



Configuring Static and Default Routes with KlasRouter

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- KlasRouter v2.0

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1.0 Introduction

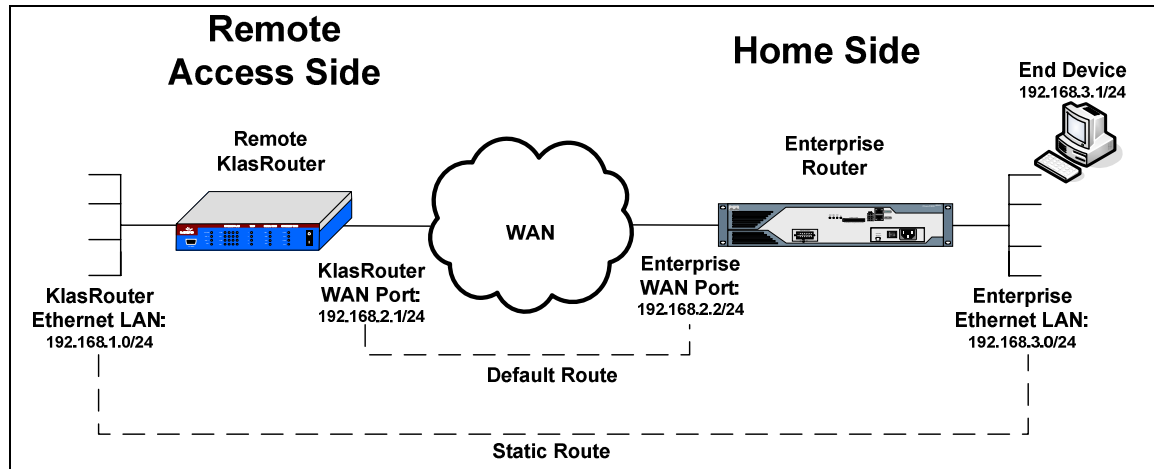


Figure 1. Static Route and Default Route Sample Topology

This document describes how to configure static and default routes using KlasRouter. Figure 1 shows a sample remote access topology with a KlasRouter connecting to an enterprise router through a generic WAN infrastructure. In the example, KlasRouter needs to communicate with an enterprise LAN on the home side. In order to do so, KlasRouter establishes a static routing path to that network. Also, KlasRouter uses a default route to the enterprise router. With a default route, all packets that have a destination with an unknown network address will be forwarded to the enterprise router so that it can attempt and find a path to the destination.

Static and default routes can be used effectively in a limited bandwidth environment to reduce the amount of bandwidth used on routing advertisements from routing protocols such as RIP, OSPF and EIGRP. Static routes can also be used to integrate the routing path from remote access networks into larger complex routing tables on enterprise routers. This saves memory on the remote access router while allowing its relevant routes to be redistributed into larger network architectures. Default routes also save memory by forwarding unknown packets to the enterprise router where it is more likely to find a network route. With hundreds of potential networks, it is more efficient to forward the packet on than to learn and maintain the entire routing table, especially since all packets must go through that router anyway. The following sections describe how to add and delete static and default routes with KlasRouter.

2.0 Configuration of KlasRouter

2.1 Cable Connections

Prior to beginning, ensure the following cable connections have been properly secured:

1. Power cord is plugged in and KlasRouter is on.

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2. Control Port Cable is connected to the PCs serial port.
3. Control Port Cable is connected to the 'Control' port on the front of the KlasRouter.

2.2 Establishing a HyperTerminal Session

To configure the KlasRouter, you must establish a HyperTerminal Session between a PC and the KlasRouter. Follow the instructions in **KlasRouter Application Note xxxx** to successfully establish a HyperTerminal Session and open the KlasRouter Main Configuration Menu.

