TracNet 100

User's Guide Supplement - Advanced Router Setup

This supplement to the *TracNet 100 User's Guide* provides detailed instructions on configuring the TracNet 100 router using the router interface.

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1 Getting Started

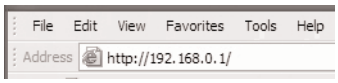
This section explains how to access the router setup menu on the TracNet 100.

Accessing the Router Setup Menu

To make changes to your router's network configuration, you need to access the TracNet 100 router setup menu.

1. Open your web browser and enter the following URL:

   http://192.168.0.1



2. Enter "admin" in the User Name box.
3. Leave the Password blank.
4. Click **OK**.

Be sure to connect your laptop computer directly to the TracNet 100 receiver using a straight (not crossover) Ethernet cable. Do not try to access the router setup screen via a wireless connection.

Making Setup Changes

When you make a change to the settings on a particular menu screen, be sure to click the **Apply** button to save your changes. **When you are done making changes, you must turn the TracNet 100 receiver off, then back on, for the new settings to take effect.**

To cancel your changes, click the **Cancel** button.

To bring up helpful information about the current menu screen, click the **Help** button.

2 Basic Settings

Basic > Wizard

The router setup wizard walks you through a basic network setup, step by step. To start the wizard, click the **Run Wizard** button.

For complete details about using the router setup wizard, refer to Section 4.3 of the *TracNet 100 User's Guide*.

Basic > Wireless (Security = None)

Wireless Mode

Select Enabled if you want to set your Wireless Access Point (WAP) settings. [Factory Default = Enabled]

SSID

The service set identifier (SSID) is the name designated for your wireless local area network (WLAN). You can change the SSID to any name you wish. SSID names can contain up to 32 ASCII characters. **The SSID is case-sensitive.** [Factory Default = KR1]

Channel

Devices on the same network must share the same channel. If Auto Select is checked, your wireless adapters will automatically scan and match your wireless settings. Or you may select a specific channel to use. [Factory Default = Auto Select]

Security

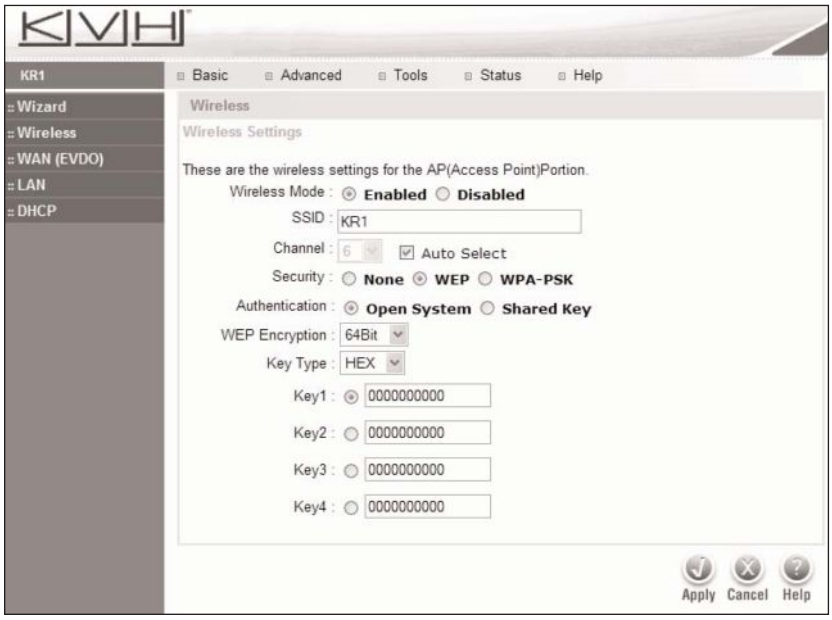
You can select from three levels of encryption to secure your wireless network:

- None (no encryption)
- WEP
- WPA-PSK

KVH recommends that you select WPA-PSK to protect your network from outside intrusion. [Factory Default = None]

If you select WEP or WPA-PSK encryption, be sure these settings match your laptop's WiFi adapter settings. WiFi and encryption settings must match in order to connect via TracNet 100. Refer to the instructions that came with your WiFi adapter for details.

Basic > Wireless (Security = WEP)



The WEP option (Wired Equivalent Privacy) encrypts your wireless data to protect it from unauthorized interception.

Authentication

Select Shared Key and enter a 10-character key to create an authenticated secure network between your WLAN host and the TracNet 100 router. **If Authentication is set to Open System, your network will not be secure.** [Factory Default = Open System]

Some older WiFi adapters might not support 128-bit encryption.

WEP Encryption

Choose between two levels of wireless encryption:

- 64 Bit
- 128 Bit - provides the highest level of security

Key Type

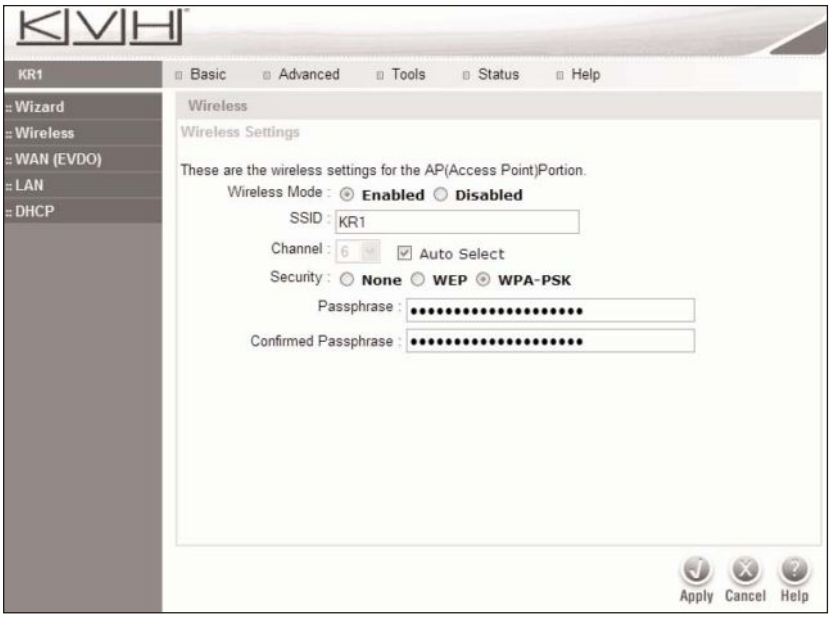
Choose between two types of keys:

- Hex
- ASCII

Key1-Key4

You may enter up to four authentication keys. Keys must be 10 alpha-numeric characters in length. Also select which key to use for security.

Basic > Wireless (Security = WPA-PSK)



The WPA-PSK option (WiFi Protected Access-Phase-Shift Keying) authenticates users of your wireless network using a passphrase.

Some older WiFi adapters might not support WPA-PSK authentication.

Passphrase

Enter a unique passphrase to enable WPA-PSK. The passphrase is alphanumeric and must be between 8 and 63 characters in length.

