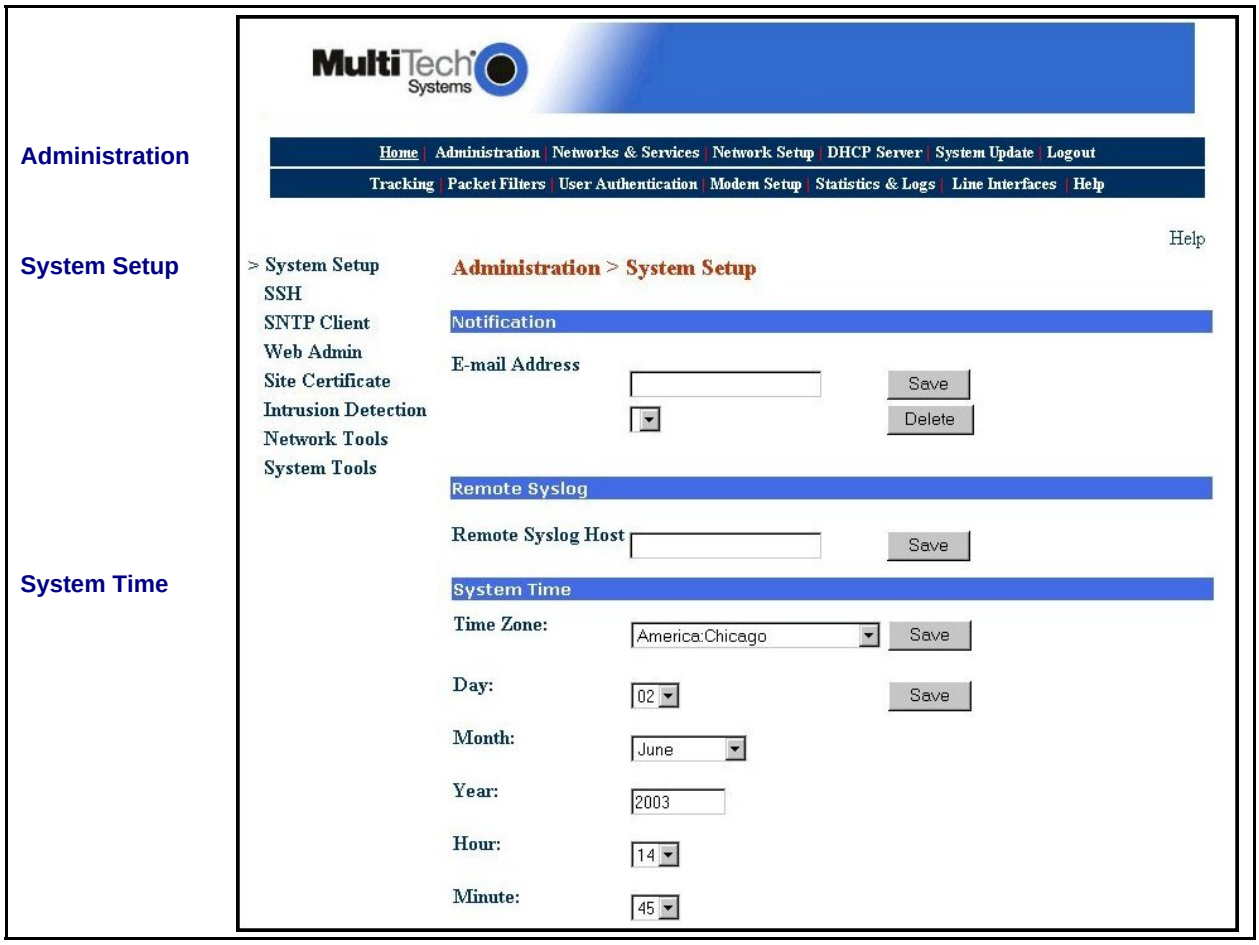
Options Under Each Menu

Home	Administration	Networks & Services	Network Setup	DHCP Server	System Update	Logout
Return to the Main Menu	System Setup SSH SNTP Client Web Admin Site Certificate Database Setup Backup Setup Available Backups Intrusion Detection Network Tools System Tools	Networks Services Network Groups Service Groups	Interface Routes Masquerading SNAT DNAT	Subnet Settings Fixed Addresses	Available Applied Setup	Exit the Program
Tracking	**Packet Filters**	**User Authentication**	**Modem Setup**	**Statistics & Logs**	**Line Interfaces**	**Help**
Accounting	Packet Filter Rules Add User Defined Filters ICMP	Local Users Radius Client Radius Server	Modem Setup Modem Usage Fax Setup	Setup Uptime Networks Line Interfaces Status Modem Connections Server Connections Interface Accounting Self Monitor View Logs	Line 1 Setup Line 2 Setup Line 3 Setup Line 4 Setup	Administration Networks & Services Network Setup DHCP Server System Update Tracking Packet Filters User Authentication Modem Setup Statistics & Logs Line Interfaces

