How to Configure Advanced Barracuda OS System Settings

https://campus.barracuda.com/doc/73719719/

This configuration instance addresses the seasoned Linux expert. Normally, there is no need to consult this file because the default settings have been chosen so as to comply with standard Barracuda CloudGen Firewall system requirements.

If you wish to use the Barracuda CloudGen Firewall system as a generic managed Linux platform, you may come up against situations where modifications might be desirable. You can also view this file to get an overview of the kernel relevant settings.

Configure Advanced System Settings

1. Go to **CONFIGURATION > Full Configuration > Box > Advanced Configuration > System Settings**.
2. Expand the **Configuration Mode** menu and select **Switch to Advanced View**.
3. Click **Lock**.
4. Configure the the parameters as listed in the below **Advanced System Settings** section.
5. Click **OK**.
6. Click **Send Changes** and **Activate**.

Advanced System Settings

The following settings are available for configuration:

IPv4 Settings

To specify IPv4 settings, select **IPv4 Settings** from the **Configuration** menu in the left navigation pane. You can specify the following settings:

Section	Setting	Description

SMP Settings - Performance Tuning	**Interface CPU Assignment**	From this list, you can select the following settings: • **Auto-Detect** – Auto detection of NIC/CPU interrupt handling. Depending on installed services, one of the settings below will be set. • **Optimize for Firewall** – Optimized setting for high firewall throughput. • **Optimize for VPN** – Optimized setting for high VPN throughput. • **Optimize for Mixed VPN** – Optimized setting for firewall as well as VPN throughput. • **Interrupt Balancing** – Operation mode for non-firewall and VPN throughput.
	Receive Packet Steering	Depending on the processed traffic, enabling this setting gives you better overall throughput of the system.
	Explicit Interface Assignment	In this table, specify an **Interface Name** and click **OK**. In the **Explicit Interface Assignment** window, specify the following settings: • **Rx Interrupt CPUs** – List of CPUs to be given the receive interrupt. • **Copy Tx from Rx** – If enabled, Rx values will be used for Tx values. • **Tx Interrupt CPUs** – List of CPUs to receive the transmit interrupt.
General IP Settings	**TCP ECN Active**	Enable this setting to reduce the TCP traffic when a router load is at a maximum and therefore packet loss is possible. Do not activate this setting when using CloudGen Firewalls with proxy or mail gateway services configured. Non-Barracuda CloudGen Firewall systems and some application filters may not be able to handle the ECN header options. When such external systems fetch the TCP header flags, a two-bit mistake occurs because of the way that ECN options are implemented into the TCP header. As a result, the Barracuda CloudGen Firewall does not establish the connection because of the incorrectly answered SYN.
	IP Dyn Address	Only select if you are experiencing problems with network connections using dynamic IP address allocation (ADSL, cable modem). If the forwarding interface changes socket (and packet) along with this parameter enabled, the source address while in SYN_SENT state gets rewritten ON RETRANSMISSIONS.

ARP Settings

To specify ARP settings, select **ARP Settings** from the **Configuration** menu in the left navigation pane. You can specify the following settings:

Setting	Description

ARP Src IP Announcement	Defines different restriction levels for announcing the local source IP address from IP packets in ARP requests sent on an interface. This settings field uses the **arp_announce** setting, whose values have been translated by Barracuda Networks to *any* (internal value = *0*), *best* (internal value = *1*), and *primary* (internal value = *2*). Note the following excerpt from the kernel documentation: • **any** – (internal value = 0) Use any local address, configured on any interface. • **best** – (internal value = 1, default) Try to avoid local addresses that are not in the target's subnet for this interface. This mode is useful when target costs reachable via this interface require the source IP address in ARP requests to be part of the logical network configured on the receiving interface. When the request is generated, subnets that include the target IP address are checked. The source addresses from these subnets are preserved. If there is no such subnet, the source address is selected according to the rules for the setting **primary**. • **primary** – (internal value = 2) Always use the best local address for this target. In this mode, the source address in the IP packet is ignored and a local address is preferred for talks with the target host. Such a local address is selected by looking for primary IP addresses on all our subnets on the outgoing interface that include the target IP address. If no suitable local address is found, the first local address on the outgoing interface or on all other interfaces is selected, with the hope that a reply is received for the request, sometimes regardless of the source IP address that is announced. Increasing the restriction level increases the likelihood of receiving an answer from the resolved target while decreasing the level announces more valid sender's information and thus is prone to violating privacy requirements.
ARP Cache Size	The maximum number of entries allowed in the ARP cache (default: *8192*).

Routing Cache

Garbage collection is done regularly by the kernel. The entries shown here provide full access to all relevant kernel settings.

Section	Setting	Description
Routing Cache Settings	**Max Routing Cache Entries**	Specifies the maximum number of entries in the kernel's routing cache. On systems with a large number of sessions and routed IP addresses, this value may need to be increased. Increasing this setting marginally increases memory consumption. On small systems, a value of *4096* is sufficient.
	GC Elasticity	Specified as integer log2 of an internal setting used to steer the sensitivity of the garbage collection algorithm. It is provided for completeness only. Changing it requires a thorough understanding of the GC algorithm to achieve the desired effect (default: *8*, allowed values: *1*, *2*, *4*, *8*, *16*, *32*).
	GC Interval [s]	This setting is used by the kernel's regular GC loop and defines the loop time in seconds between two regular GC events (min: *1*, max: *120*, default: *60*).
		The minimum time in seconds between two garbage collections (min: *1*, max: *120*, default: *60*). This setting is provided because GC may either occur throughout a regular GC loop (see above) or may

I/O Settings

The remaining block of configuration entries is special in so far as the IDE tuning option is only activated by rebooting the system. This prevents the user from repeatedly activating and deactivating this low-level setting on a running system. Doing so during full operation may freeze the operating system.

Setting	Description
I/O Tuning	Enable, if you wish to edit the maximum number of file handles and nodes that the OS kernel can handle.
I/O Scheduler	From this list, you can select a specific Linux I/O scheduler or select the default scheduler (selected by Barracuda).
Open Files (max)	The maximum number of open file descriptors that the Barracuda CloudGen Firewall system is prepared to handle (min. *8192*, max. *655536*). It is recommended that you do not allot more than 256 files per 4 MB of RAM. Changing the default setting is unnecessary if you do not experience any problems.

CompactFlash

Flash settings will be ignored for all non-flash RAM-based systems.

To specify flash memory settings, select **CompactFlash** from the **Configuration** menu in the left navigation pane. You can specify the following settings:

Section	Setting	Description
RAM Drive Settings	**Size (in %)**	The percentage of the total available RAM to be used in the tmpfs RAM partition (default: *20*). If, instead, you want to specify this value in MB, delete any settings from this field.
	Size (in MB)	The size of the tmpfs RAM partition specified in MB. To enter a value in this field, you must clear any value from the **Size (in %)** field.
Log Settings	**Size Settings**	In this table, you can specify the maximum size settings for all log file types. However, you may not need to edit these settings because they are adjusted automatically for certain systems. If you do choose to add or edit a table entry for a log file, specify the resource and the maximum size of the service log files for the resource.
	Wrap Logfiles	Enable log cycling if required. Enabling this feature may cause high memory consumption.

CompactFlash Settings	**Disable CompactFlash mode**	To disable the system from starting in flash RAM mode, regardless of the storage architecture that the flash RAM auto detection recognizes, select **yes**. Enabling this feature may cause hardware damage. Use with due care.
	Force CompactFlash mode	To start the system in flash RAM mode, regardless of the storage architecture that the flash RAM auto detection recognizes, select **yes**.