2.3 Adding a Static Route

From the example in Figure 1, a static route is needed to establish a route from the Ethernet LAN on KlasRouter to an Ethernet LAN on the enterprise network. Follow the steps below to configure this static route on KlasRouter:

1. Enter '5' on the KlasRouter Main Configuration Menu to enter the Routing Configuration Menu.
2. Enter '2' on the Routing Configuration Menu, as shown below in Figure 2, to enter the Static Routing Configuration Menu.

```

Static Routing Configuration
-----
1) View Configured Routes
2) Add Route
3) Delete Route
Press 'x' to Return

Enter Option>2

```

Figure 2. Static Route Configuration Menu

3. Enter '2' on the Static Routing Configuration Menu in order to add a static route.
4. Type in the destination network and subnet mask. Following our example from Figure 1, the destination network is 192.168.3.0 with a 24 bit subnet mask. Type in '192.168.3.0/24' in order to identify this destination network.
5. Type in the Gateway IP Address for this network. Typically the Gateway is the connected interface opposite KlasRouter on the WAN network. In our example, the next hop after KlasRouter is the WAN Interface of the enterprise router, which is 192.168.2.2. Type in '192.168.2.2' in order to identify the Gateway IP Address (**Note: The subnet address is not required for this entry**).
6. Type in the KlasRouter WAN interface used to route the packet. For a list of all interfaces, type '?'. In our example, we will use the Ethernet WAN interface, so type in 'ixp1' to identify the Interface Name, as shown below in Figure 3.

```

Add Route
-----

Enter Destination IP Address[/Mask] | 'default' ('?' for help | 'q' to
quit)>192.168.3.1/24

Enter Gateway IP Address ('?' for help | 'q' to quit | <RET> for
none)>192.168.2.2

Enter Interface Name ('?' for help | 'q' to quit | <RET> for none)>ixp1

Adding route ... OK.

Press Enter to return to Static Routing Configuration

```

Figure 3. Adding a Static Route

7. Press 'Enter' to return to the Static Routing Configuration Menu.

2.4 Adding a Default Route

From the example in Figure 1, a default route is needed to establish a default route from KlasRouter to the enterprise router. KlasRouter will use this default route to forward all packets with an unknown network address. Follow the steps below to configure this default route on KlasRouter:

1. Enter '5' on the KlasRouter Main Configuration Menu to enter the Routing Configuration Menu.
2. Enter '2' on the Routing Configuration Menu, as shown below in Figure 2, to enter the Static Routing Configuration Menu.
3. Enter '2' on the Static Routing Configuration Menu in order to add a static route.
4. Type in 'default' to indicate that this will be the default route for all unknown networks.
5. Type in the Gateway IP Address for this network. Typically the Gateway is the connected interface opposite KlasRouter on the WAN network. In our example, the next hop after KlasRouter is the WAN Interface of the enterprise router, which is 192.168.2.2. Type in '192.168.2.2' in order to identify the Gateway IP Address (*Note: The subnet address is not required for this entry*).
6. Type in the KlasRouter WAN interface used to route the packet. For a list of all interfaces, type '?'. In our example, we will use the Ethernet WAN interface, so type in 'ixp1' to identify the Interface Name, as shown below in Figure 4.

```

Add Route
-----
Enter Destination IP Address[/Mask] | 'default' ('?' for help | 'q' to
quit)>default
Enter Gateway IP Address ('?' for help | 'q' to quit | <RET> for
none)>192.168.2.2
Enter Interface Name ('?' for help | 'q' to quit | <RET> for none)>ixp1
Adding route ... OK.
Press Enter to return to Static Routing Configuration

```

Figure 4. Adding a Default Route

7. Press 'Enter' to return to the Static Routing Configuration Menu.

2.5 Deleting a Static Route

1. Enter '3' on the Static Routing Configuration Menu to delete a route.
2. All of the currently configured static and default routes will be displayed. Enter the number corresponding to the route you would like to delete. In the example in Figure 5 below, the static route to 192.168.3.1/24 is being deleted.

```

Delete Route
-----
#   Destination      Gateway      Interface    Status
-----
1   192.168.3.1/24    192.168.2.2  ixp1         active
2   default           192.168.2.2  ixp1         active

Enter number of route to delete ('q' to quit)>1

Deleting route ... OK.
Press Enter to return to Static Routing Configuration

```

Figure 5. Deleting a Static Route

3. Press 'Enter' to return to the Static Routing Configuration Menu.

MORE INFORMATION

For more information about KlasRouter and other Klas products, visit the following Klas website:

<www.klasonline.com>

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