Setup Your Time Zone

1. Click **Administration** on the menu bar. The **System Setup** screen displays.

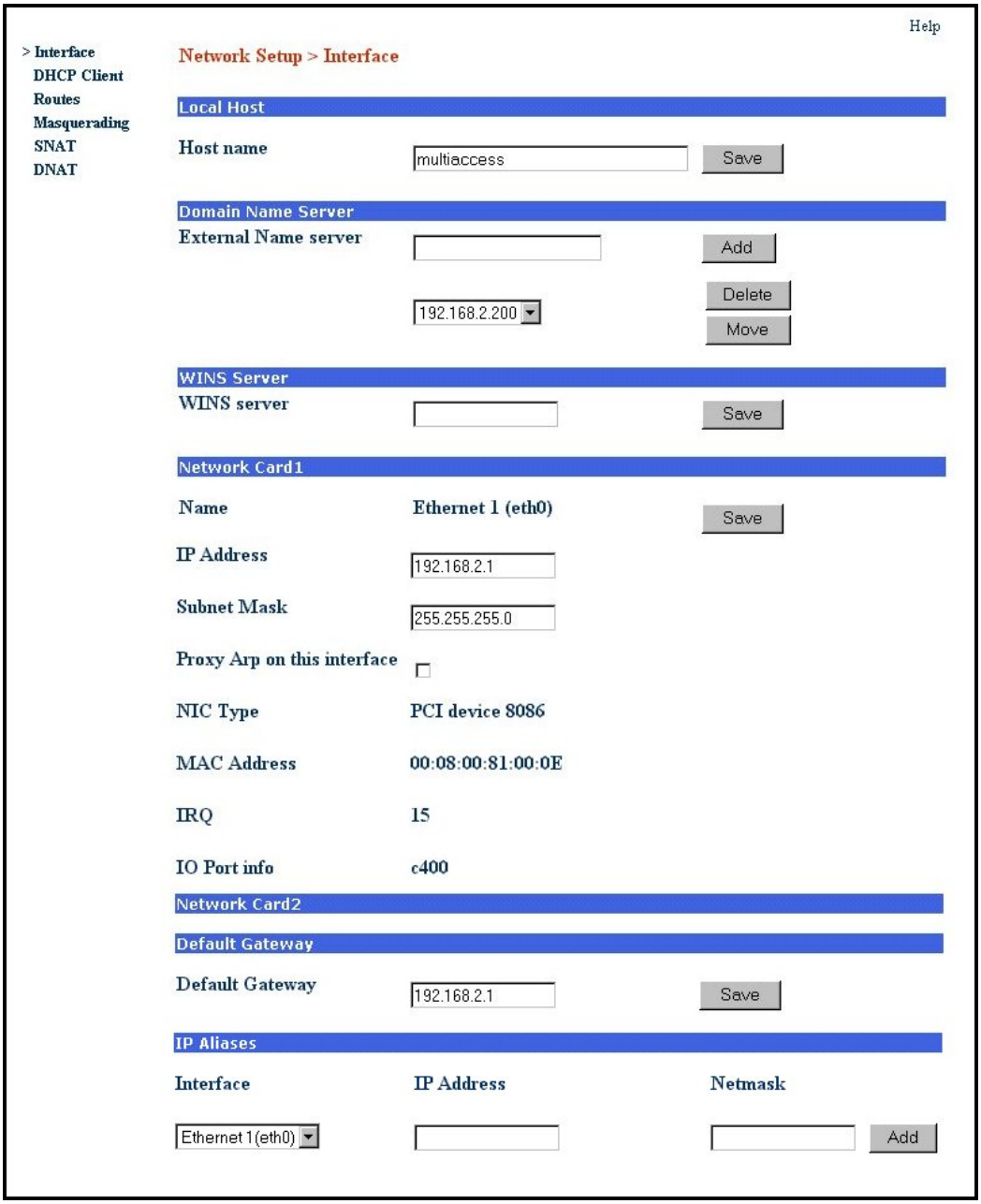
   Set the **System Time** by selecting your **Time Zone**, the current **Day**, **Month**, **Year**, **Hour**, and **Minute**.



Network Setup

In the Network Setup > Interface you can define a host name for your MultiAccess, change the Ethernet 1 (eth0) to your local IP and subnet mask for your local network, and change the IP address of the default Gateway to your local gateway address.

1. Enter the **Host name** you have established for your local MultiAccess. Click **Save**.
2. Enter in the **External Name server** window the IP address of your domain name server (DNS).
3. Click the **Add** button to connect to your name server.
4. Change the default **IP Address** for the Network Card 1 to the IP address of your local network and change the default **Subnet Mask** for the Network Card 1 to the subnet mask for your local network. Click **Save**.
5. Change your web browser address to the new address of your local network.
6. Change the **Default Gateway** IP address to the IP address of your gateway. Click **Save**.



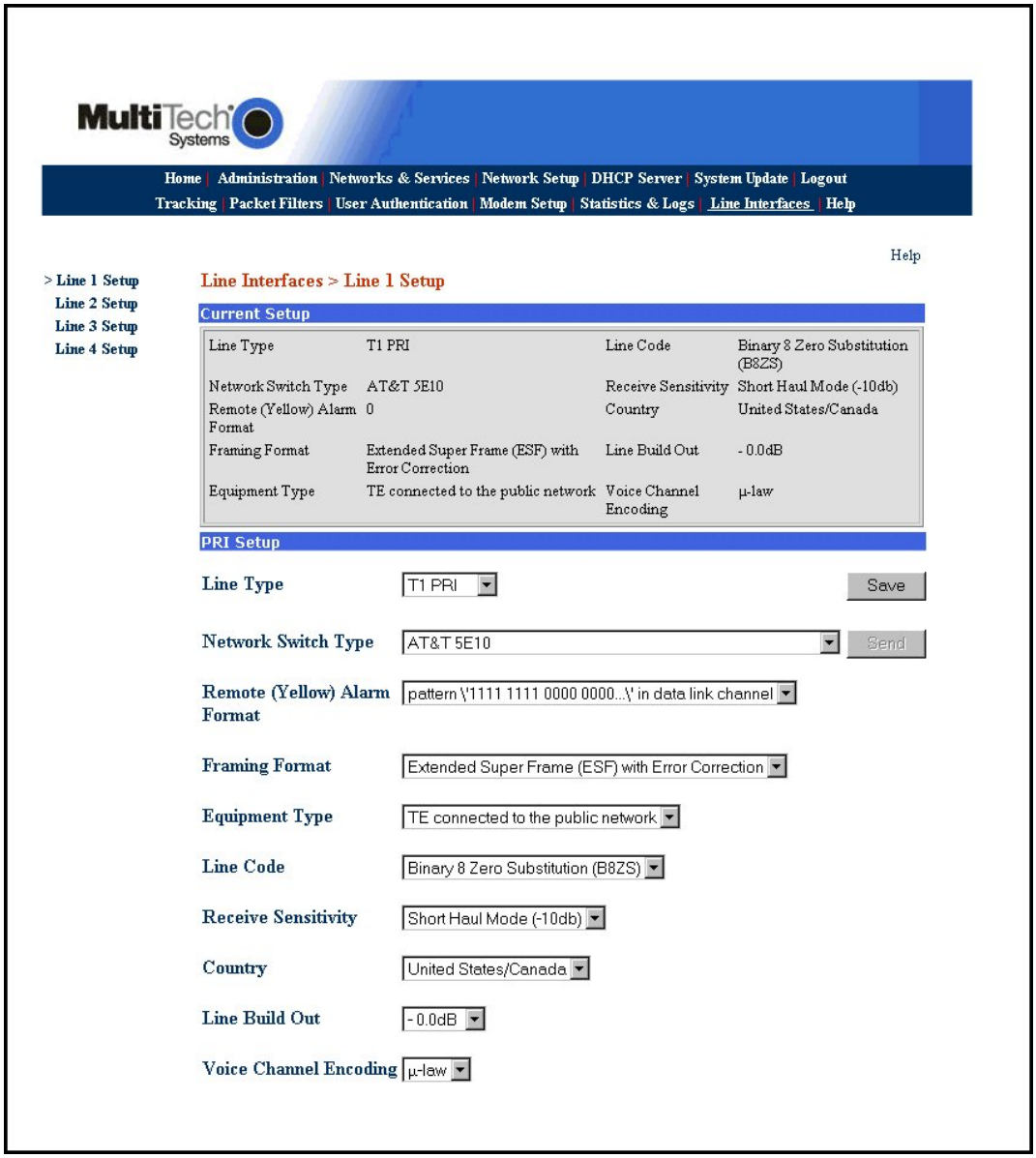
Note: The options for **Network Card 2** are not shown in the above screen due to space limitations. The options are the same as for Network Card 1.

Line Interfaces

To establish your line interfaces for the four LI1 through LI4 interfaces, click on **Line Interfaces**. The **Current Setup** section reflects the current operating parameters of the indicated Line Interface.