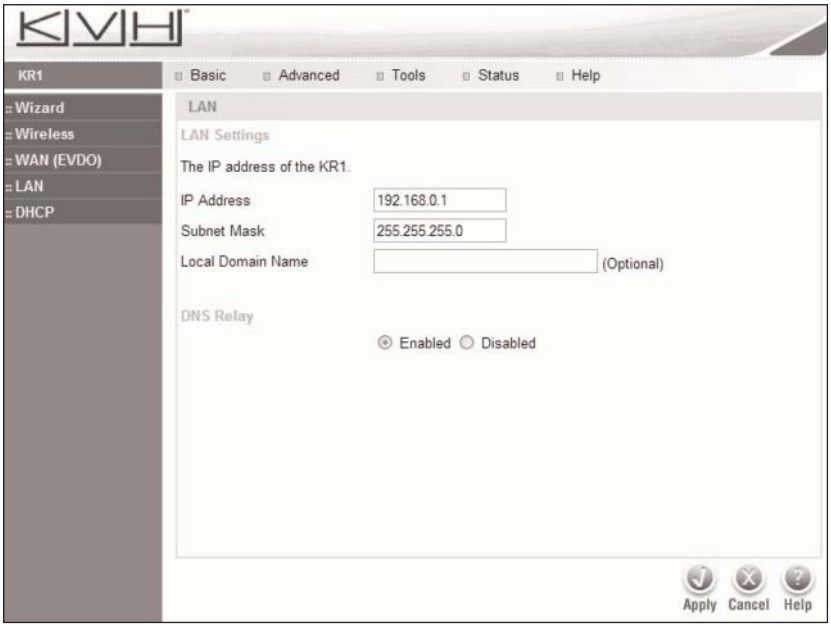
Confirm Passphrase

Re-enter your passphrase to confirm.

Basic > WAN (EVDO)

A user name and password is not required with TracNet 100. Therefore, you should leave these fields blank. No changes are required to this screen.

Basic > LAN



The Local Area Network (LAN) is your internal TracNet 100 network, including the Internet receiver and any computers that are networked to it. This screen shows the IP address of the TracNet 100 router, which is private to your internal network and cannot be seen on the Internet.

IP Address

The IP address of the LAN interface.
[Factory Default = 192.168.0.1]

Subnet Mask

The subnet mask of the LAN interface.
[Factory Default = 255.255.255.0]

Local Domain

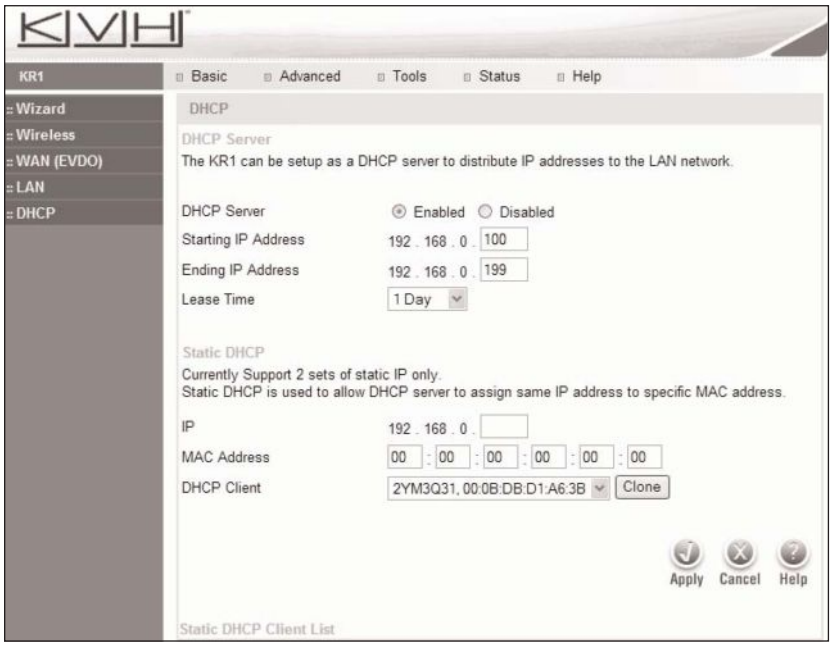
Enter a local domain name, if desired.
[Factory Default = Blank]

DNS Relay

Keep the Domain Name Server (DNS) relay enabled at all times. This service allows you to enter domain names, such as "www.kvh.com," into your web browser instead of numeric IP addresses. [Factory Default = Enabled]

With a subnet of 255.255.255.0, the TracNet 100 router has 254 available addresses. For example, the TracNet 100 router's IP address is 192.168.0.1, while the available client IP range is 192.168.0.2 through 192.168.0.254.

Basic > DHCP



Be sure to set up your networked computers as DHCP clients. Set their TCP/IP settings to "Obtain an IP Address Automatically."

The TracNet 100 Internet Receiver includes a built-in DHCP (Dynamic Host Control Protocol) server. This server automatically assigns IP addresses to your networked computers. Whenever you turn on a networked computer, your computer automatically loads the proper TCP/IP settings provided by the TracNet 100 router. TracNet 100 allocates unused IP addresses from the IP address pool that you configure as noted below.

DHCP Server

You can choose to enable or disable the DHCP server. Except in rare cases, the DHCP server should be set to Enabled.
[Factory Default = Enabled]

Starting IP Address

Enter the starting IP address for the DHCP server's IP assignments.

Ending IP Address

Enter the ending IP address for the DHCP server's IP assignments.

Lease Time

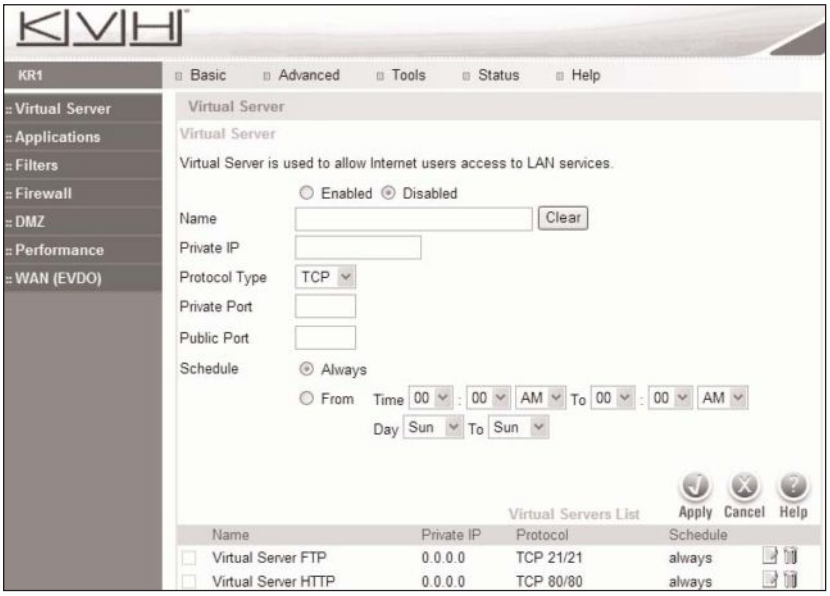
The duration of the IP lease.
[Factory Default = 1 Day]

Static DHCP

NOT USED.

