



Bandwidth Controller

TBC-800

Version 1.0.2



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Overview and Features

TBC (Teletronics Bandwidth Controller) is a low-cost, versatile and easy to operate device specifically designed for network service providers or enterprise customers to provide a consistent bandwidth flow to the end stations. TBC system automatically shape TCP/UDP traffic based on built-in rules.

TBC system is simple and reliable allowing network operators to quickly and easily bring network traffic into balance without changing the existing network infrastructure.

Scalable:

- Create and manage up to 64 Groups
- Each group can have up to 256 Leaf Class/Sessions

Bandwidth Shape:

- Limit Upload/Download speed for every group and leaf class
- Shape Bandwidth by IP address, Subnet, Group, Mac Address and Port
- Ability to apply single or multi-filters for each class
- Prioritize and reserve bandwidth for certain traffic like VoIP and Webcast

Manageable:

- Web Based Management Tool
- Varies Interface: HTTP/HTTPS/Telnet/Serial Console Port
- Compact or Detail Syslog

Network Function:

- DHCP Server
- SNMP
- Remote Syslog
- Utilities: Ping, Trace Route, Tcpdump, NetPerf

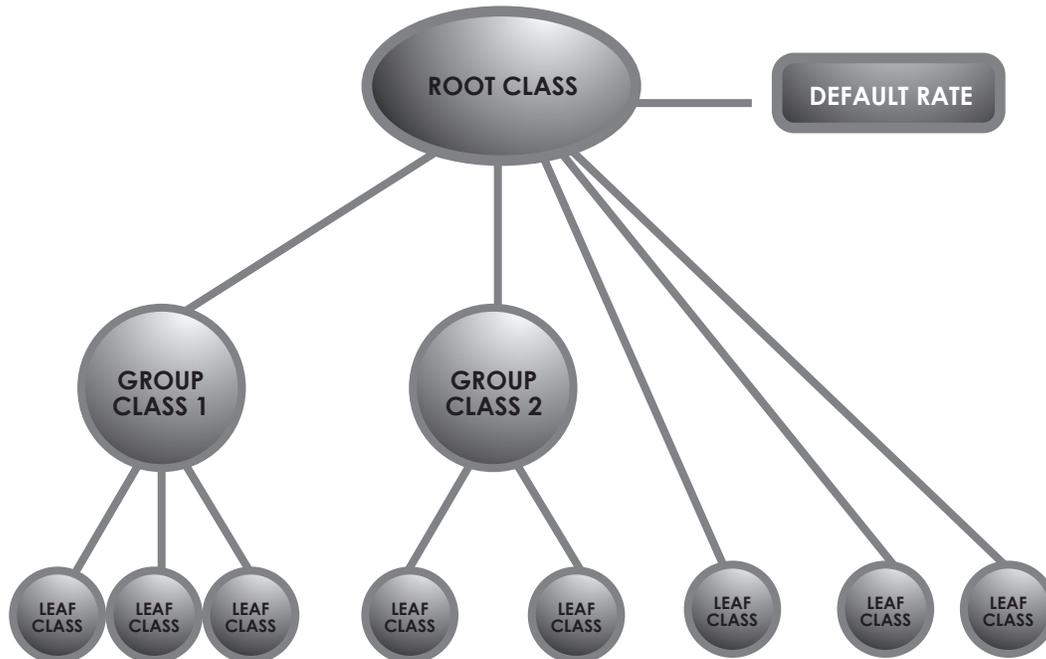
Security:

- Admin Configuration with Password
- Restriction access by IP address filtering
- VPN (IPSec/PPTP) pass through

Mounting:

- Desktop
- Wall Mount
- Rack Mount (available later this year)

Structure of Bandwidth Control



USING ROOT CONFIGURATION PAGE TO SETUP ROOT CLASS AND DEFAULT RATE.
USING PRIMARY GROUP PAGE TO DEFINE GROUP CLASS.
USING QoS SETTING PAGE TO DEFINE LEAF CLASS.

Figure 1

Installation

TBC should be installed between end users and router/ gateway to optimize the performance and efficiency. This product is a hardware version, so it can be installed on any traffic you would like to shape. Because TBC is in Bridge Mode, it can shape bandwidth between different Subnet/IP as well.

TBC has one WAN port, and three LAN port. WAN interface should connect to router/gateway of DSL, T1, or any internet connection. LAN interface should be connecting to internal network directly or through a switch/hub.

Steps:

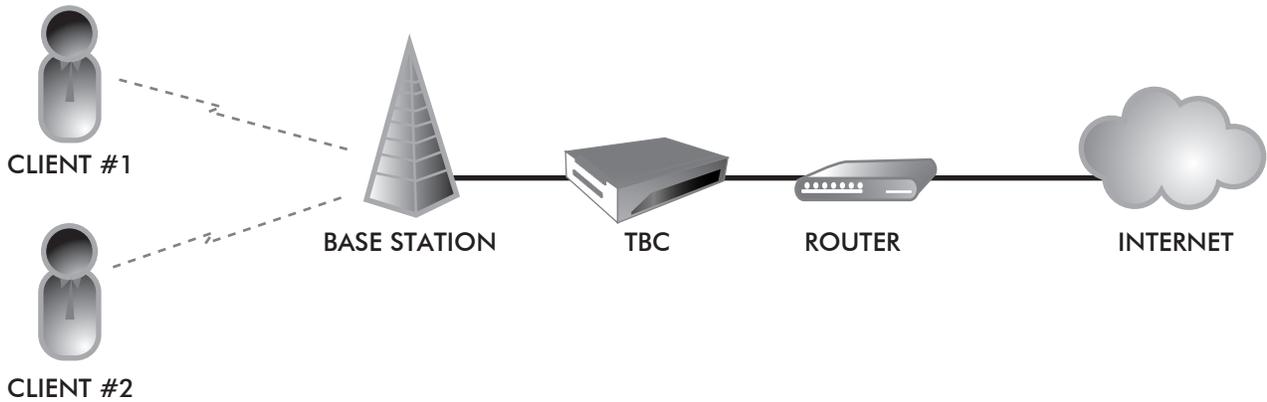
Set your computer's IP Address to 192.168.1.100 with Subnet Mask: 255.255.255.0 (or any available IP address in the 192.168.1.x subnet). Use a crossover cable to connect the LAN1 port to your computer's Ethernet port. Connect power adapter to TBC-800.

For more information about configuration and operation, please see Web Configuration Interface section. Please see the next page for Installation Diagram (Figure 2).