1. Click on the **Line Type** down arrow and select your type of line interface; T1 RBS or T1 PRI for North America or E1 PRI for the rest of the world, then wait for the screen to refresh.
2. Use the various pull down menus to match the parameters of the Line Interface with the line provisioning information from your Telco.

   Note: A common provisioning issue is the type of framing format which the telco usually refers to as ESF. But the MultiAccess gives you a choice of ESF or ESF with error correction. Multi-Tech recommends that you choose ESF with error correction.
3. Click **Save** and the **Send** button becomes active.
4. Click the **Send** button to cause the new parameters to become active. You **must wait 45 seconds** for the screen to refresh and the new configuration to apply, then **Current Setup** section is updated.



Modem Setup

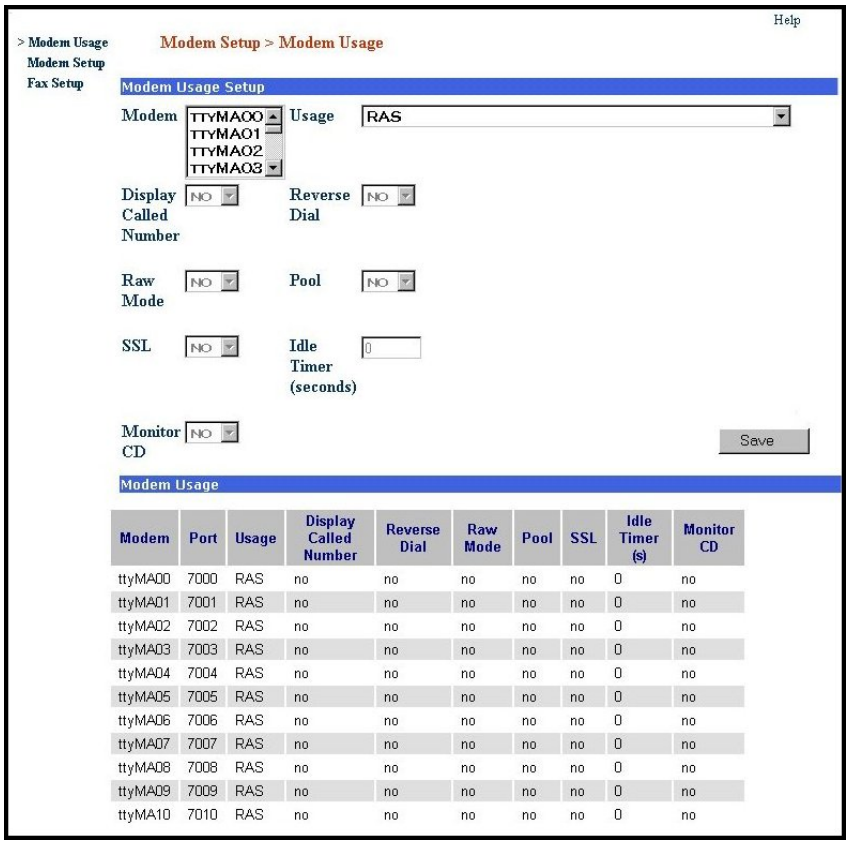
The Modem Setup group of menus configure the modems for usage with RAS, modem sharing, and faxing. The default usage for each modem is RAS. The Modem Setup menu controls the parameters of the modems set to RAS. If the MultiAccess modems are to be used for dialout, in a networking modem sharing environment, then use the Modem Usage menu to change the usage to Modem Sharing. If the MultiAccess modems are to be used for faxing with the integrated Hylafax™ Server, then use the Modem Usage menu to change the usage to Fax. The Fax Setup menu is used to configure the Hylafax Server for sending and receiving faxes.

Note: The MultiAccess modems also support faxing with fax servers that are external to the MultiAccess via the Modem Sharing usage.

Modem Usage

If you are using all your MultiAccess modems to provide dial-in PPP access, you do not have to modify the default Modem Usage settings. The default usage is RAS. If you plan to use all or part of your MultiAccess modems for dial-out, you will have to change the Modem usage settings for the selected modems to one of the Modem Sharing options that best fit your needs. If you plan to use some or all your modems for faxing, you will have to change the Modem Usage setting for the selected modems to Fax.

1. If you are using your MultiAccess in an RAS inbound PPP environment, you do not have to make any changes in the Modem Usage menu.