3 Advanced Settings

Advanced > Virtual Server



You can configure the TracNet 100 router as a virtual server so that remote users accessing web or FTP services via the public IP address can automatically be redirected to local servers in your LAN (Local Area Network).

The TracNet 100 router's firewall feature filters out unsolicited packets to protect your LAN, so all computers networked with TracNet 100 are invisible to the outside world. However, if you wish, you can make some of your LAN computers accessible from the Internet by enabling the Virtual Server. Depending on the requested service, the TracNet 100 router redirects the external service request to the appropriate server within your LAN.

The TracNet 100 router is also capable of port redirection, by which incoming traffic to a particular port can be redirected to a different port on the server computer.

Each virtual service created is listed at the bottom of the screen in the Virtual Servers List. Predefined virtual services are already in the table. You can use them by enabling them and assigning the server to use that particular virtual service.

Virtual Server

You can choose to enable or disable the virtual server.
[Factory Default = Disabled]

Name

Enter the name of the virtual service.

Private IP

Enter the IP address of the server computer in your LAN that provides virtual services.

Protocol Type

Select the protocol type used for the virtual service.

Private Port

Enter the port number of the service used by the private IP computer.

Public Port

Enter the port number of the WAN (Wide Area Network) side that is used to access the virtual service.

Schedule

Set the schedule of time when the virtual service gets enabled. If you set the schedule to Always, the particular service will always be enabled. Or you can set the schedule to a range of times for the service to be enabled. If the system time is outside of the scheduled time, the service is disabled.

Example #1

If you have a Web server that you want Internet users to access at all times, you would need to enable it.

Web (HTTP) server is on LAN (Local Area Network) computer 192.168.0.25. HTTP uses port 80, TCP.
Name: Web Server
Private IP: 192.168.0.25
Protocol Type: TCP
Private Port: 80
Public Port: 80
Schedule: always

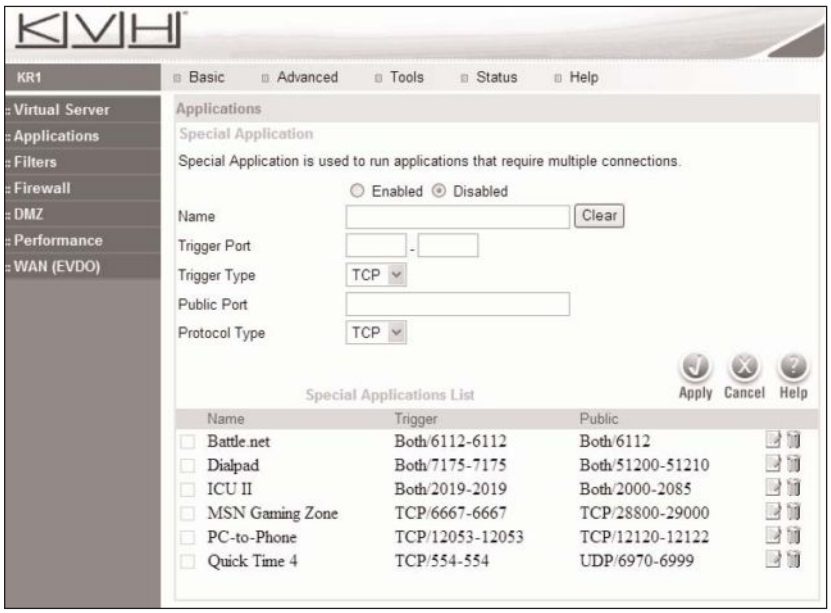
Example #2

If you have an FTP server that you want Internet users to access by WAN port 2100 and only during the weekends, you would need to enable it as such.

FTP server is on LAN computer 192.168.0.30.
FTP uses port 21, TCP.
Name: FTP Server
Private IP: 192.168.0.30
Protocol Type: TCP
Private Port: 21
Public Port: 2100
Schedule: From: 01:00AM to 01:00AM, Sat to Sun

All Internet users who want to access this FTP Server must connect to it from port 2100. This is an example of port redirection and can be useful in cases where there are many of the same servers on the LAN network.

Advanced > Applications



Some applications require multiple connections, such as Internet gaming, video conferencing, Internet telephony, and others. These applications do not work well through NAT (Network Address Translation). Special Applications makes some of these applications work with the TracNet 100 router. If you need to run applications that require multiple connections, specify the port normally associated with an application in the "Trigger Port" field, select the protocol type as TCP or UDP, then enter the public ports associated with the trigger port to open them for inbound traffic.

Only one PC can use each Special Application tunnel.

The TracNet 100 router provides some predefined applications in the table on the bottom of the page. Select the application you want to use and enable it.

Name

Enter a name for the special application.

Trigger Port

Enter the port(s) used to trigger the application. You may enter either a single port or a range of ports.

Trigger Type

Select the protocol used to trigger the special application. [Factory Default = TCP]

Public Port

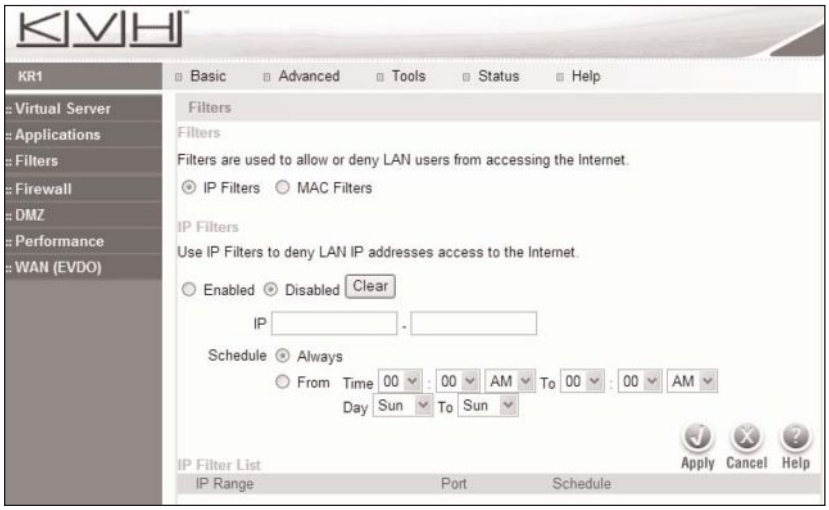
Enter the port number on the WAN side that is used to access the application. You may define a single port or a range of ports. Use a comma to add multiple ports or port ranges.

Protocol Type

Select the protocol used for the special application.
[Factory Default = TCP]

Refer to the documentation that came with your special application for more specific details.

Advanced > Filters (IP Filters)



You can use Filters to deny or allow certain LAN (Local Area Network) computers from accessing the Internet.

Filters

You can set up the TracNet 100 router to deny internal computers by their IP or MAC addresses (in this case, IP Filters). TracNet 100 can also block users from accessing restricted web sites. [Factory Default = IP Filters].

IP Filters

Enable IP Filters to deny LAN IP addresses from accessing the Internet. [Factory Default = Disabled]

IP

Enter the IP address or range of IP addresses of the LAN computer(s) that is denied access to the Internet.