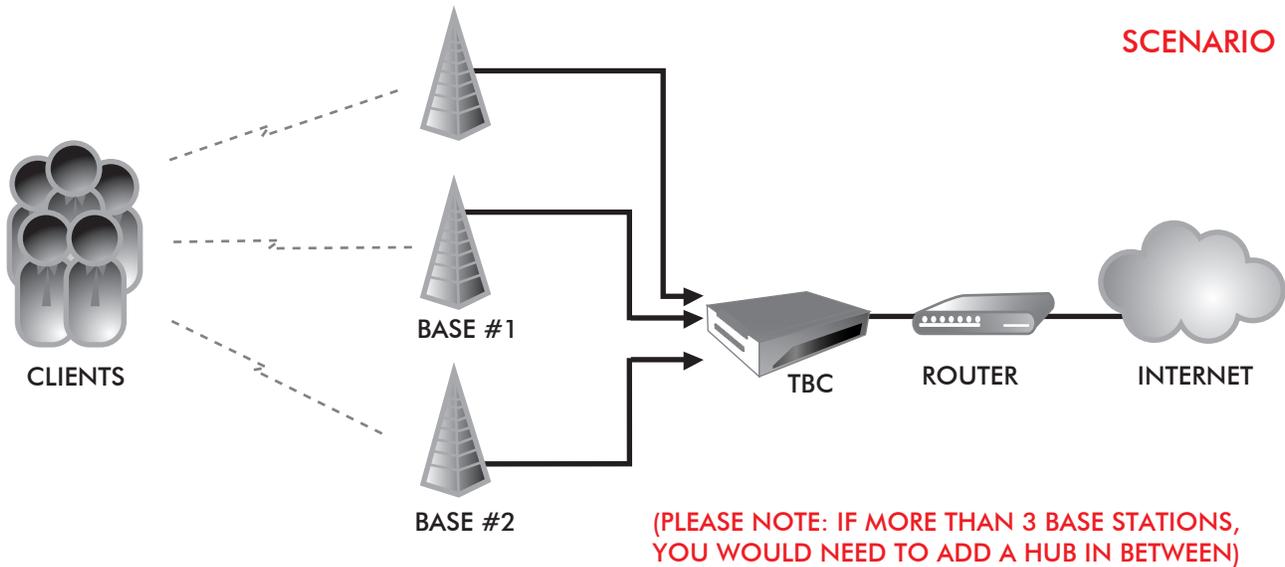
Network Installation Diagram

SHAPING BASE ON IP

SCENARIO 1



SCENARIO 2



SCENARIO 3

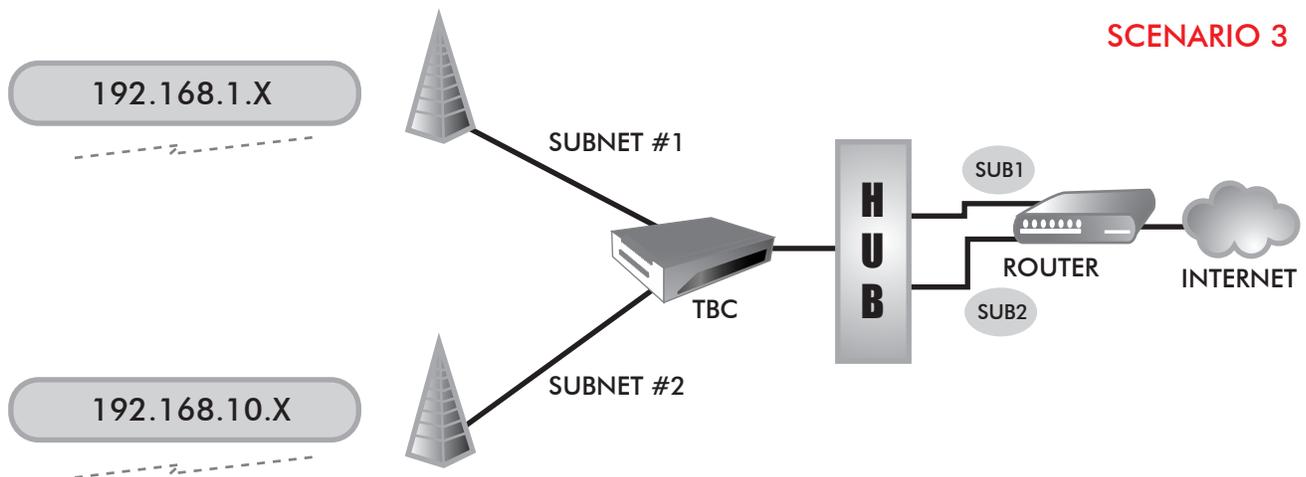


Figure 2

Web Configuration Interface

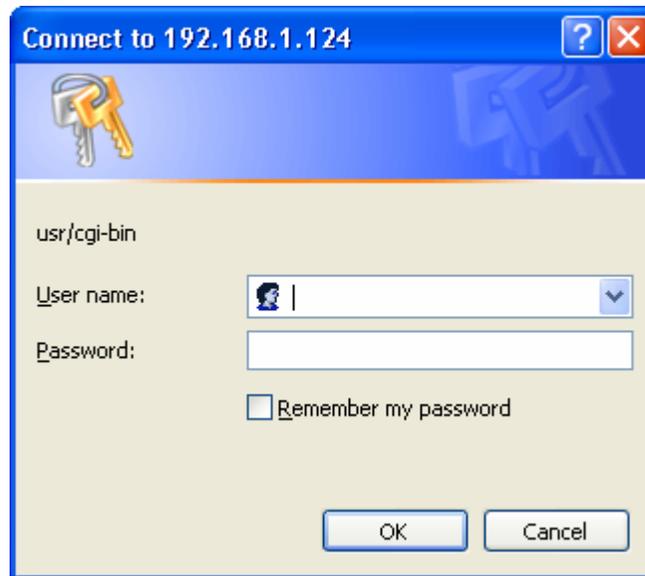
Login

Default IP Address: 192.168.1.124

To access the web control interface, open up a web browser and type in the factory default IP address in the URL.



Then press Enter on your keyboard, you will see the login prompt window appear.



Default User Name: admin

Default Password: admin

Enter User name and password, and click OK.

Note: You may set a new password by clicking the Administration-Password tab after you successfully login to the web page.

System Overview

This is the main web interface home page. It displays Firmware Version and IP properties.

http://192.168.1.124 - Teletronics Web Configuration Manager - Microsoft Internet Explorer

File Edit View Favorites Tools Help

TELETRONICS INTERNATIONAL INC. **TBC Bandwidth Controller Web Base Configuration Manager**

System Overview **Network Setting** Administration Services Bandwidth Control Status Save&Reboot

System Overview

This is the **System Overview** Page for the Web Configuration Manager. Below are the most recent **saved** settings of the TBC unit. To reconfigure the TBC unit, select the **Network Setting** tab.

Firmware Version: 3.0.4
 Building Number: 1609
 Config Version: 1.1.2

System Configuration Summary

br0 IP Address: 192.168.1.124
 br0 IP Subnet Mask: 255.255.255.0
 br0 MAC Address: 00:60:E0:03:1D:C4
 ~ ~ ~ ~
 Default Gateway: 192.168.1.1
 DNS Settings: nameserver 168.95.1.1

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Network Setting

- WAN

http://192.168.1.124 - Teletronics Web Configuration Manager - Microsoft Internet Explorer

File Edit View Favorites Tools Help

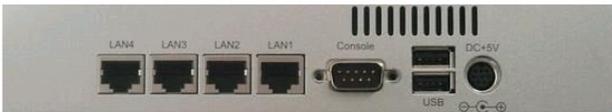
TELETRONICS INTERNATIONAL INC. **TBC Bandwidth Controller Web Base Configuration Manager**

System Overview **Network Setting** Administration Services Bandwidth Control Status Save&Reboot

WAN **LAN**

WAN

The following is a list of those configuration variables under the **WAN** category.



WAN Interface: LAN1 port.
LAN Interface: LAN2, LAN3 and LAN4 port.

Static IP Address:

IP Address: *Enter the IP address for device*

Subnet Mask: *Enter the netmask, such like 255.255.255.0 for C-class*

Default Gateway: *Enter IP address for default gateway*

Preferred DNS Server: *Enter IP address for Preferred DNS server*

Alternate DNS Server: *Enter IP address for Alternate DNS server*

DHCP Client-Dynamic IP address

Enable DHCP Client: Yes No *Select whether you want to enable DHCP client*

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Static IP Address:

Manually setup an IP for this device

- IP Address
- Subnet Mask
- Default Gateway
- Preferred DNS Server
- Alternate DNS Server

DHCP Client:

Set up the device as a DHCP client which will pick up an IP from a DHCP server

Click Save to store the setting

- LAN

The screenshot shows a web browser window displaying the configuration page for the LAN network. The page title is "TBC Bandwidth Controller Web Base Configuration Manager". The navigation menu includes "System Overview", "Network Setting", "Administration", "Services", "Bandwidth Control", "Status", and "Save&Reboot". The "LAN" tab is selected. The configuration variables under the LAN category are:

Enable DHCP Server: Yes <input type="radio"/> No <input checked="" type="radio"/>	Select whether you want to enable DHCP Server services
Domain: <input type="text" value="teletronics.com"/>	Enter the local domain name for the DHCP network
Starting IP Address: <input type="text" value="192.168.0.10"/>	Enter the starting IP address for the lease block of IP addresses
Ending IP Address: <input type="text" value="192.168.0.240"/>	Enter the ending IP address for the lease block of IP addresses
Default Gateway: <input type="text" value="192.168.0.1"/>	Enter the IP address for the default gateway
Preferred DNS Server: <input type="text" value="192.168.1.1"/>	Enter the IP address of the device on your network running as the primary DNS server.
Alternate DNS Server: <input type="text"/>	Enter the IP address of the device on your network running as the secondary DNS server.
Subnet Mask: <input type="text" value="255.255.255.0"/>	Enter the network subnet mask
Broadcast: <input type="text" value="192.168.0.255"/>	Enter the broadcast IP address for the network
Lease Time: <input type="text" value="7200"/>	Enter the time period (in minutes) that a lease will be issued

Buttons: Return System Overview, Save

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TBC can be setup as a DHCP server for the LAN network.

