

RUT900 Routing (legacy WebUI)

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The information in this page is updated in accordance with firmware version **[RUT9XX_R_00.06.09.5](#)**.

Note: this user manual page is for RUT900's old WebUI style available in earlier FW versions. [Click here](#) for information based on the latest FW version.

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Summary

This chapter of the user manual provides an overview of the **Routing** page for RUT900 devices.

Static Routes

Static Routes specify over which interface and gateway a certain host or network can be reached. In this page you can configure your own custom routes.



Field	Value	Description
Routing table	Main WAN WAN2 WAN3; default: Main	Defines which table will be used for the route in question.
Interface	LAN WAN(Wired) WAN2(Mobile) WAN3(WiFi) VPN instances; default: LAN	The zone where the target network resides.
Destination address*	ip; default: none	The address of the destination network.
Netmask*	ip; default: none	A Mask that is applied to the Target to determine to what actual IP addresses the routing rule applies.
Gateway	ip; default: none	Defines where the router should send all the traffic that applies to the rule.
Metric	integer; default: none	The Metric value is used as a sorting measure. If a packet about to be routed fits two rules, the one with the higher metric is applied.

*Additional notes on Destination & Netmask:

You can define a rule that applies to a single IP like this: Destination - some IP; Netmask - 255.255.255.255. Furthermore, you can define a rule that applies to a segment of IPs like this: Destination - some IP that STARTS some segment; Netmask - Netmask that defines how large the segment is. e.g.:

Field	Value	Description
192.168.55.161	255.255.255.255	Only applies to 192.168.55.161
192.168.55.0	255.255.255.240	Applies to IPs in the 192.168.55.0 - 192.168.55.15
192.168.55.240	255.255.255.240	192.168.55.240 - 192.168.55.255
192.168.55.161	255.255.255.0	192.168.55.0 - 192.168.55.255
192.168.0.0	255.255.0.0	192.168.0.0 - 192.168.255.255

Static ARP Entries

Static ARP Entries are used to bind a MAC address to a specific IP address. For example, if you want a device to get the same IP every time it connects to the router, you can create a Static ARP entry by binding that device's MAC address to the desired IP address. The router will then create an entry in the ARP table, which in turn will make sure that that device will get the specified IP address every time.



Dynamic Routes

BGP Protocol

Border Gateway Protocol (BGP) is a standardized exterior gateway protocol designed to exchange routing and reachability information among autonomous systems (AS) on the Internet. The protocol is often classified as a path vector protocol but is sometimes also classed as a distance-vector routing protocol. The Border Gateway Protocol makes routing decisions based on paths, network policies, or rule-sets configured by a network administrator and is involved in making core routing decisions.

General Settings



Field	Value	Description
Enable	yes no; default: no	Toggles the BGP protocol on or off.
Enable vty	yes no; default: no	Toggles vty access from LAN ON or OFF.
Import config -		Uploads an external BGP configuration.

BGP Instance



Field	Value	Description
Enable	yes no; default: no	Toggles the BGP instance on or off.
AS	integer; default: none	AS number is an identification of an autonomous system. BGP protocol uses the AS number for detecting whether the BGP connection is an internal one or external one. [Required] .
BGP router ID	string; default: none	The router id is used by BGP to identify the routing device from which a packet originated. Default router ID Value is selected as the largest IP Address of the interface.
Network	string; default: none	Add an announcement network(s).
Redistribution options	Connected routes Kernel added routes OSPF routes Static routes; default: none	Select routes which you want to redistribute into BGP.
Deterministic MED	yes no; default: no	Enable to compare MED between same autonomous system ignoring their age.

BGP Peers



Field	Value	Description
Enable	yes no; default: no	Toggles the BGP peer on or off.
Remote AS	integer; default: none	Neighbour's remote AS.
Remote address	ip; default: none	Neighbour's remote IPv4 address.

Access List Filters

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Field	Value	Description
Enable	yes no; default: no	Toggles the Access filter on or off.
Peer	bgp peer; default: first peer on list	Applies the rule for the specified peer.
Action	Permit Deny; default: Permit	Denies or permits matched entry.
Network	Any ip; default: Any	Applies filter rule for this source network.
Direction	Inbound Outbound; default: Inbound	If direction is Inbound , the access list is applied to input routes. If direction is Outbound , the access list is applied to advertised routes.

RIP Protocol

The **Routing Information Protocol (RIP)** is one of the oldest distance-vector routing protocols which employ the hop count as a routing metric. RIP prevents routing loops by implementing a limit on the number of hops allowed in a path from source to destination. The maximum number of hops allowed for RIP is 15, which limits the size of networks that RIP can support. A hop count of 16 is considered an infinite distance and the route is considered unreachable. RIP implements the split horizon, route poisoning and holddown mechanisms to prevent incorrect routing information from being propagated.