Schedule

Set the schedule of time when the IP Filter gets enabled. [Factory Default = Always]

Advanced > Filters (MAC Filters)

Use MAC (Media Access Control) Filters to allow or deny LAN (Local Area Network) computers by their MAC addresses from accessing the network. You can either manually add a MAC address or select the MAC address from the list of clients that are currently connected to the TracNet 100 router.

Filters

Select the filter you wish to use. In this case, select MAC Filters.

MAC Filters

Choose Disable MAC filters, Allow MAC addresses listed below, or Deny MAC addresses listed below.
[Factory Default = Disabled MAC Filters]

Name

Enter the name of the LAN computer that is denied access to the Internet.

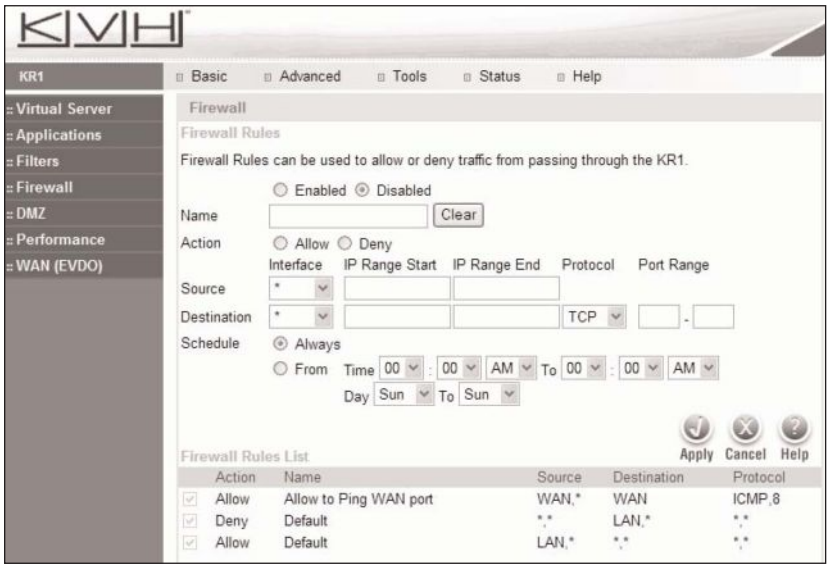
MAC Address

Enter the MAC Address of the LAN computer that is denied access to the Internet.

DHCP Client

Select a DHCP client from the drop-down menu. Click the **Clone** button to copy that MAC Address.

Advanced > Firewall



Firewall Rules allows you to deny or allow traffic from passing through the TracNet 100 router. It works in the same way as IP Filters, but with additional settings that allow you to create more detailed access rules. When virtual services are created and enabled, it also displays in Firewall Rules. Firewall Rules contain all network firewall rules pertaining to IP (Internet Protocol).

The TracNet 100 router's MAC Address filtering rules have precedence over the Firewall Rules.

In the Firewall Rules List at the bottom of the screen, the priorities of the rules are from top (highest) to bottom (lowest).

Firewall Rules

Enable or disable the firewall. [Factory Default = Disabled]

Name

Enter the name of the firewall.

Action

Select Allow or Deny.

Source

Enter the IP Address range.

Destination

Enter the IP address range, the protocol, and the port range. [Factory Default = TCP]

Schedule

Select Always or enter a time range. [Factory Default = Always]

Advanced > DMZ

If you have a client PC that cannot run Internet applications properly from behind the TracNet 100 router, then you can set up the client for unrestricted Internet access. This allows a computer to be exposed to the Internet and is useful for gaming purposes. Simply enter the IP address of your internal computer that will be the DMZ host.

Adding a client to the DMZ may expose your local network to a variety of security risks. Use this option only as a last resort.

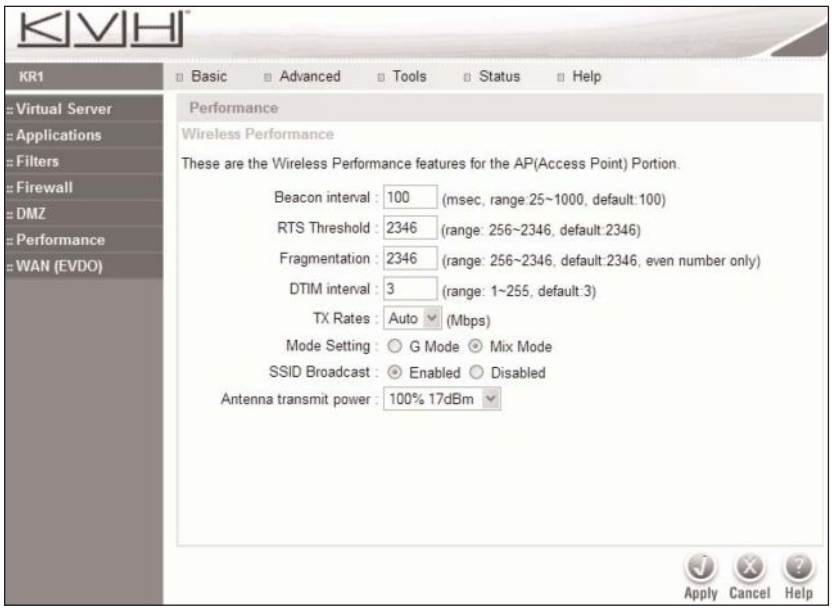
DMZ

Enable or disable the DMZ. The DMZ (Demilitarized Zone) allows a single computer to be exposed to the Internet. [Factory Default = Disabled]

IP Address

Enter the IP address of the computer you want to be in the DMZ.

Advanced > Performance



Displayed in this window are the wireless performance features for the access point portion of the TracNet 100 router.

Beacon Interval

Beacons are packets sent by an access point to synchronize a wireless network. You can specify a value, but KVH recommends that you keep it set to 100 (factory default).

RTS Threshold

This value should remain at its factory default setting of 2312. If inconsistent data flow is a problem, only a minor modification should be made.

Fragmentation

The fragmentation threshold, which is specified in bytes, determines whether packets get fragmented. Packets exceeding the 2346 byte setting are fragmented before transmission. [Factory Default = 2346]

DTIM interval

A DTIM (Delivery Traffic Indication Message) is a countdown informing clients of the next window for listening to broadcast and multicast messages. [Factory Default = 3]

TX Rates

Select a transmission (TX) rate. KVH recommends that you keep this set to Auto.

Mode Setting

Select G Mode if your wireless network consists of only 802.11g clients. If your wireless network includes 802.11b clients, select Mix Mode.