Enable DHCP Server:

- Enable DHCP Server: select Yes
- Domain: Enter the name of the LAN network domain
- Starting & Ending IP Address: Enter the starting and the ending IP address dynamically assigning to DHCP clients.
- Default Gateway: Enter the LAN network gateway IP address
- Preferred & Alternate DNS Server: Enter the preferred & alternate Domain Name Server's IP address
- Subnet Mask: Enter the LAN network subnet

- Broadcast: Enter the LAN network Broadcast IP address
- Lease Time: Enter the time period (in minute) that a lease will be issued

Click Save to store the setting

Administration

- Configuration

The screenshot shows the 'Administration Configuration' page in the TBC Bandwidth Controller Web Base Configuration Manager. The page title is 'TBC Bandwidth Controller Web Base Configuration Manager'. The navigation menu includes 'System Overview', 'Network Setting', 'Administration', 'Services', 'Bandwidth Control', 'Status', and 'Save&Reboot'. The 'Administration' menu is expanded to show 'Configuration', 'Admin IP Filter', 'Password', 'Configuration Backup', 'Configuration Restore', 'Firmware Upgrade', and 'Date&Time'. The 'Administration Configuration' section contains the following fields and options:

- Host Name:** wdp80211 (with a note: 'Enter 1 - 30 characters')
- Enable HTTP:** Yes No (with a note: 'Select whether you want to enable the HTTP server')
- Enable HTTPS:** Yes No (with a note: 'Select whether you want to enable the secure HTTP server')
- Enable Telnet:** Yes No (with a note: 'Select whether you want to enable the TELNET daemon')

Buttons for 'Return Home' and 'Next' are located at the bottom of the configuration area. The footer indicates '© 2005 Teletronics International Inc. All Rights Reserved.'

- Host Name: This is the name for this device. Host name can help to identify the location if there is more then one bandwidth controller in the LAN network.
- Enable HTTP: HTTP is enable by default
- Enable HTTPS: HTTPS is enable by default
- Enable Telnet: Telnet is enable by default

- Admin IP Filter

The screenshot shows the 'Admin IP Filter' page in the TBC Bandwidth Controller Web Base Configuration Manager. The page title is 'TBC Bandwidth Controller Web Base Configuration Manager'. The navigation menu includes 'System Overview', 'Network Setting', 'Administration', 'Services', 'Bandwidth Control', 'Status', and 'Save&Reboot'. The 'Administration' menu is expanded to show 'Configuration', 'Admin IP Filter', 'Password', 'Configuration Backup', 'Configuration Restore', 'Firmware Upgrade', and 'Date&Time'. The 'Admin IP Filter' section contains the following fields and options:

- Enter IP Address:** (empty text box)
- Enter Subnet mask:** 255.255.255.255 (with an 'Add' button)
- Unrestriction Client List:** (1)192.168.1.100;255.255.255.255 (with a 'Remove' button)

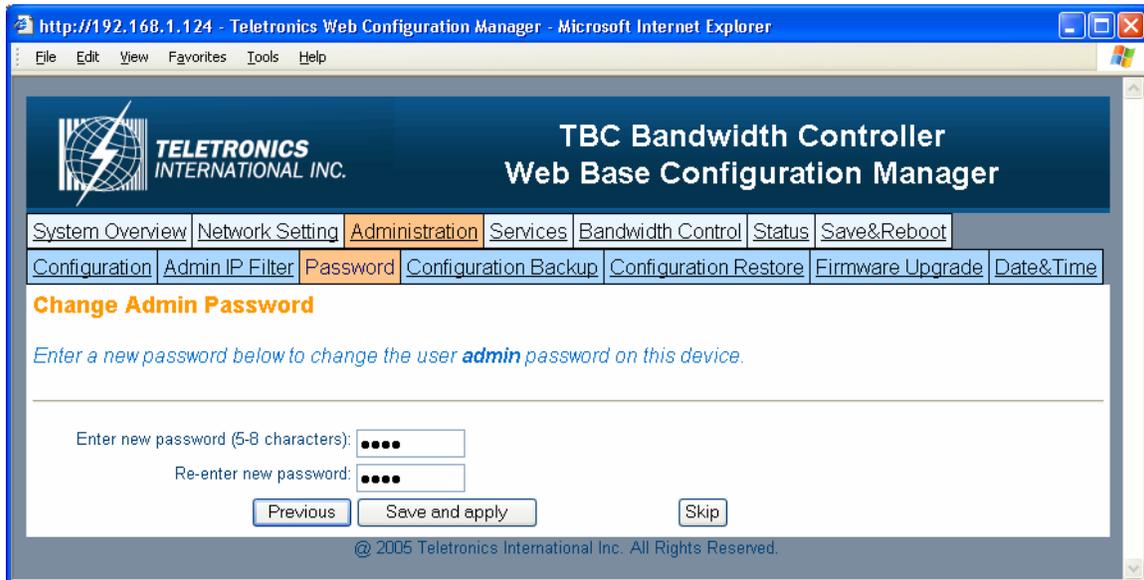
Buttons for 'Previous' and 'Next' are located at the bottom of the configuration area. The footer indicates '© 2005 Teletronics International Inc. All Rights Reserved.'

INDEX	IP ADDRESS	SUBNET MASK
1	192.168.1.100	255.255.255.255

- Enter IP Address: Enter IP address that will have permission to access this device
- Enter Subnet Mask: Enter Subnet Mask to grant permission to a whole or part of subnet. For example: if enter IP: 192.168.1.100 & subnet: 255.255.255.0, any address at 192.168.1.x network can access this device.

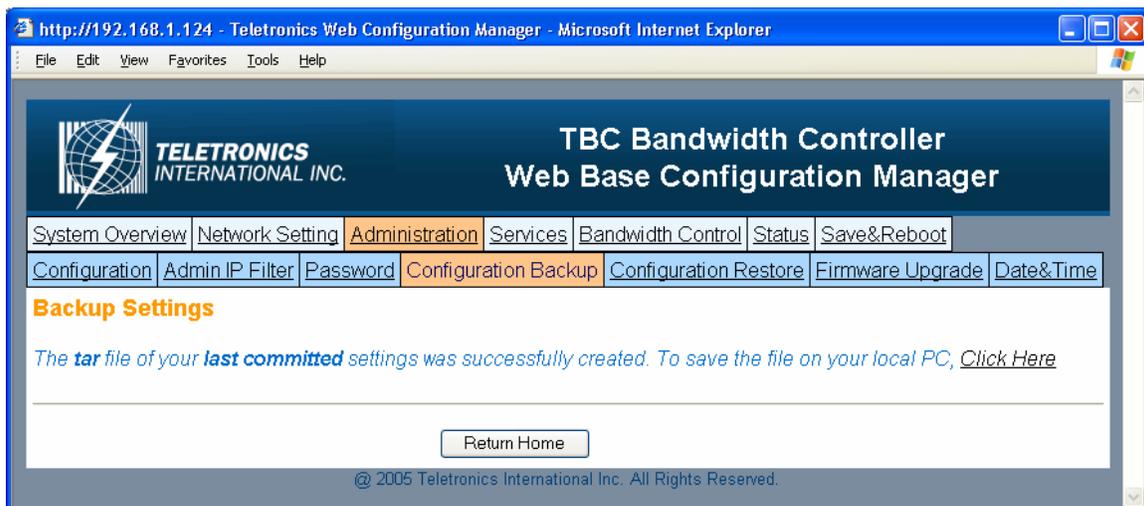
Click Add or Remove to modify the Admin IP access list.

- Password



You can reset password for user **admin**. You must enter the same password twice for confirmation. Click Next to Save, then click Commit Changes to permanently apply the change.