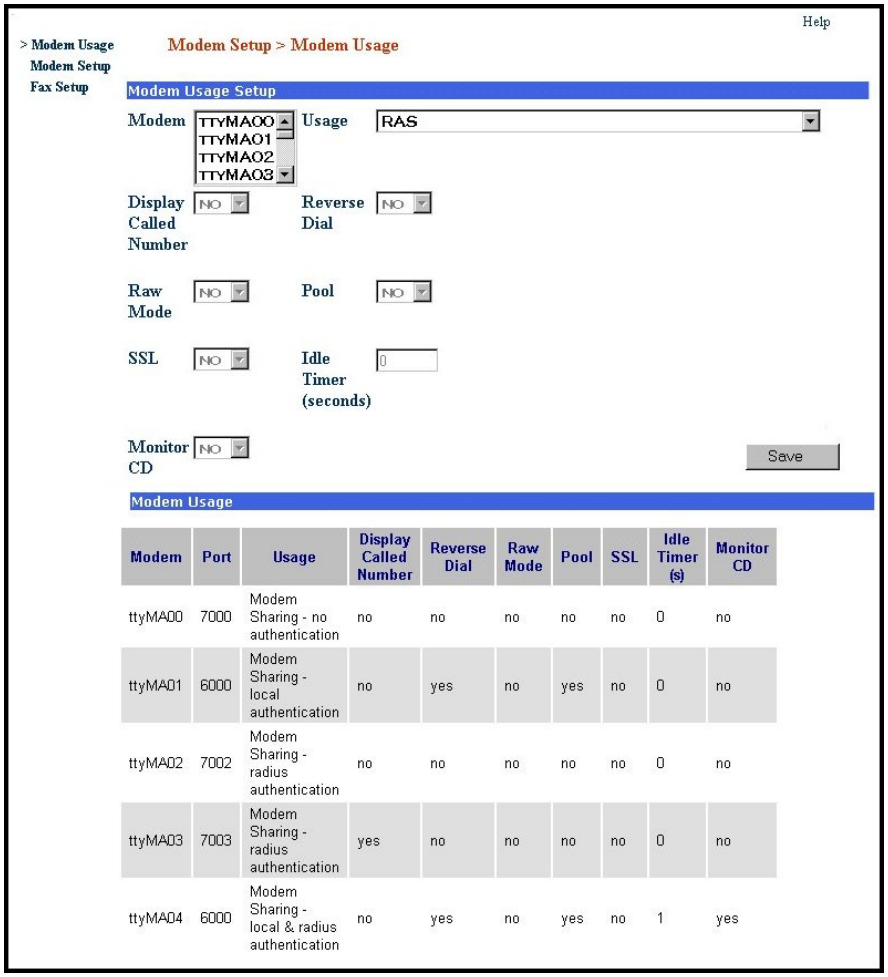


Modem	Port	Usage	Display Called Number	Reverse Dial	Raw Mode	Pool	SSL	Idle Timer (s)	Monitor CD
ttyMA00	7000	RAS	no	no	no	no	no	0	no
ttyMA01	7001	RAS	no	no	no	no	no	0	no
ttyMA02	7002	RAS	no	no	no	no	no	0	no
ttyMA03	7003	RAS	no	no	no	no	no	0	no
ttyMA04	7004	RAS	no	no	no	no	no	0	no
ttyMA05	7005	RAS	no	no	no	no	no	0	no
ttyMA06	7006	RAS	no	no	no	no	no	0	no
ttyMA07	7007	RAS	no	no	no	no	no	0	no
ttyMA08	7008	RAS	no	no	no	no	no	0	no
ttyMA09	7009	RAS	no	no	no	no	no	0	no
ttyMA10	7010	RAS	no	no	no	no	no	0	no

Note: When implementing a combination of usage options, care must be given so that inbound calls do not conflict with outbound calls. This may require changing the hunt group call distribution at the central office and should be addressed with the provider of your T1/E1 digital line.

Caution: Modem sharing is accomplished by implementing a Telnet interface to the MultiAccess modems. Make sure that care is taken to secure access to these ports via firewall or IP filter settings to prevent unauthorized use of your modem resources.

If you are using your MultiAccess as a network modem pool, you will need to set up the Modem Usage menu to support your configuration.



Modem	Port	Usage	Display Called Number	Reverse Dial	Raw Mode	Pool	SSL	Idle Timer (s)	Monitor CD
ttyMA00	7000	Modem Sharing - no authentication	no	no	no	no	no	0	no
ttyMA01	6000	Modem Sharing - local authentication	no	yes	no	yes	no	0	no
ttyMA02	7002	Modem Sharing - radius authentication	no	no	no	no	no	0	no
ttyMA03	7003	Modem Sharing - radius authentication	yes	no	no	no	no	0	no
ttyMA04	6000	Modem Sharing - local & radius authentication	no	yes	no	yes	no	1	yes

1. Click on the **Usage** drop down arrow and chose the Modem Sharing – authentication type that suits your applicational needs.
2. Click on the **Modem** drop up or down arrow and select the tty modem(s) for modem sharing. You can choose multiple modems by holding down the shift key.
3. When the Modem Usage is set to Modem Sharing, the following options become available:

   Display Called Number - This parameter applies to inbound (received) calls when the Line Interface type is PRI. The telephone number (or final digits) dialed by the originator will be displayed into the telnet socket following the first “ring” message. The Called Number information (string of digits) is provided by the central office switch and is commonly referred to as DNIS. The MA30120 does not support DNIS when the Line Interface type is T1-RBS.

   Reverse Dial - This parameter enables two features, comma dialing and reverse dial mode. When enabled, the dial string can include the use of commas, used to create a pause between digits of the dial string (most commonly used to specify the extension of the answering modem).

   Example: “atdt18003334444,,,,,4321”. Each comma creates a 2 second pause. 4321 is the extension of the desitination phone line\modem.

   Reverse dial mode is where the dial string includes the letter “r” at the very end of the dial string, the purpose of which is to instruct the MA30120 modem to switch from originate to answer mode after dialing. For example: “atdt17637175549r”.

   Please Note: When Reverse Dial is enabled, the dial string must include the tone (t) command, for example, atd**t***string* .

Raw Mode - If **Yes**, this sets the TCP port to a RAW socket. User data is treated "as is" and the Telnet Command Escape capability is disabled. If **No**, this allows the Telnet command parser to look for escape sequences that are used to communicate control functions. A common example is to support RFC-2217 Com Port Control.

Pool - If you want to access a specific modem, accept the default of No. Each modem will be given a specific TCP port number, starting at 7000+. If you select pool = Yes, then all selected modems are accessed via port number 6000 – creating a first available pool, starting with the lowest numbered tty port.

SSL - Support is made available when the usage is **Modem Sharing** with **Authentication**. This is only used with SSL capable Telnet Clients. Site Certificate information needs to be configured appropriately. Contact Multi-Tech Tech Support for additional information.

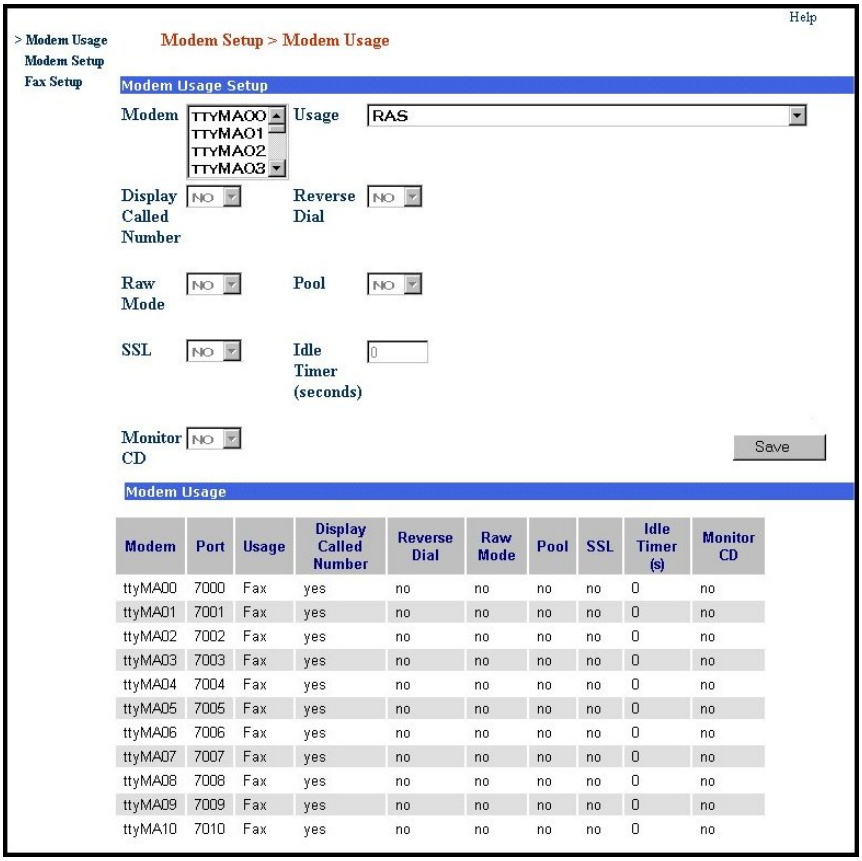
Idle Timer (seconds) - The Idle Timer, upon expiring, will hangup the modem and close the telnet socket. Idle time is defined as no data flow in both directions. Any data sent or received across the socket will cause the Idle Timer to start over. When there has been no data activity for the duration specified, the idle timer will expire.