SSID Broadcast

Choose Enabled to broadcast the SSID across the network. All devices on a network must share the same SSID (Service Set Identifier) to establish communication. Choose Disabled if you do not want to broadcast the SSID over the network. [Factory Default = Disabled]

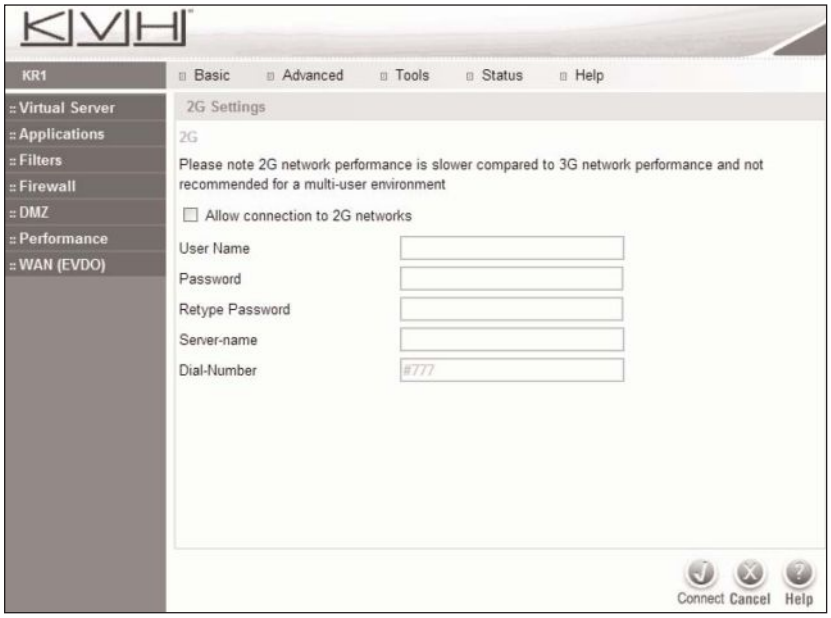
Antenna Transmit Power

Antenna transmit power is the level at which your TracNet 100 router's Wireless Access Point (WAP) transmits the wireless signal. You may select from the following four options:

- 100% 17 dBm
- 50% 15 dBm
- 25% 12 dBm
- 12.5% 10 dBm

Select 100% 17 dBm if you desire a larger wireless coverage area. Select 12.5% 10dBm for a smaller wireless coverage area. [Factory Default = 100% 17 dBm]

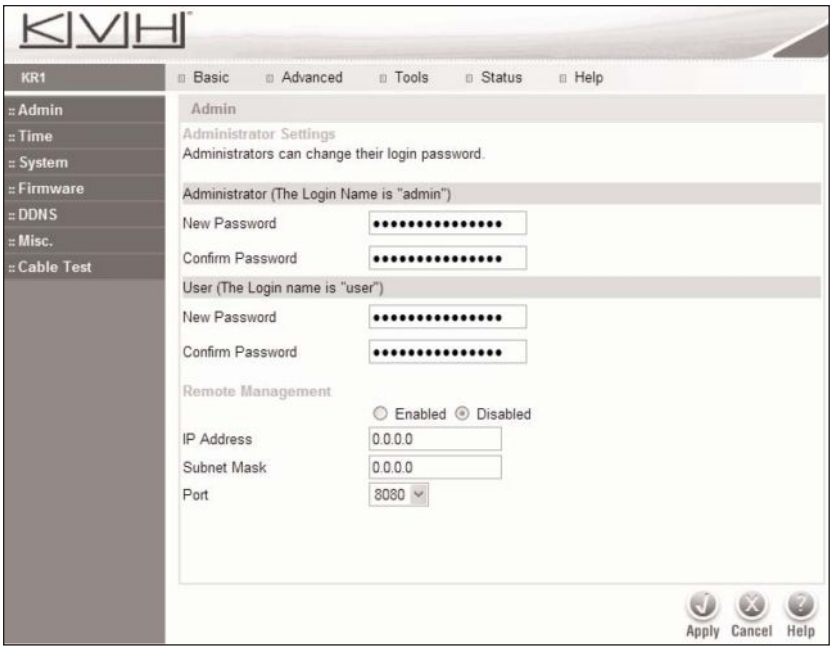
Advanced > WAN (EVDO)



A user name and password is not required with the TracNet 100. Therefore, you should leave these fields blank. No changes are required.

4 Tools

Tools > Admin



The Tools > Admin menu allows an administrator to change the system password.

Two account options are available: Admin and User. The Admin account option allows read/write access. The User account option allows for read-only access only, meaning the user can view settings, but cannot make any changes.

Administrator

The Administrator login name is “admin.” Enter the password, then re-enter it for confirmation.

User

The User login name is “user.” Enter the password, then re-enter it for confirmation.

Remote Management

Remote management allows the TracNet 100 router to be configured from the Internet by a web browser. A username and password is still required to access the Web-Management interface. In general, only a member of your network can browse the built-in web pages to perform Administrator tasks. This feature enables you to perform Administrator tasks from the remote (Internet) host.

IP Address

Enter the Internet IP address of the computer that has access to the TracNet 100 router. If you input an asterisk (*) into this field, then any computer is able to access it. **Putting an asterisk (*) into this field would present a security risk and is not recommended.**

Subnet Mask

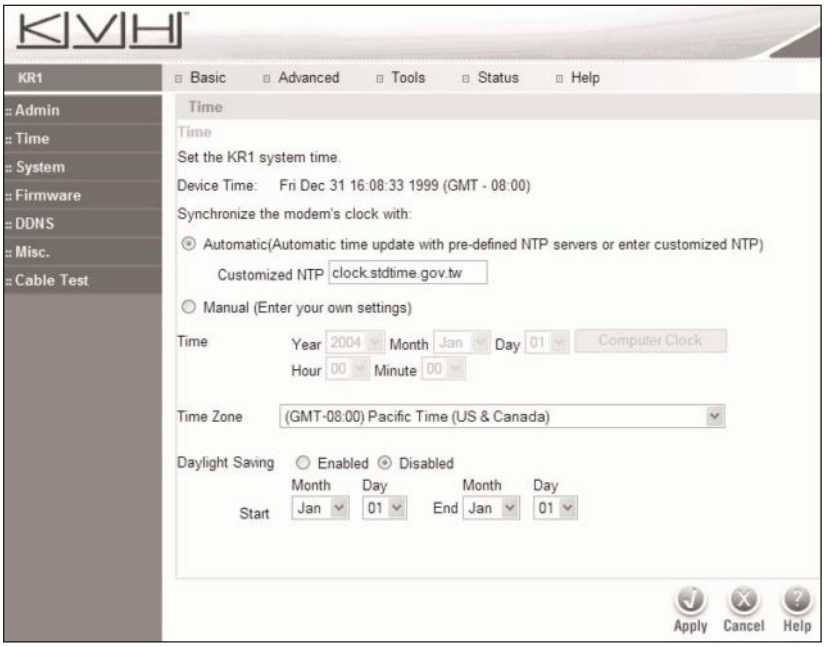
All the devices in the network must share the same subnet mask.

Port

Enter the port number used to access the TracNet 100 router.

Example
http://x.x.x.x:8080 where x.x.x.x is the WAN IP address of the TracNet 100 router and 8080 is the port used for the Web-Management interface.

Tools > Time



Synchronize the modem's clock with

NTP (Network Time Protocol) synchronizes computer clock times in a network of computers. You can either manually set the time or have it set automatically. [Factory Default = Automatic]

Time

To manually input the time, enter the values in the Year, Month, Day, Hour, and Minute fields. Then click the **Set Time** button.