- Configuration Backup



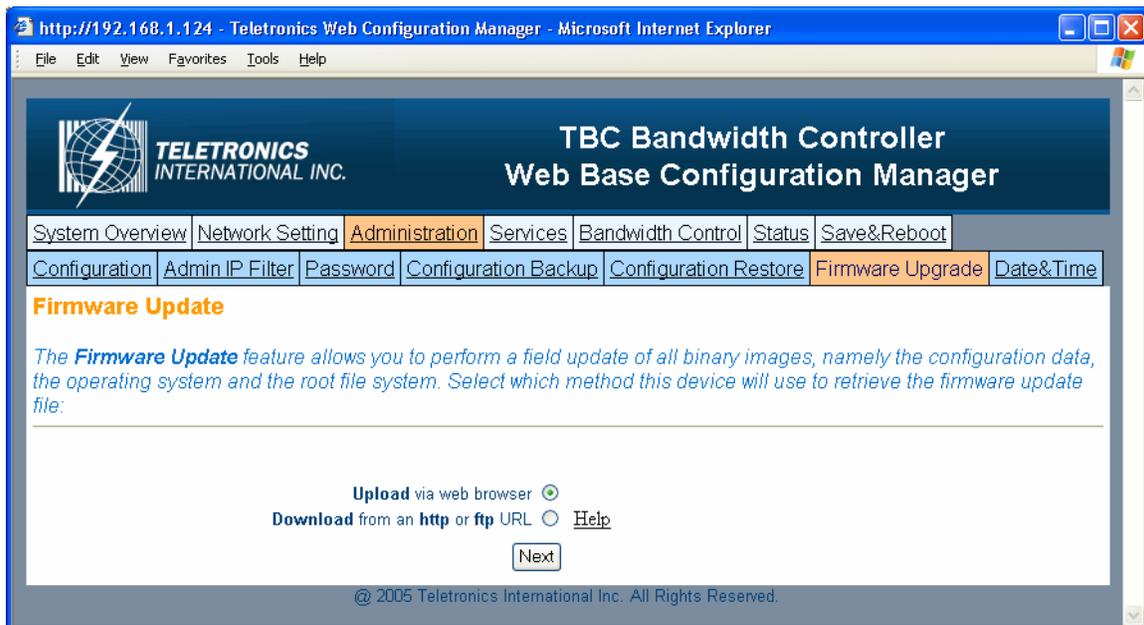
You can save the system configuration file which store user ID, password, device IP address, bandwidth control setting. By clicking Click Here, it will prompt you to save a tar file as backup.

- Configuration Restore



This section allows the bandwidth controller to restore default factory settings by clicking Factory Defaults, or to restore from a backup configuration file (the .tar file) to a previous setting point by clicking From Backup File.

- Firmware Upgrade



This section allows the bandwidth controller firmware to be upgrade or changed. There are two options to update firmware, update a file direct from a host machine or download from http or ftp site.

- Upload via web browser: Select this option and click Next. Click on the Browse to select the upgrade firmware file and click Upload file to upgrade.
- Download from http or ftp URL: Select this option to download and upgrade the firmware from a specific URL.

- Date & Time



- Time Zone: Set the Time Zone
- Current System Date: Set System Date with yyyy/mm/dd format
- Current System Time: Set System Time with hh/mm/ss format
- NTP Enable: Enable or disable Network Time Protocol. NTP is used to synchronize the time.
- NTP Server: If you enable NTP, bandwidth controller will need a NTP server to request precise time.

Services

- SNMP

The screenshot shows a web browser window titled "http://192.168.1.124 - Teletronics Web Configuration Manager - Microsoft Internet Explorer". The page header includes the Teletronics International Inc. logo and the title "TBC Bandwidth Controller Web Base Configuration Manager". A navigation menu contains tabs for "System Overview", "Network Setting", "Administration", "Services", "Bandwidth Control", "Status", and "Save&Reboot". The "Services" tab is active, and a sub-menu shows "Remote Syslog" and "SNMP". The "SNMP" configuration page includes the following fields:

- SNMP AGENT ENABLE:** Yes No . Hint: *Select Yes to enable SNMP agent*
- READ_ONLY COMMUNITY:** public
- READ_WRITE COMMUNITY:** public
- SNMP SYS CONTACT:** Support <support@teletronics.com>. Hint: *System support contact e-mail*
- SNMP SYS LOCATION:** MD, USA. Hint: *System location*

Navigation buttons "Previous" and "Next" are located at the bottom of the form. The footer of the page reads "@ 2005 Teletronics International Inc. All Rights Reserved."

- **SNMP Agent Enable:** Option to enable or disable SNMP support
- **Read Only Community:** The SNMP Read-only Community string is like a user id or password that allows access to a router's or other device's statistics. InterMapper sends the community string along with all SNMP requests. If the community string is correct, the device responds with the requested information. If the community string is incorrect, the device simply discards the request and does not respond.
Factory default setting for the read-only community string is set to "public". It is standard practice to change all the community strings so that outsiders cannot see information about the internal network. (In addition, the administrator may also employ firewalls to block any SNMP traffic to ports 161 and 162 on the internal network.)
Change this value to have InterMapper use the new string when querying SNMP devices.
- **Read Write Community:** allows a remote device to read information from a device and to modify settings on that device. InterMapper does not use the read-write community string, since it never attempts to modify any settings on its devices.
- **SNMP Sys Contact:** Enter email address to contact support
- **SNMP Sys Location:** Enter system location

- Remote Syslog

The screenshot shows the 'Remote Syslog' configuration page in the TBC Bandwidth Controller Web Base Configuration Manager. The page title is 'TBC Bandwidth Controller Web Base Configuration Manager'. The navigation menu includes 'System Overview', 'Network Setting', 'Administration', 'Services', 'Bandwidth Control', 'Status', and 'Save&Reboot'. The 'Services' menu is expanded, showing 'Remote Syslog' and 'SNMP'. The 'Remote Syslog' section contains the following configuration options:

- SYSLOG REMOTE ENABLE:** Yes No
- SYSLOG SERVER:** 192.168.1.13

Instructions: Select Yes to enable remote SYSLOG services. Enter IP address for primary SYSLOG server.

Next

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- **Syslog Remote Enable:** Option to enable or disable Remote Syslog
- **Syslog Server:** Enter remote Syslog server IP address

Bandwidth Control

- Root Configuration

The screenshot shows the 'Root Configuration' page in the TBC Bandwidth Controller Web Base Configuration Manager. The page title is 'TBC Bandwidth Controller Web Base Configuration Manager'. The navigation menu includes 'System Overview', 'Network Setting', 'Administration', 'Services', 'Bandwidth Control', 'Status', and 'Save&Reboot'. The 'Bandwidth Control' menu is expanded, showing 'Root Configuration', 'Primary Group', 'QoS Setting by IP', and 'QoS Setting by MAC'. The 'Root Configuration' section contains the following configuration options:

- BANDWIDTH CONTROL:** Enable Disable
- FIREWALL FILTER:** Enable Disable
- DEFAULT UPLOAD RATE:** 56 Kbytes/sec.
- DEFAULT DOWNLOAD RATE:** 56 Kbytes/sec.

Return Home Next

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Bandwidth Control Root Configuration page allows administrator to set Root Class and Default Bandwidth Rate for both Upload and Download.

- **Bandwidth Control:** Options to enable or disable Bandwidth Control. Default setting is set to Disable
- **Firewall Filter:** Options to enable or disable Firewall Filter. If enabled, only those IP address defined in QoS list can pass through the device.
- **Default Upload Rate:** Enter Default Maximum Upload Rate
- **Default Download Rate:** Enter Default Maximum Download Rate

Any traffic is not defined in the bandwidth control list/group will use this default upload and download rate.

Click Next to save and continue.

- Primary Group

The screenshot shows the 'Primary Group' configuration page in a web browser. The page title is 'TBC Bandwidth Controller Web Base Configuration Manager'. The navigation menu includes 'System Overview', 'Network Setting', 'Administration', 'Services', 'Bandwidth Control', 'Status', and 'Save&Reboot'. The 'Bandwidth Control' section is active, and the 'Primary Group' sub-section is selected.