Monitor CD - Upon the modem disconnecting, the MultiAccess will close the telnet socket to the host application server.

4. Click on the **Save** button.

If you are using your MultiAccess as a network fax server, you need to set up the Modem Usage menu to support your configuration.

1. Click on the **Usage** drop down arrow and select Fax.
2. Click on the **Modem** up or down arrow and select the tty modem(s) for faxing. You can choose multiple modems by holding down the shift key.
3. Click on the **Save** button.

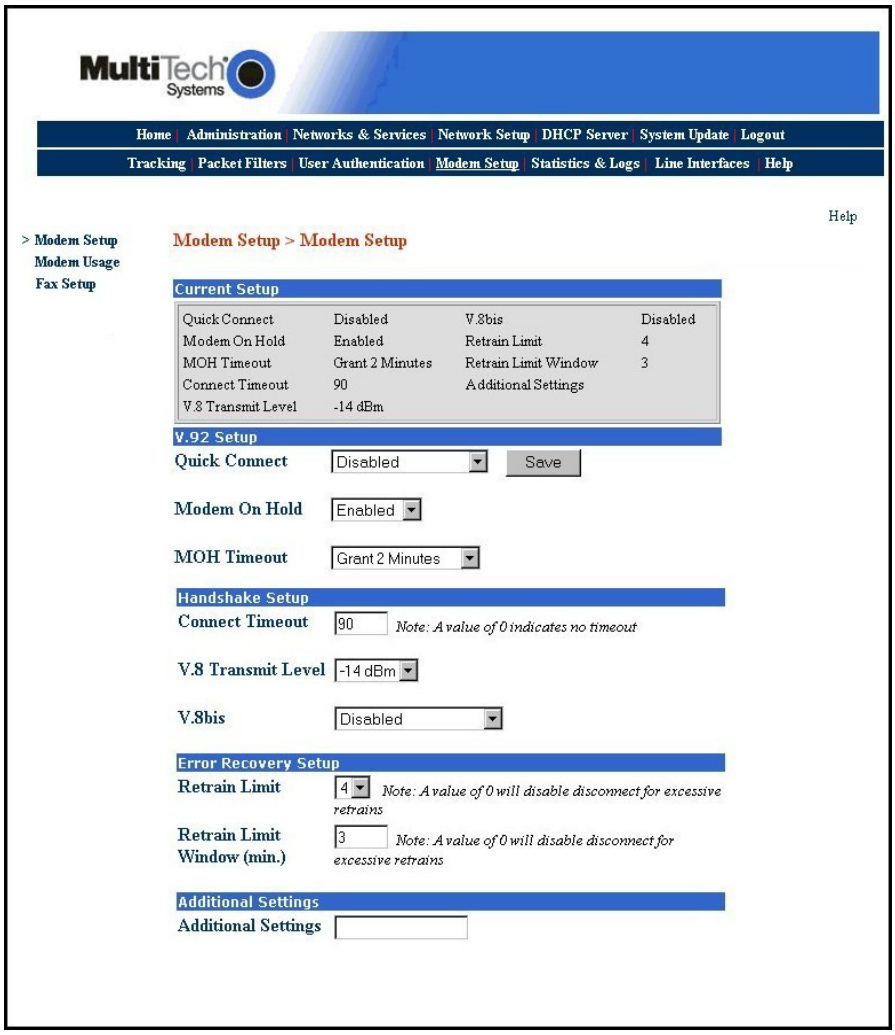


Modem	Port	Usage	Display Called Number	Reverse Dial	Raw Mode	Pool	SSL	Idle Timer (s)	Monitor CD
ttyMA00	7000	Fax	yes	no	no	no	no	0	no
ttyMA01	7001	Fax	yes	no	no	no	no	0	no
ttyMA02	7002	Fax	yes	no	no	no	no	0	no
ttyMA03	7003	Fax	yes	no	no	no	no	0	no
ttyMA04	7004	Fax	yes	no	no	no	no	0	no
ttyMA05	7005	Fax	yes	no	no	no	no	0	no
ttyMA06	7006	Fax	yes	no	no	no	no	0	no
ttyMA07	7007	Fax	yes	no	no	no	no	0	no
ttyMA08	7008	Fax	yes	no	no	no	no	0	no
ttyMA09	7009	Fax	yes	no	no	no	no	0	no
ttyMA10	7010	Fax	yes	no	no	no	no	0	no

Modem Setup

The Modem Setup screen only applies when the Modem Usage is set for RAS (Dial-in PPP). RAS usage is defined in the Modem Usage Setup field of the Modem Usage screen.

1. Verify that the **V.92 Setup** parameters conform to your client's characteristics.
2. Multi-Tech recommends that you set **Retrain Limit** to 4 and due to compatibility issues seen with various modems, you may wish to disable **Quick Connect** and **V.8bis**.
3. If additonal modem commands are required, refer to Appendix B, Advanced Commands in the User Guide.