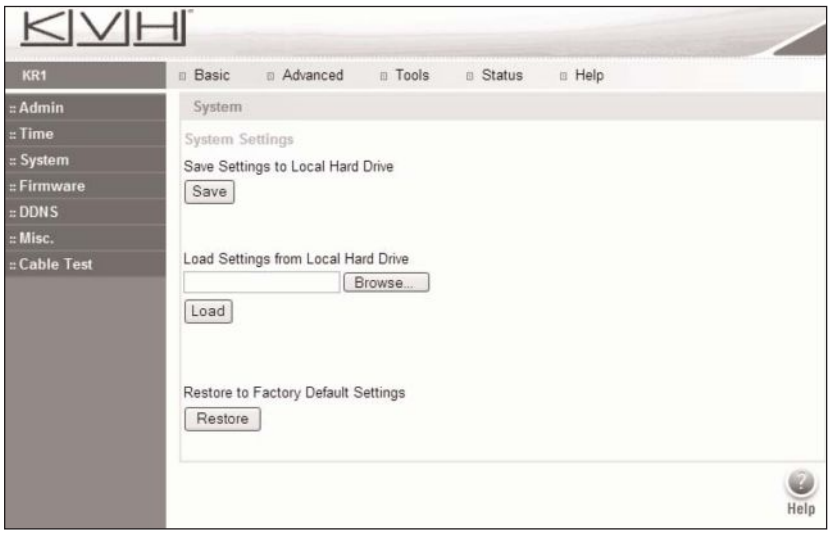
Time Zone

Select your time zone from the drop-down menu.

Daylight Saving

Select Enabled if you want the router to automatically adjust the time for Daylight Savings. Set the Month/Day fields to the range of affected dates. [Factory Default = Disabled]

Tools > System



The current system settings can be saved as a file onto your local hard drive. The saved file, or any other saved settings file, can then be loaded back on the TracNet 100 router. To reload a system settings file, click the **Browse** button to browse the local hard drive and locate the system file to be used. You may also reset the TracNet 100 router back to factory settings by clicking the **Restore** button.

Save Settings to Local Hard Drive

Click the **Save** button to save the current settings to the local hard drive.

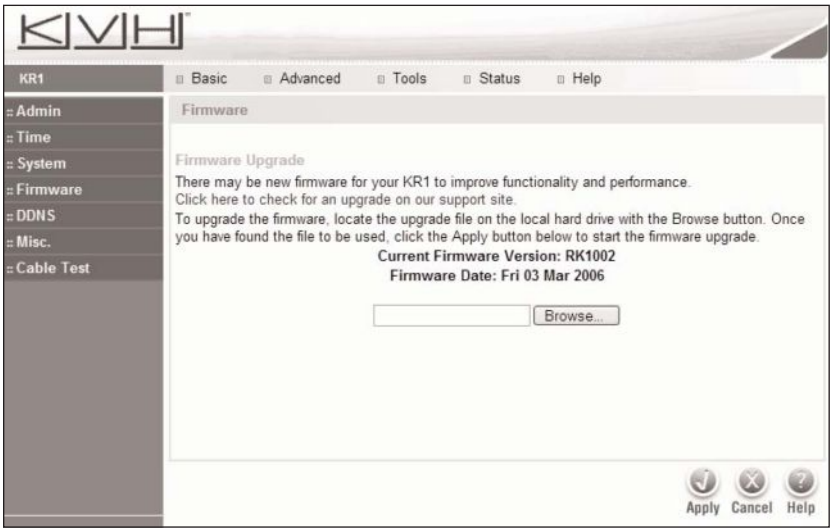
Load Settings from Local Hard Drive

Click the **Browse** button to find the settings, then click the **Load** button.

Restore to Factory Default Settings

Click the **Restore** button to restore the factory default settings.

Tools > Firmware

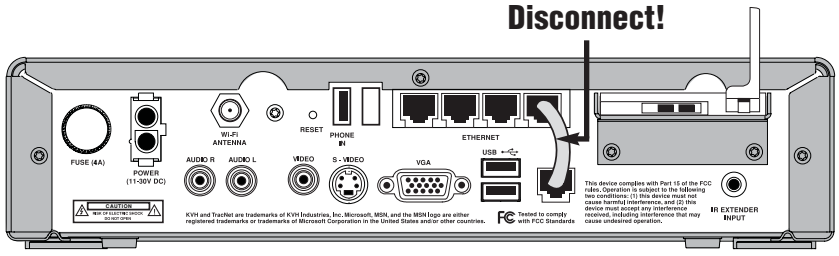


This screen allows you to upgrade the firmware of the TracNet 100 router.

If you registered your product at **www.kvh.com/register**, you will be notified by e-mail whenever new firmware becomes available.

IMPORTANT! – Disconnect Patch Cable from Port #1

Before you begin the firmware upgrade process, disconnect the short Ethernet patch cable from Ethernet port #1 (shown below). This cable, which provides the MSN TV connection, must be removed before upgrading firmware. **If you upgrade the firmware with this cable attached, you will destroy the TracNet 100 router!**



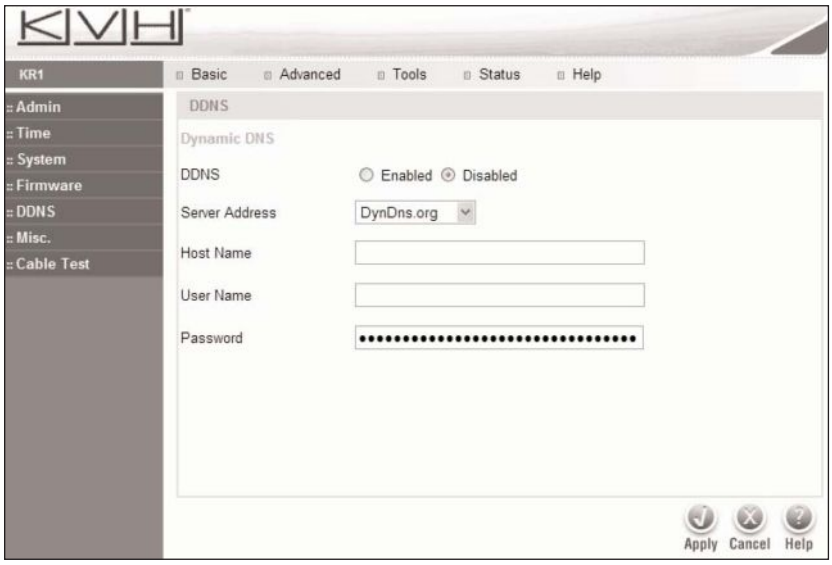
If you are using a laptop, be sure to connect the laptop to the TracNet 100 receiver using a straight Ethernet cable. You cannot use a wireless connection for firmware upgrades. Also be sure to disconnect the short Ethernet patch cable from receiver port #1 before you begin the upgrade.

Browse

After you have downloaded the new firmware, click the **Browse** button to locate the firmware update on your hard drive. Then click the **Apply** button to complete the firmware upgrade.

The firmware upgrade process will take 3-5 minutes to complete.

Tools > DDNS



DDNS

Select Enabled to use the DDNS (Dynamic Domain Name Server) to update the client built into the router.
[Factory Default = Disabled]

Server Address

Choose your DDNS provider from the drop-down menu.

Host Name

Enter the Host Name that you registered with your DDNS service provider.