The configuration form includes the following fields and buttons:

- Enter Group Name:
- Enter Group ID: *the ID number must be 2~200 and unique.*
- Enter Upload Rate: Kbytes/sec.
- Enter Download Rate: Kbytes/sec.
- Group List: (1.)Teletronics:7:64:128
- Buttons: Add, Remove, Modify, Previous

At the bottom, there is a table showing the list of groups:

INDEX	GROUP NAME	GROUP ID	UPLOAD RATE	DOWNLOAD RATE
1	Teletronics	7	64 Kbytes	128 Kbytes

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Primary Group Page allows administrator to create new group. After each group is created, the group name will be displayed under Index Table. Each group should be assigned a unique Group ID Number.

- **Group Name:** Name of the group you want to create. Group name will help identifying different type of clients/customers
- **Group ID:** A unique group number assign for each group, must be between 2-200
- **Upload Rate:** Upload rate for each specific group
- **Download Rate:** Download rate for each specific group
- **Group List:** This is for Modify and Remove purpose.

To Add a Group

Enter Group Name, Group ID, Upload & Download Rate
Click **Add** to create a group

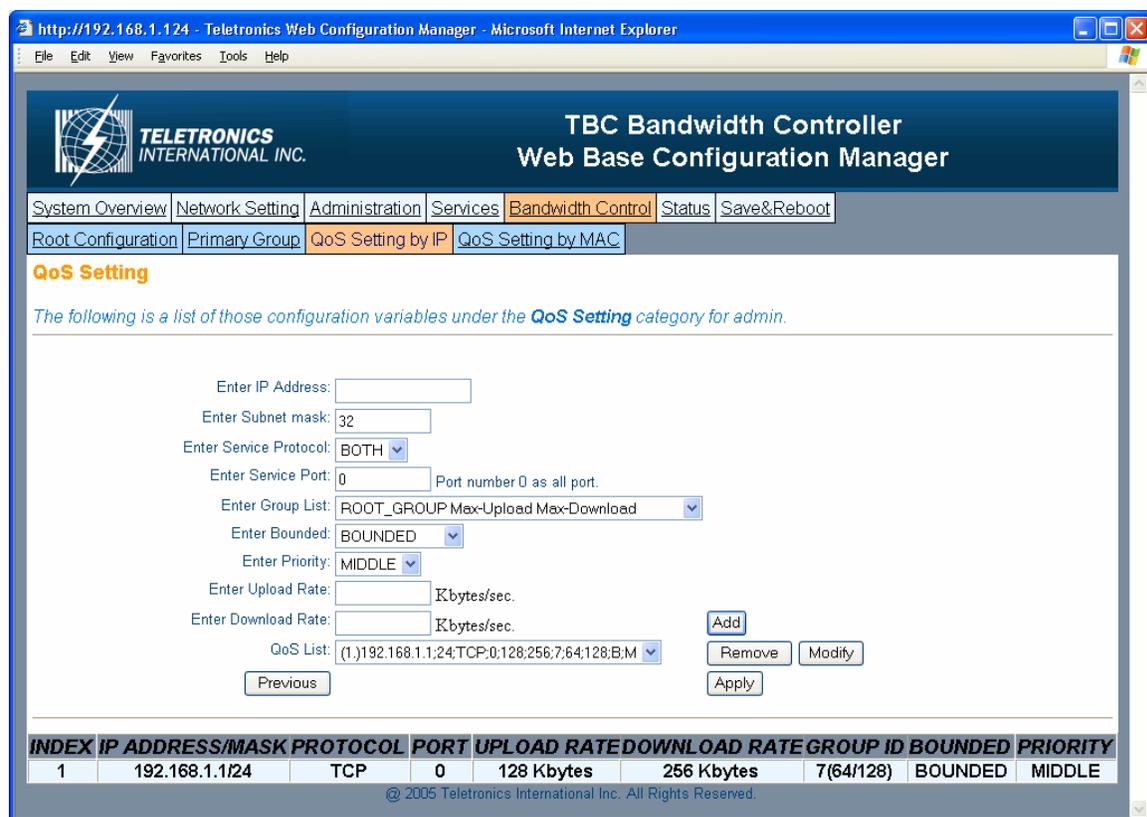
To Remove a Group

Select a group you want to remove from Group List
Click **Remove** to delete

To Modify an existing Group

Under Group List, select the group you want to modify. Enter the new value for Group Name, Group ID, and Upload/Download Rate, or enter the same value if it's unchanged.
Click **Modify** to apply.

- QoS Setting by IP



The screenshot shows the TBC Bandwidth Controller Web Base Configuration Manager interface. The page title is "QoS Setting". Below the title, there is a navigation menu with tabs for "System Overview", "Network Setting", "Administration", "Services", "Bandwidth Control", "Status", and "Save&Reboot". The "Bandwidth Control" tab is selected, and within it, the "QoS Setting by IP" sub-tab is active. The main content area contains a form for configuring QoS settings. The form includes fields for "Enter IP Address:", "Enter Subnet mask:" (set to 32), "Enter Service Protocol:" (set to BOTH), "Enter Service Port:" (set to 0), "Enter Group List:" (set to ROOT_GROUP Max-Upload Max-Download), "Enter Bounded:" (set to BOUNDED), "Enter Priority:" (set to MIDDLE), "Enter Upload Rate:" (set to 128 Kbytes/sec), and "Enter Download Rate:" (set to 256 Kbytes/sec). There is also a "QoS List" field showing a list of IP addresses and protocols. At the bottom of the form, there are buttons for "Add", "Remove", "Modify", "Apply", and "Previous". Below the form, there is a table with the following data:

INDEX	IP ADDRESS/MASK	PROTOCOL	PORT	UPLOAD RATE	DOWNLOAD RATE	GROUP ID	BOUNDED	PRIORITY
1	192.168.1.1/24	TCP	0	128 Kbytes	256 Kbytes	7(64/128)	BOUNDED	MIDDLE

At the bottom of the page, there is a copyright notice: "@ 2005 Teletronics International Inc. All Rights Reserved."

QoS Setting by IP page allows administrator to define sub-group/leaf class by related IP address and subnet, Protocols, and Port Numbers. Administrator will have the ability to assign different Upload and Download rate for each sub-group. This setting can limit/reserve bandwidth for certain network application/program.

- **IP Address:** Enter IP address that belongs to a specific subnet group you want to create
- **Subnet Mask:** Enter Subnet Mask number (Slash or CIDR Notation). This device supports up to 256 sessions under each group, so the subnet mask must be between 24-32
- **Service Protocol:** Filter by TCP, UDP, or Both

- **Service Port:** Enter the port number of new services. Enter 0 for all ports.
- **Group List:** Select which Group to be assigned by this setting or it can be assigned to Root Class
- **Bounded:** Select Unbounded if you want to inherit and use the rate from parent Group; Select Bounded if you want to assign a different Upload and Download Rate for this sub-group
- **Priority:** Select High, Middle, or Low to prioritize this group/rule
- **Upload/Download Rate:** Enter Upload and Download rate for this sub-Group. These rates will only apply if you select Bounded.

To Add a QoS Group

Enter information in all fields

Click **Add** to create a group

To Remove a QoS Group

Select a group you want to remove from QoS List

Click **Remove** to delete

To Modify an existing Group

Under QoS List, select the group you want to modify. Enter the new value for IP Address, Subnet, Protocol, Port, Group List, Bounded, and Upload/Download Rate, or enter the same value if it's unchanged. Click **Modify** to apply.

Click **Apply** to save and apply the change

- QoS Setting by MAC

The screenshot shows the 'TBC Bandwidth Controller Web Base Configuration Manager' interface. The 'QoS Setting by MAC' tab is selected. The configuration form includes the following fields:

- Enter MAC Address: 00:00:00:00:00:00
- Enter MAC Mask:
- Enter Service Protocol: BOTH
- Enter Service Port: 0 (Port number 0 as all port)
- Enter Group List: ROOT_GROUP Max-Upload Max-Download
- Enter Bounded: BOUNDED
- Enter Priority: MIDDLE
- Enter Upload Rate: Kbytes/sec.
- Enter Download Rate: Kbytes/sec.
- QoS List:

Buttons: Add, Remove, Modify, Apply, Previous.