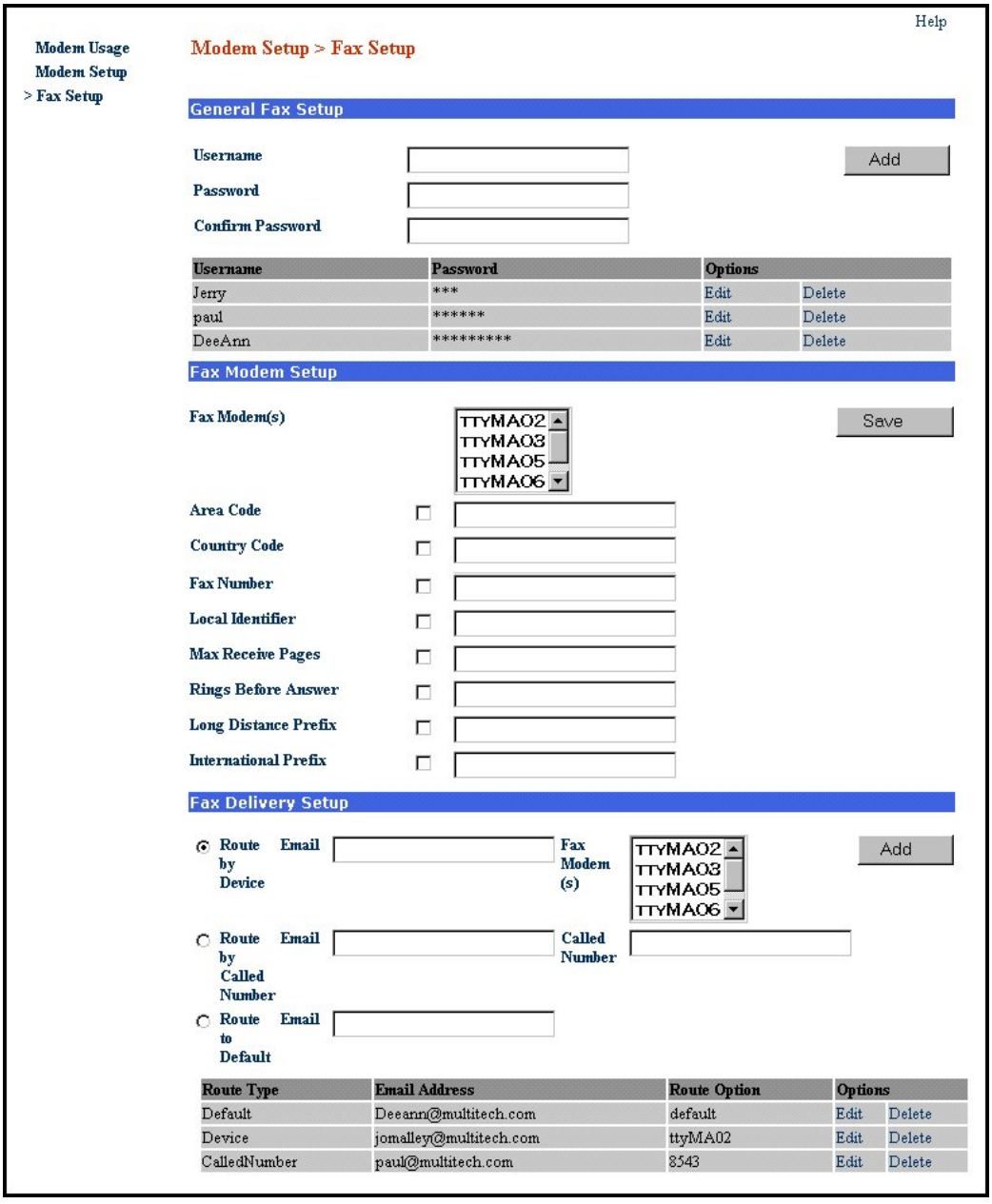
Fax Setup

Fax setup is initiated when you allocate modem(s) to the integrated Hylafax™ Fax Server. This is achieved by setting the selected modem's usage to Fax. The Fax Setup screen is used to configure the integrated Hlyfax Server for sending and receiving faxes.

The sending of outbound faxes via the Hylafax Server requires the use of a Hylafax compatible Fax Client software, e.g., Multi-Tech's FaxFinder Client. The General Fax Setup group is used to add Fax Clients to the Hylafax server.

The Fax Client must be installed on each workstation that you wish to send faxes from. The Fax Client must use the credentials defined in the General Fax Setup group to submit faxes for sending. The Fax Client is not used for receiving faxes.

Inbound faxes received from the T1/E1 digital line are converted to tiff files and then emailed from the Hylafax server to the specified recepient. The Fax Delivery Setup group is used to configure the routing of inbound faxes.



Outbound Fax Client Data Base

The outbound fax client data base is generated in the General Fax Setup group. The current outbound fax client data base is shown in the table at the bottom of the General Fax Setup group. The credentials defined here are to be used by the fax client. The fax client uses these credentials when accessing the Hylafax server.

1. To establish a fax client data base, enter each **user name** and **password** in their respective windows and click the **Add** button for each entry.

   Note: All fax clients can use the same set of credentials, or a unique set for each client can be added.

Fax Modem Settings

These settings are used to define the fax station identity and other administrative variables. The default settings are normally sufficient with the exception of the "Rings Before Answer" parameter. When the Called Number feature is used, the Rings Before Answer must be set to 2 for all the ports. Each Fax Modem is to be configured with a unique Local Identifier, which is used as the TSI (Transmit Station Identifier) when sending faxes and is included in the body of the email when receiving faxes. You can limit the maximum number of pages being received.

Inbound Fax Data Base

The Fax Delivery Setup group is used to configure the routing of inbound faxes. The current fax routing table is shown at the bottom of this group. Who the fax should be delivered to (routed to) is determined by one of two routing methods:

A) "Route by Device" (what tty port the fax was received on),

B) Route by Called Number" (number dialed by the remote sender).

Route by Device is a static delivery method, where all faxes that are received on that particular port will be sent to the email address defined for that port.

1. To deliver the fax based on the port (device) it was received on, select the radio button "Route by Device" and then highlight the ttyMXxx port(s) from the corresponding window in the Fax Delivery Setup group,
2. Enter the email address of the fax recipient in the Email window and then click add.

Route by Called Number is a dynamic delivery method that requires the use of a PRI line (T1-PRI or E1-PRI line type). Route entries are to match the DNIS information (provided by Telco per call) to an email address. The Telco switch will (via PRI signaling) provide DNIS digits to the MultiAccess at the time of ringing (call setup). How many digits will Telco be providing? The remote originator of the fax may dial 11 digits (1-800-333-4444) but Telco may only provide the last x number of digits (where x is commonly = 4). DNIS digits provided by Telco is a variable to be determined at the time of ordering and installing the PRI service. If no Called Number route entries can be matched to the DNIS provided for that call - the default route entry will be used.

1. To deliver the fax based on the number dialed, select the radio button "Route by Called Number".
2. Enter the email address of the fax recipient in the Email window.
3. Enter the DNIS string matching the number dialed and then click add.

The entry should be added to the route table found at the bottom of the screen.