General

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Field	Value	Description
Enable	yes no; default: no	Toggles RIP Protocol on or off.
Enable vty	yes no; default: no	Toggles vty access from LAN on or off.
Import config	-	Uses imported RIP configurations.
Version	2 1; default: 2	Specifies the version of RIP.
Neighbor	ip; default: none	Neighbour IP address.

RIP Interfaces



Field	Value	Description
Enable	yes no; default: no	Toggles RIP Interface on or off.
Interface	network interface; default: lo	Network interface to be used with the RIP interface.
Passive interface	yes no; default: no	Sets the specified interface to passive mode. On passive mode interface, all receiving packets are processed as normal and ripd does not send either multicast or unicast RIP packets.

Access list filters



Field	Value	Description
Enable	yes no; default: no	Toggles the Access filter on or off.
RIP interface	RIP interface; default: first interface on list	Applies the rule for the specified interface.
Action	Permit Deny; default: Permit	Denies or permits matched entry.
Network	Any ip; default: Any	Applies filter rule for this source network.
Direction	Inbound Outbound; default: Inbound	If direction is Inbound , the access list is applied to input routes. If direction is Outbound the access list is applied to advertised routes.

OSPF Protocol

Open Shortest Path First (OSPF) is a routing protocol for Internet Protocol (IP) networks. It uses a link state routing (LSR) algorithm and falls into the group of interior gateway protocols (IGPs), operating within a single autonomous system (AS). It is defined as OSPF Version 2 in RFC 2328 for IPv4.

General Settings



Field	Value	Description
Enable	yes no; default: no	Toggles OSPF Protocol on or off.
Enable vty	yes no; default: no	Toggles vty access from LAN on or off.
Import config -		Uses imported OSPF configurations.

Router ID	ip; default: none	Sets the router ID of the OSPF process. The router ID may be an IP address of the router, but not necessary, it also can be any arbitrary 32bit number.
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OSPF Interface



Field	Value	Description
Enable	yes no; default: no	Toggles OSPF interface on or off.
Cost	integer [1..65535]; default: 10	The cost Value is set to router-LSA's metric field and used for SPF calculation.
Hello interval	integer [1..65535]; default: 10	Hello packets will be sent at the frequency specified in this field (in seconds).
Router dead interval	integer [1..65535]; default: 40	This Value must be the same for all routers attached to a common network.
Retransmit	integer [1..65535]; default: 5	This Value is used when re-transmitting Database Description and Link State Request packets.
Priority	integer [0..255]; default: 1	The router with the highest priority will be more eligible to become the Designated Router. Setting the Value to 0, makes the router ineligible to become the Designated Router.
Type	Broadcast Nonbroadcast Point-to-point Point-to-multipoint; default: none	Set explicit network type for the specified interface.
Authentication	None Password MD5 HMAC; default: none	Specifies the authentication mode that should be used for the interface.

OSPF Networks



Field	Value	Description
Enable	yes no; default: no	Toggles OSPF network on or off.
Network	[a.b.c.d/m]; default: none	This command specifies the OSPF enabled interface. If the interface has an address from the range a.b.c.d/m then enables OSPF on this interface so the router can provide network information to the other OSPF routers via this interface.
Area	ospf area; default: none	Specifies OSPF area.

NHRP

Next Hop Resolution Protocol (**NHRP**) is a protocol or method that can be used so that a computer

sending data to another computer can learn the most direct route (the fewest number of hops) to the receiving computer.

General Settings

Below is an example of NHRP **General** settings section.



Field	Value	Description
Enable service	off on; default: off	Toggles NHRP between on or off.
Enable logging	off on; default: off	Toggles NHRP logging between on or off.

Interfaces

Below is an example of NHRP **Interface** settings section.



Field	Value	Description
Enable	off on; default: off	Toggles interface on or off.

By pressing **Edit** button you can find more settings related to **NHRP Interface**.

Interface parameters



Field	Value	Description
Enable	off on; default: off	Enables DMVPN client.
Interface	interfaces; default: br-lan	Interface which will be using NHRP.
Network ID	number; default: none	Network ID of NHRP.
NHS	None Dynamic Custom; default: none	IP address of Next-Hop Server.
NBMA	ip; default: none	Non-Broadcast Multi-Access(NBMA) network IP address.
Hold-time	number; default: 7200	Specifies the holding time for NHRP Registration Requests and Resolution Replies sent from this interface or shortcut-target. The holdtime is specified in seconds and defaults to two hours.
IPsec support	off on; default: off	Use NHRP over IPsec.

Interface mapping



Field	Value	Description
IP address	ip; default: none	Network ID of NHRP.
NBMA	ip; default: none	IP address of Next-Hop Server.