INDEX	MAC ADDRESS / MAC MASK	PROTOCOL	PORT	UPLOAD RATE	DOWNLOAD RATE	GROUP ID	BOUNDED	PRIORITY
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QoS Setting by MAC page allows administrator to define sub-group/leaf class by MAC address with related Protocols, and Port Numbers. Administrator will have the ability to assign different Upload and Download rate for each sub-group. This setting can limit/reserve bandwidth for certain network application/program.

- **MAC Address:** Enter MAC address that belongs to a specific group you want to create
- **MAC Mask:** If you have a series of device with same pre-fix of MAC Address, you can use this feature to save multiple entries.
- **Service Protocol:** Filter by TCP, UDP, or Both
- **Service Port:** Enter the port number of new services. Enter 0 for all ports.
- **Group List:** Select which Group to be assigned by this setting or it can be assigned to Root Class
- **Bounded:** Select Unbounded if you want to inherit and use the rate from parent Group; Select Bounded if you want to assign a different Upload and Download Rate for this sub-group
- **Priority:** Select High, Middle, or Low to prioritize this group/rule
- **Upload/Download Rate:** Enter Upload and Download rate for this sub-Group. These rates will only apply if you select Bounded.

To Add a QoS Group

Enter information in all fields

Click **Add** to create a group

To Remove a QoS Group

Select a group you want to remove from QoS List

Click **Remove** to delete

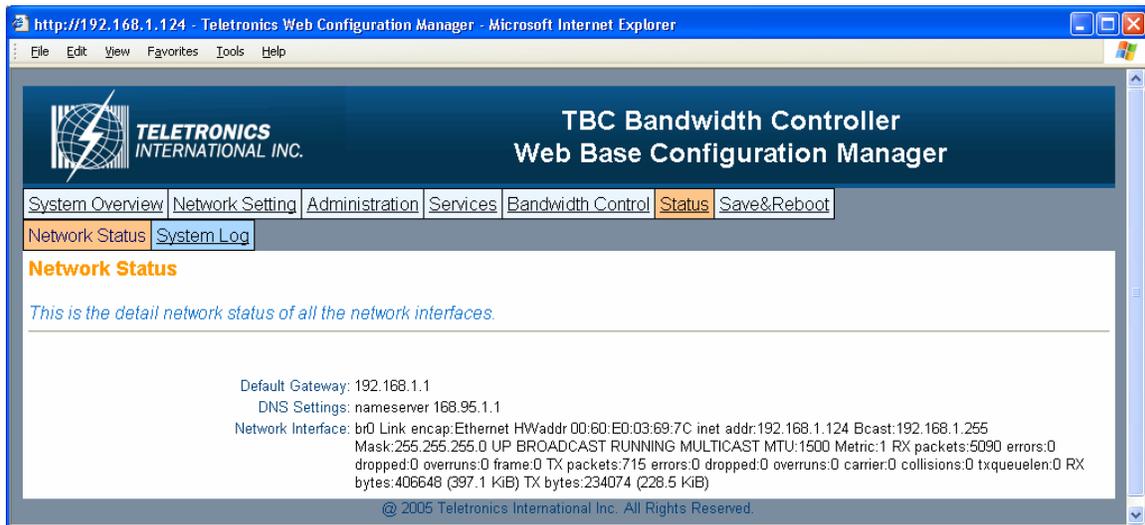
To Modify an existing Group

Under QoS List, select the group you want to modify. Enter the new value for IP Address, Subnet, Protocol, Port, Group List, Bounded, and Upload/Download Rate, or enter the same value if it's unchanged. Click **Modify** to apply.

Click **Apply** to save and apply the change

Status

- Network Status



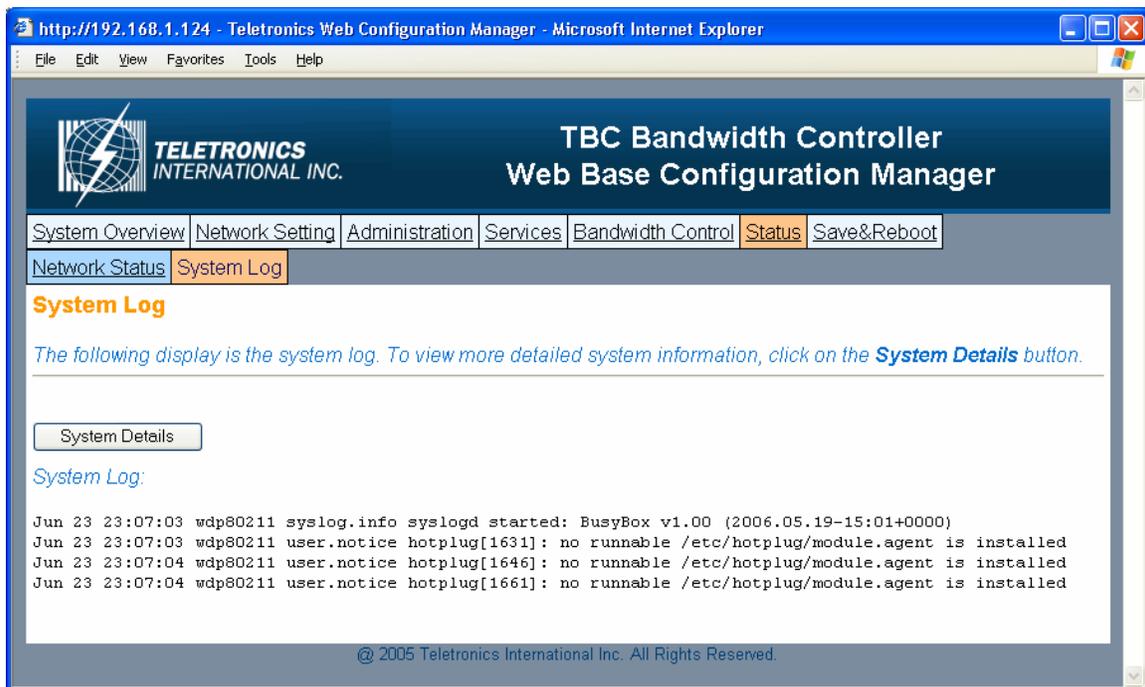
The screenshot shows a web browser window displaying the 'TBC Bandwidth Controller Web Base Configuration Manager'. The 'Status' tab is selected, and the 'Network Status' sub-tab is active. The page displays the following network information:

```
Default Gateway: 192.168.1.1
DNS Settings: nameserver 168.95.1.1
Network Interface: br0 Link encap:Ethernet HWaddr 00:60:E0:03:69:7C inet addr:192.168.1.124 Bcast:192.168.1.255
Mask:255.255.255.0 UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1 RX packets:5090 errors:0
dropped:0 overruns:0 frame:0 TX packets:715 errors:0 dropped:0 overruns:0 carrier:0 collisions:0 txqueuelen:0 RX
bytes:406648 (397.1 KiB) TX bytes:234074 (228.5 KiB)
```

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Network Status displays the current status of all the network interfaces.