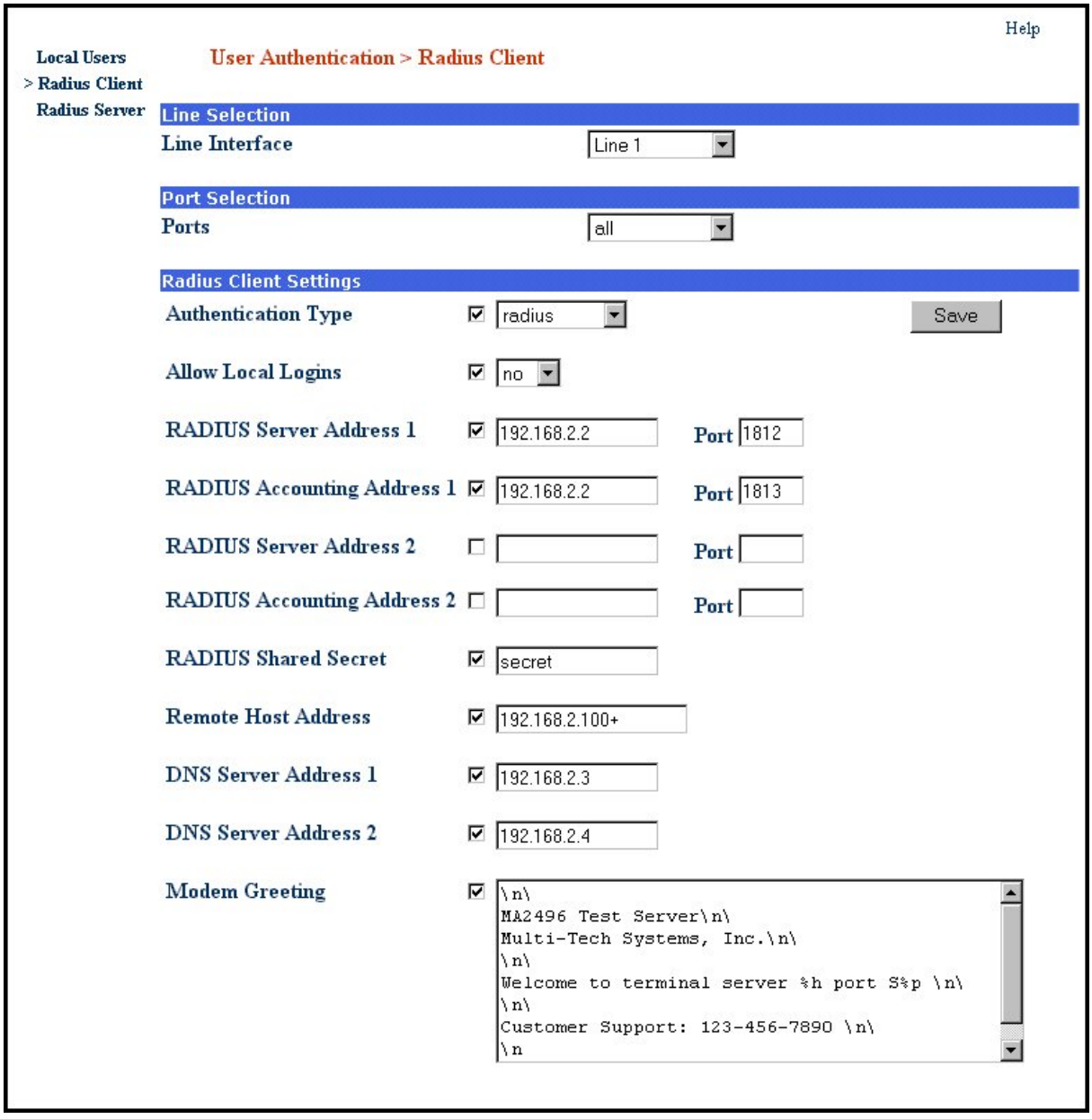
User Authentication

To determine User Authentication you must define how the Radius Client is going to be used, that is, are you using an external Radius Server on your network or are you going to use the Radius Server in the MultiAccess. The Radius Client can point to either an external Radius Server or the Radius Server within the MultiAccess.

Note: When using the internal Radius Server, you must use the IP address of network card 1 (eth0).

Radius Client

1. Choose **User Authentication >Radius Client**.
2. Click on **Line Interface** and select the Line number you selected up in the Line Interface screen.



3. You can choose an Authentication Type, but Multi-Tech recommends leaving the Authentication Type at the default radius.
4. We recommend that you leave Allow Local Logins set to the default of **no**.

Catuion: If you change this to yes and put a "!" before the login name, you could be setting up a potential security risk. You can use this in an **emergency situation** if your radius server goes down.

5. Enter the IP address of your main Radius server in **RADIUS Server Address 1** window.

Note: When using the internal Radius Server, both server and client must used the IP address network card 1 (eht0).

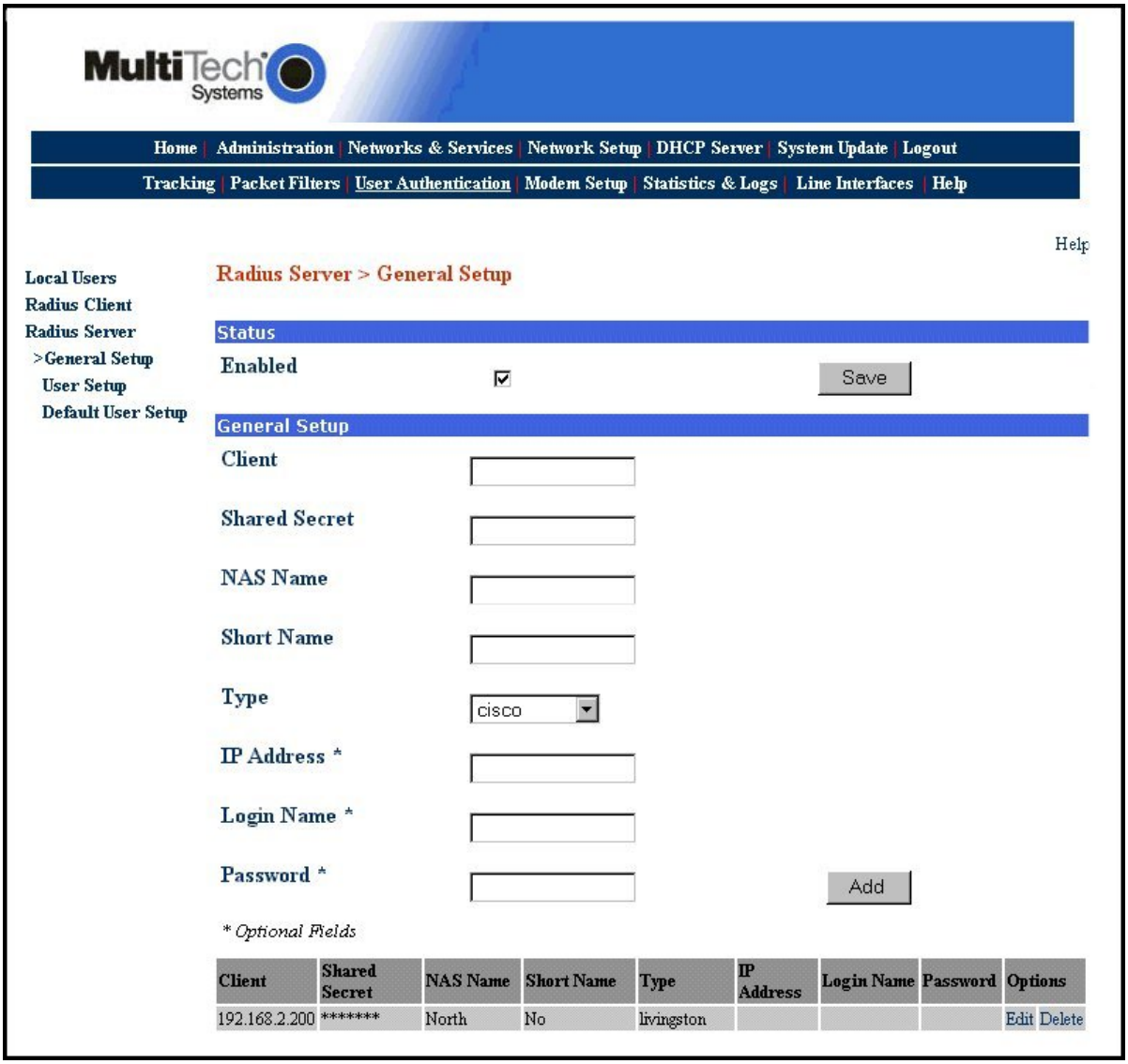
6. Enter the UDP port number used by your main Radius server in the first **Port** window.
7. Enter the IP address of your main Radius Accounting host in the **RADIUS Accounting Address 1** window.
8. Enter the UDP port number used by your main Radius Accounting host in the second **Port** window.
9. If you have a second (backup) Radius server, enter the IP address for the backup Radius server in the **RADIUS Server Address 2** window. Follow that by enterring the port number of the backup Radius server in the third **Port** window. Then enter the backup Radius Accounting host in the **RADIUS Accounting Address 2** window followed by the port number for the backup host in the fourth **Port** window.
10. Enter the Shared Secret for the Radius Server in the **RADIUS Shared Secret** window.
11. In the **Remote Host Address** window, set this field to the starting IP address of your IP address pool (addresses that are to be assigned to the dial in users). The IP address needs to have a + (plus symbol) after the number (e.g., 192.168.1.150+). The plus symbol instructs "Portslave" to create an address pool starting with the address you enterred. Portslave determines the "ending" address number by adding up all the Line Interface selections that have their "Port Selection" set to "All". If the MultiAccess server has multiple line interface modules and all ports are to use an address pool, set this field to the same address (192.168.1.150+) for each line interface.
12. Enter the IP address of your primary name server in the **DNS Server Address 1**. This establishes the name server for remote access users. If you have a backup DNS server, enter the IP address of your backup DNS Server in the DNS Server Address 2 window.
13. Click the Save button when you are finished.
14. Repeat the above procedure for each line interface.