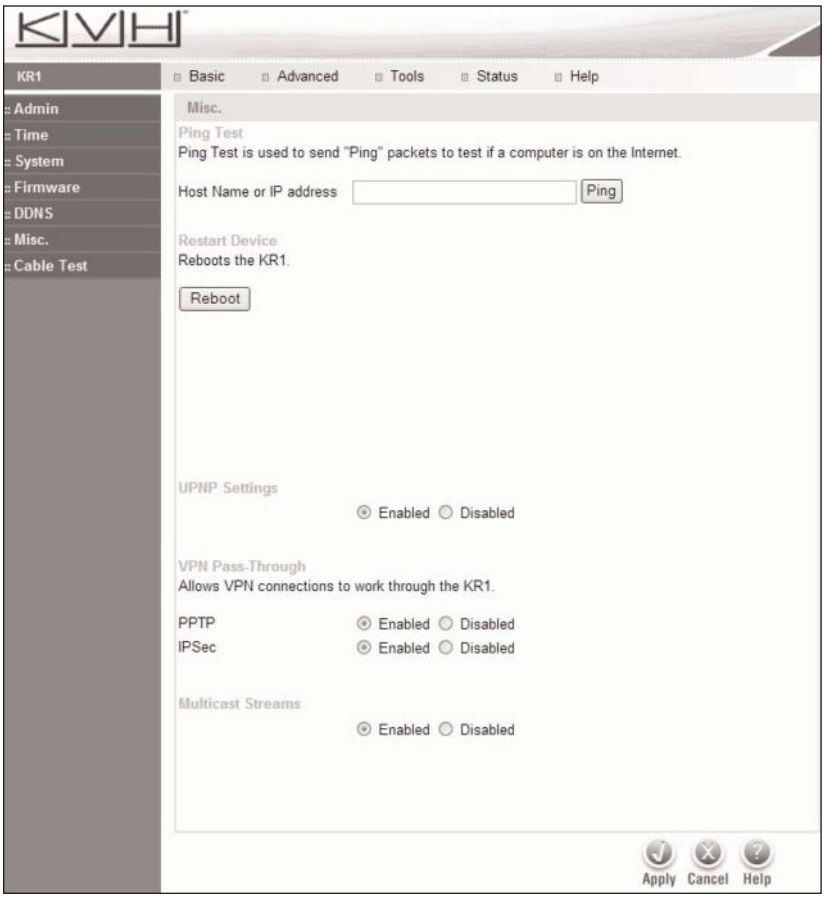
User Name

Enter the User Name for your DDNS account.

Password

Enter the Password for your DDNS account.

Tools > Misc



Ping Test

Run the Ping Test to test a computer's Internet connection. Enter the IP Address that you wish to Ping, then click the **Ping** button.

Restart Device

Click the **Reboot** button to restart the TracNet 100 router. This will take a few minutes.

UPNP

Select Enabled to use the UPNP (Universal Plug and Play) feature. UPNP provides compatibility with the networking equipment, software, and peripherals of the over 400 vendors that participate in the Plug and Play forum.
[Factory Default = Enabled]

VPN Pass Through

The TracNet 100 router supports VPN (Virtual Private Network) pass-through for both PPTP (Point-to-Point Tunneling Protocol) and IPSec (IP Security). Once VPN pass-through is enabled, there is no need to open up virtual services. Multiple VPN connections can be made through the TracNet 100 router. This is useful when you have many VPN clients on the LAN network.

PPTP

Select Enabled or Disabled. [Factory Default = Enabled]

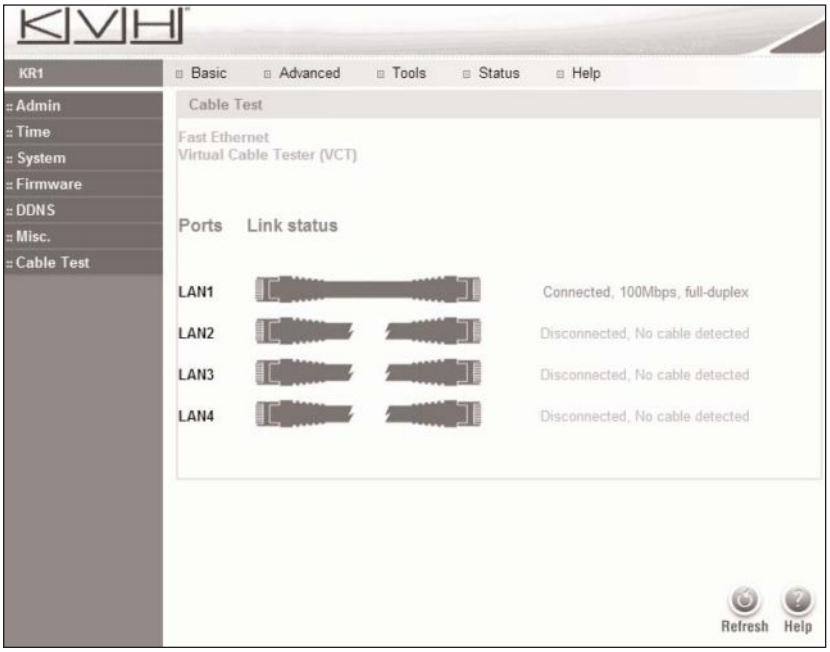
IPSec

Select Enabled or Disabled. [Factory Default = Enabled]

Multicast Streams

Enable this option to allow Multicast traffic to pass through the TracNet 100 router from the Internet.

Tools > Cable Test

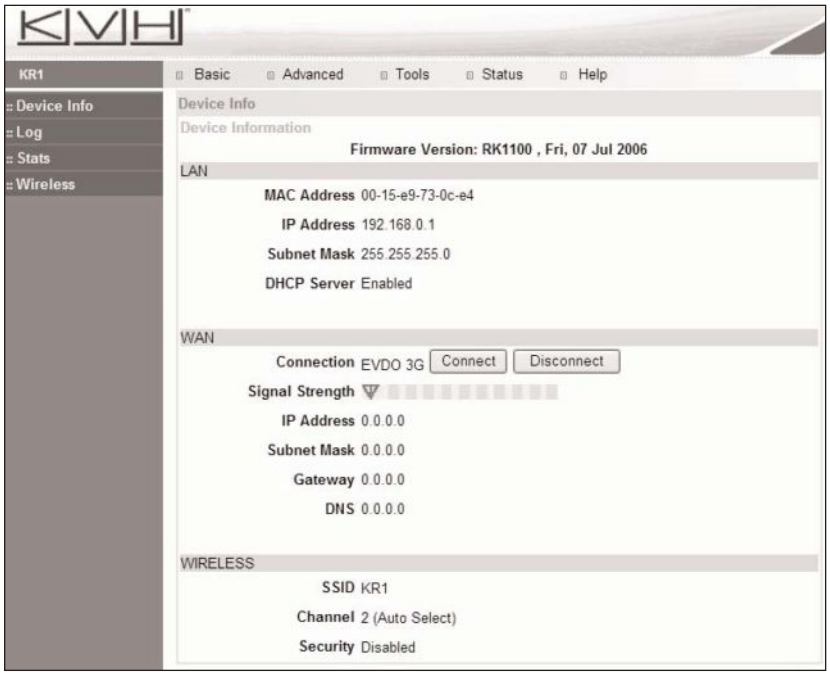


This screen displays the current information for the TracNet 100 router, which will assist you in troubleshooting your network. It shows which port(s) of the TracNet 100 Internet receiver is currently connected.