- System Log



The screenshot shows the 'System Log' page in the TBC Bandwidth Controller Web Base Configuration Manager. The page displays the following system log entries:

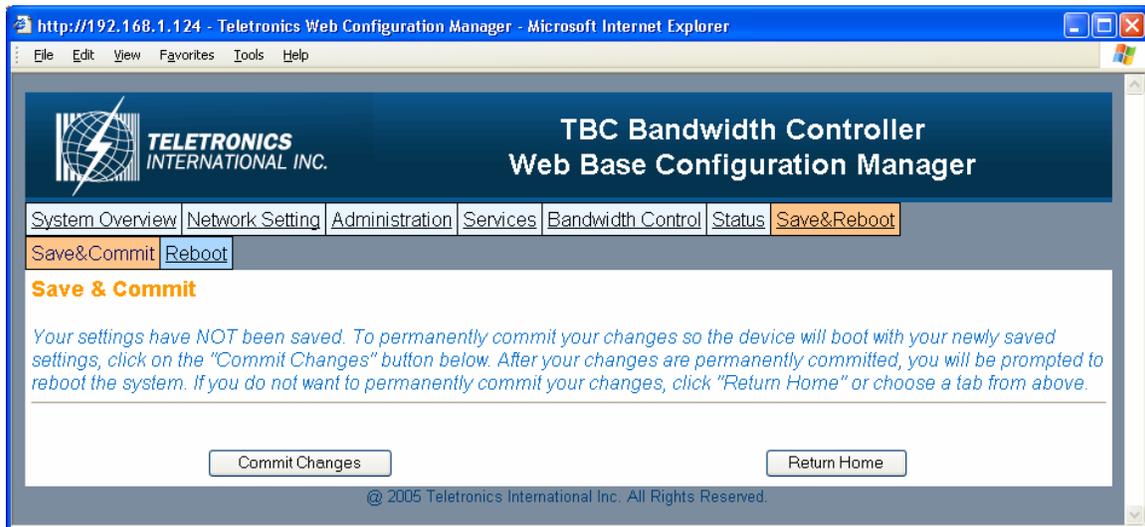
```
Jun 23 23:07:03 wdp80211 syslog.info syslogd started: BusyBox v1.00 (2006.05.19-15:01+0000)
Jun 23 23:07:03 wdp80211 user.notice hotplug[1631]: no runnable /etc/hotplug/module.agent is installed
Jun 23 23:07:04 wdp80211 user.notice hotplug[1646]: no runnable /etc/hotplug/module.agent is installed
Jun 23 23:07:04 wdp80211 user.notice hotplug[1661]: no runnable /etc/hotplug/module.agent is installed
```

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The bandwidth controller stores a syslog data itself, so user can use this as reference for information. For complete system information, click on System Details and it will display full detail of the bandwidth controller system.

Save & Reboot

- Save & Commit



Click on Commit Changes button. This will save all of your settings and activate any changes you have made to the bandwidth controller after next system boot. After this process is done, you will be prompted in next page to reboot the system.

- Reboot



Click on Reboot to restart the bandwidth controller. Please wait 60 seconds for this process to complete, after which you may access the web pages again. After reboot, the system will activate all the new changes.

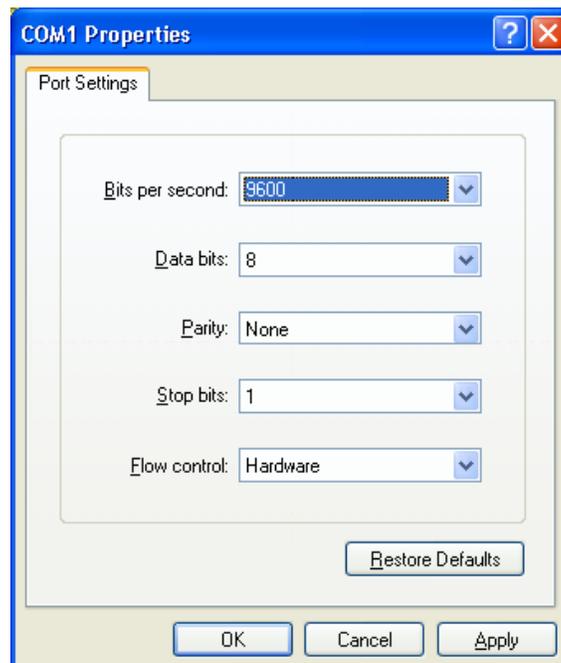
Console / COM port Configuration

Setup the TBC by using Console (Hyper Terminal)

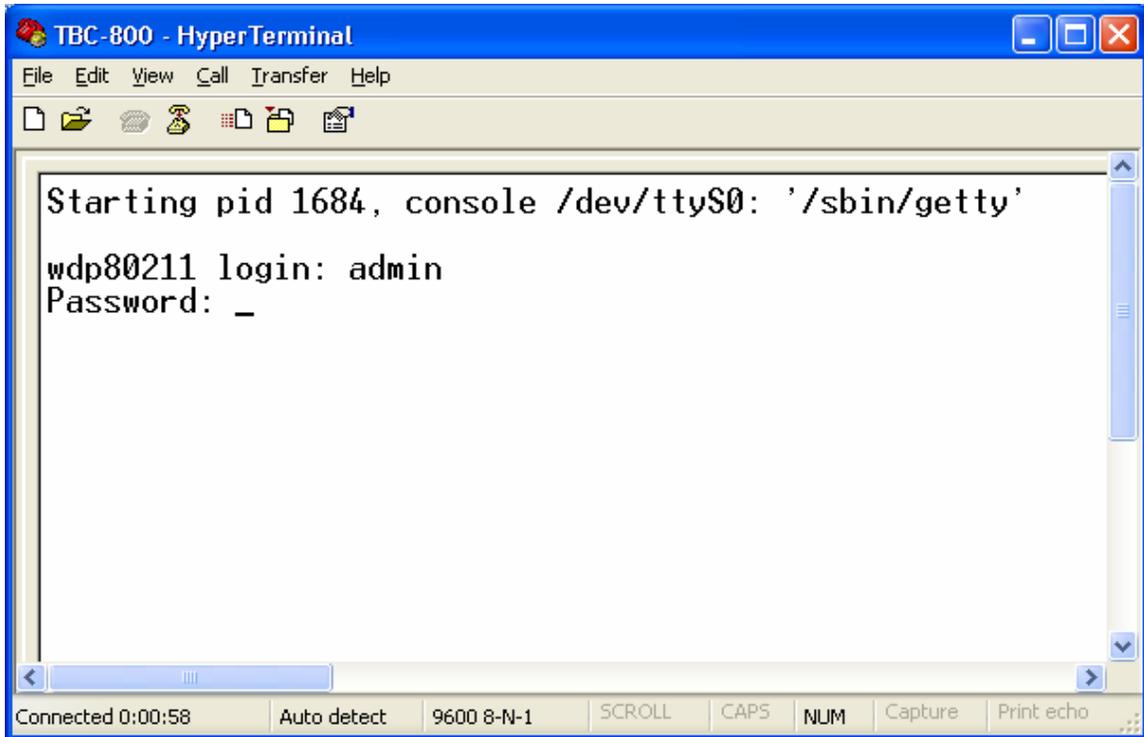
1. Use the serial cable provided, connect the Console Port on the back of TBC to your computer's COM Port.
2. Open a hyper terminal window, select the connection by the COM1 port, and click "OK" button.



3. Set the COM port properties as following, then click "OK"
Bits per second: 9600 Stop bits: 1
Data bits: 8 Flow Control: Hardware
Parity: None