Radius Server > General Setup

If you are going to use the Radius Server that comes with your MultiAccess, then you need to tell the Radius Server who the Radius Clients are. You need one entry for each Network Access Server (NAS) in your network.

Note: When using the internal Radius Server, you must use the IP address of network card 1 (eth0).

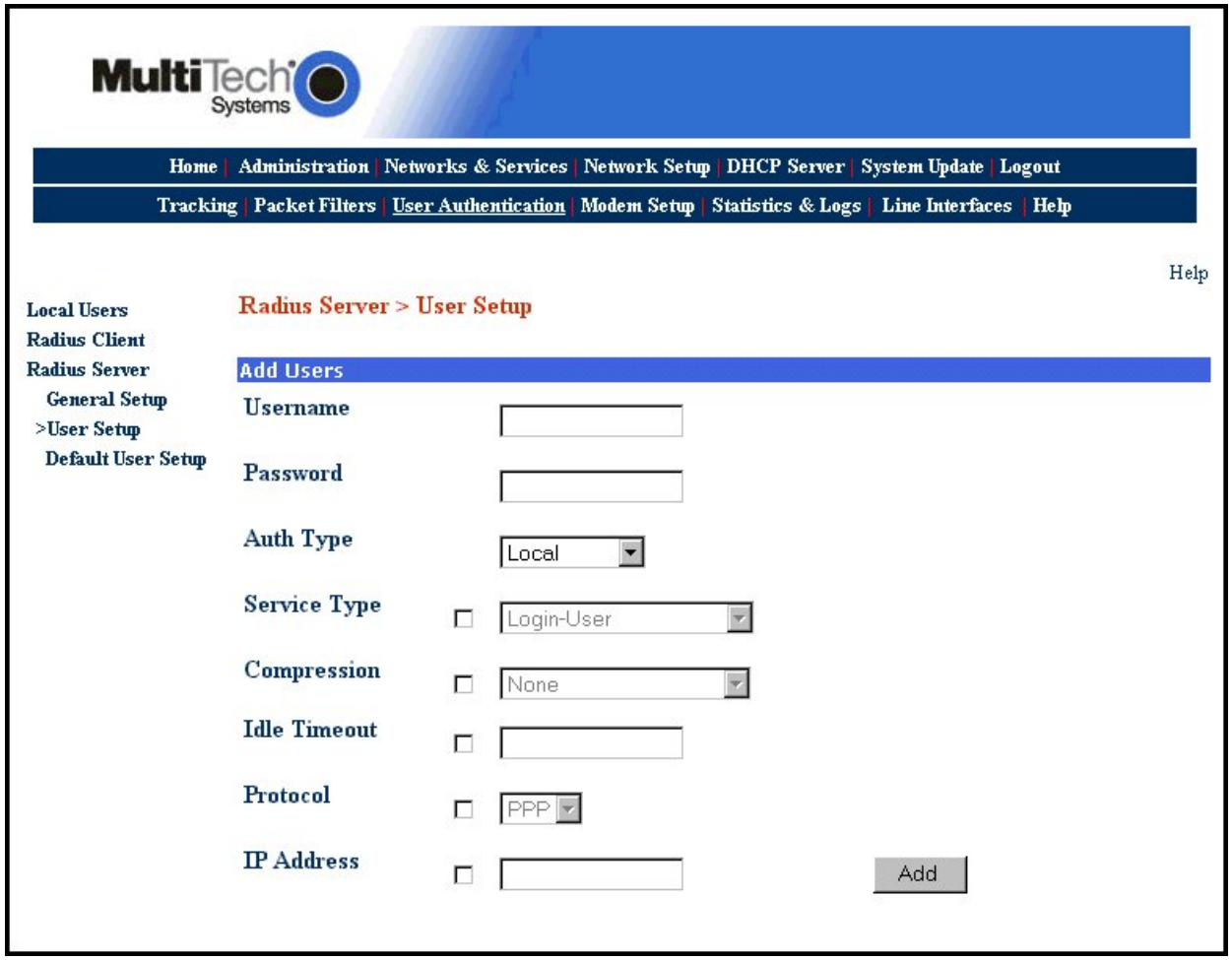
1. You can enable the Radius Server by clicking on the **Enabled** window and then clicking on the Save button activates the server.
2. Enter the IP address of network card 1 (eht0) in the **Client** window. This IP address tells the Radius Server where the Radius Client is located.
3. Enter the same Radius Server Secret used in the Radius Client screen into the **Shared Secret** window. The Shared Secret in the Radius Server and the Radius Server Secret in the Radius Client have to be the same in order for the two to communicate.
4. You can enter an arbitrary name, unique name for each NAS in the **Short Name** window.
5. Select the manufacture of radius client/NAS that is being used in your system from the **Type** drop down arrow. For example, multitech, livingston, or etc.
6. The three optional items are to restrict simultaneous logins.
7. Click **Add** when you are finished.



Radius Server > User Setup

The User Setup screen establishes who the remote access user is. A user name and password has to be enterred for each remote user that is dialing in to the MultiAccess. The User name and password of the remote user is all that is needed initially. If you check or enable Service Type through IP Address windows you will over ride the Default User Setup.

1. Enter the remote user's name in the **Username** window.
2. Enter the password of the remote user in the **Password** window.
3. The Authentication Type should remain at the default setting.
4. Click the **Add** button when you are finished.



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