LAN1 should always indicate "connected." The TracNet 100 receiver's #1 Ethernet port is reserved for your MSN TV connection.

5 Status Information

Status > Device Info



This screen displays the current LAN, WAN, and WIRELESS information for the TracNet 100 router. A connection to the EVDO network will be established when the unit is powered on. Click the **Disconnect** button to disconnect from the EVDO network; click the **Connect** button to establish a connection.

LAN

Address: Displays the MAC address of TracNet 100
IP Address: LAN/Private IP Address of TracNet 100
Subnet Mask: LAN/Private Subnet Mask of TracNet 100
DHCP Server: Shows status of the DHCP server

WAN information is available only if you are connected.

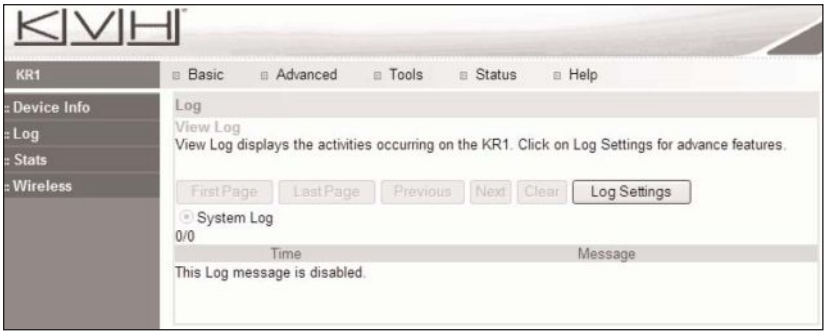
WAN

Connection: Shows your type of WAN connection
Signal Strength: Shows status of the WAN connection
IP Address: WAN/Public IP Address
Subnet Mask: WAN/Public Subnet Mask
Gateway: WAN/Public Gateway IP Address
Domain Name Server: WAN/Public DNS IP Address

WIRELESS

SSID: Displays the current SSID
Channel: Displays the current SSI channel
WEP: Shows status of the WEP

Status > Log



The TracNet 100 router keeps a running log of events and activities.

Click the **Log Settings** button. The following menu appears.

First Page

Click the **First Page** button to view the first page of the log.

Last Page

Click the **Last Page** button to view the last page of the log.

Previous

Click the **Previous** button to move back one log page.

Next

Click the **Next** button to move forward one log page.

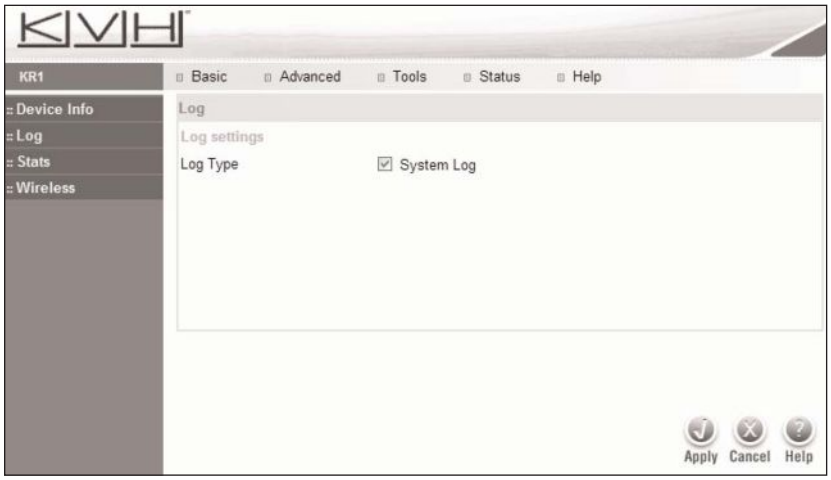
Clear

Click the **Clear** button to clear the logs completely.

Log Settings

Click the **Log Settings** button to bring up the log configuration page.

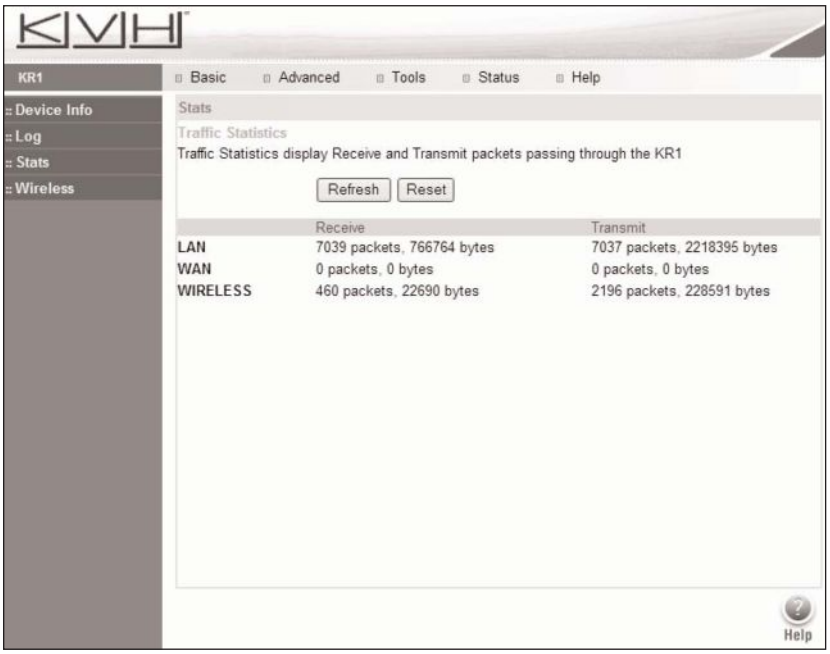
Status > Log (Log Settings)



When you reboot the TracNet 100, the logs are automatically cleared.

Check the box next to System Log, then click the **Apply** button to display the TracNet 100 router's log settings.

Status > Stats



This screen displays the Traffic Statistics, where you can view the amount of packets that pass through the TracNet 100 router on both the WAN and the LAN Ports. The traffic counter resets if the device is rebooted.

Status > Wireless

This screen displays a current list of connected wireless clients. This table also displays the connection time and MAC address of the connected wireless client.

6 Getting Help

Help > Help Menu

Select Help at any time to view more information about the TracNet 100 router's functions.

Technical Support

If you experience an operating problem or require technical assistance, please contact your local authorized TracNet dealer/installer first. You can find an authorized technician near you by visiting our website at **www.kvh.com/wheretogetservice**.

If an authorized technician is not located nearby, please contact KVH Technical Support directly:

Phone: 866-399-8509

(Mon.-Fri. 9am-6pm; Sat. 9am-2pm ET)

E-mail: techs@kvh.com

Please have your product serial number handy when you call.

KVH Technical Support supports Windows 2000/XP only for wired computer connections and supports Windows XP only for wireless computer connections.