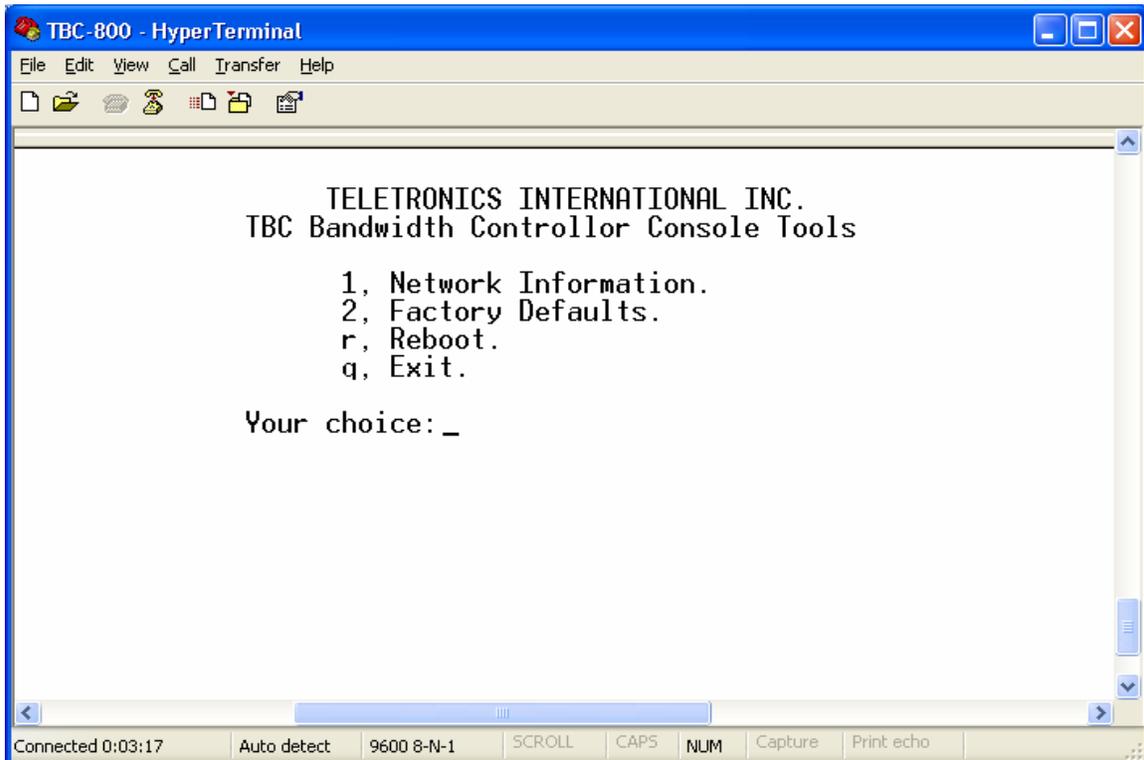


4. Press "Enter" and the hyper terminal will show the Login screen.



Default Username: admin
Default Password: admin

5. You will see TBC Console Tools Menu after you login successfully.



1. Network Information
 - IP Address of the console
 - Subnet Mask
 - MAC address
2. Factory Defaults
 - Restore factory default setting to the flash memory
3. Reboot
 - Press “r” to reboot the TBC
4. Exit
 - Press “q” to quit the Console session

Configuration Examples

TBC-800 system should be installed as close as to the internet gateway ideally. This may not always be the case, but the system needs to install between gateway/router and user workstations.

Example #1

You have a small company with 50 users connected to the Internet through a DSL Router. You have limited bandwidth, so you want to limit internet access speed for most of the users except Managers. Your network IP address is in 192.168.0.x subnet. You can have simple rules look like this:

Bandwidth Control Configuration: Default Upload/Download Rate- 56 Kbytes/s

Grouping: Group Name-Manager, Upload/Download Rate-100Kbytes/s

Bandwidth Setting: IP Address-192.168.0.128/28, Group: Manager, Unbounded

QoS Setting: IP Address- 192.168.0.4/32, Protocol-Both, Port- VoIP port, Group- Root, Bounded, Upload/Download Rate- 200Kbytes/s

In this setting, all the regular users will have default speed of 56 Kbytes/s, and managers will have 100Kbytes/s. VoIP server will have 200Kbytes/s with specific port. You can easily change user speed or any setting later on when a different scenario applies.

Example #2

You have a network connected to the Internet through a T1 line. Bandwidth is not an issue. You do not want a certain division to access internet except uploading files. Your network IP address is in 192.168.100.x network.

Bandwidth Control Configuration: Default Upload/Download Rate- 100 Kbytes/s

Grouping: Group Name-Upload Only, Upload/Download Rate-100 Kbytes/s

Bandwidth Setting: IP Address-192.168.100.32/29, Group: Upload Only, Bounded, Upload Rate-100 Kbytes/s, Download Rate- 0 Kbytes/s

In this setting, everyone in the network has both Upload and Download rate as 100 Kbytes/s, except IP address 192.168.100.32-192.168.100.39 which can only Upload 100 Kbytes/s, but not download.

Product Specifications

Technical Specifications:

Standard Compliance:	<p>IEE 802.3 10BaseT Ethernet IEE 802.3u 100BaseT Ethernet ANSI/IEEE 802.3 NWay auto-negotiation</p>
Bandwidth Control:	<p>Bandwidth Control by IP Default Download and Upload Rate Grouping and Group Bandwidth Setting QoS by IP/Protocol/Port</p>
Utilities:	<p>Ping Utilities, Trace Route Tcpdump, NetPerf</p>
Rich Networking Function:	<p>Various WAN Connections (Static IP/DHCP Client) DHCP Server SNMP Remote Syslog</p>
Power Requirement:	<p>External Power Adapter Input: 100-240 VAC, 50/60 Hz, 1.0A Output: 5V, 2.5A</p>
LED Indicators:	<p>One Power LED Four WAN Link/Activity LED One Status LED</p>
Security Firewall:	<p>Admin Configuration VPN (IPSec/PPTP) Pass Through</p>
Management:	<p>Web based Management Tool Command Line Interface HTTP/HTTPS/Telnet Admin. Restriction Password Control for Configuration Date and Time SNTP Web based Update/Backup/Restore</p>
Operating Temperature:	<p>Temp: 10°C to 50°C Storage: -20°C to 70°C Humidity Max: 95% Non-Condensing</p>
Mounting:	<p>Desktop Wall Mounting</p>
Dimension:	<p>Size: 200W x 215 L x 150H Weight: 0.32 kg</p>
Status:	<p>Network Status System Log (Compact and Detail Mode)</p>
Bandwidth Limiting:	<p>IP Address, Group, Subnet, Port</p>
Connection Limits:	<p>Maximum 64x256 Sessions</p>

Hardware Specifications:

CPU Speed:	800MHz
System Memory:	1 x 168 DIMM max. up to 512MB/128MB SDRAM onboard
Chipset:	VIA VT8601T + VT82C686B
Bios:	Phoenix-Award BIOS with 2Mbit Flash
SSD:	Compact Flash TM Type II Socket (512MB)
Board Unique ID:	Dallas DS2401 Controller
Watchdog Timer:	System Rest and NMI: 64 Levels, 0.5 - 8/5 80/50 - 800/100 - 1600 Seconds
Ethernet Interface:	4 ports 10/100 BaseT Ethernet with Auto Sense Mode
Battery:	Lithium 3V/196 mAH
Size/Weight:	200mm W x 215mm L x 150mm H/ 0.32kg
Temperature:	0 - 60°C, Operation 105 - 95% relative humidity, non-condensing

RMA Guidelines

Warranty Policy

Limited Warranty

All Teletronics' products warranted to the original purchaser to be free from defects in materials and workmanship under normal installation, use, and service for a period of one (1) year from the date of purchase. Under this warranty, Teletronics International, Inc. shall repair or replace (at its option), during the warranty period, any part that proves to be defective in material of workmanship under normal installation, use and service, provided the product is returned to Teletronics International, Inc., or to one of its distributors with transportation charges prepaid. Returned products must include a copy of the purchase receipt. In the absence of a purchase receipt, the warranty period shall be one (1) year from the date of manufacture.

This warranty shall be voided if the product is damaged as a result of defacement, misuse, abuse, neglect, accident, destruction or alteration of the serial number, improper electrical voltages or currents, repair, alteration or maintenance by any person or party other than a Teletronics International, Inc. employee or authorized service facility, or any use in violation of instructions furnished by Teletronics International, Inc.

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Some states do not allow the exclusion or limitation of special, incidental or consequential damages, so the above exclusion or limitation may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.

RMA Policy

Product Return Policy

It is important to us that all Teletronics' products are bought with full confidence. If you are not 100% satisfied with any product purchased from Teletronics you may receive a prompt replacement or refund, subject to the terms and conditions outlined below.

IMPORTANT: Before returning any item for credit or under warranty repair, you must obtain a Return Merchandise Authorization (RMA) number by filling out the RMA form. Products will not be accepted without an RMA number. All products being shipped to Teletronics for repair/refund/exchange must be freight prepaid (customer pays for shipping). For all under warranty repair/replacement, Teletronics standard warranty applies.

30-Day full refund or credit policy:

- I. Product was purchased from Teletronics no more than 30 day prior to the return request.
- II. All shipping charges associated with returned items are non-refundable.
- III. Products are returned in their original condition along with any associated packaging, accessories, mounting hardware and manuals. Any discrepancy could result in a delay or partial forfeiture of your credit.

Unfortunately Teletronics cannot issue credits for:

- I. Products not purchased from Teletronics directly. If you purchased from a reseller or distributor you must contact them directly for return instructions.
- II. Damaged items as a result of misuse, neglect, or improper environmental conditions.
- III. Products purchased direct from Teletronics more than 30 days prior to a product return request.

To return any product under 1 year warranty for repair/replacement, follow the RMA procedure.