



Configuring GGSN Services

This chapter describes how to configure a Cisco router as a Gateway GPRS Support Node (GGSN). For a complete description of the GPRS commands in this chapter, refer to the *Cisco IOS Mobile Wireless Command Reference*. To locate documentation of other commands that appear in this chapter, use the command reference master index or search online.

This chapter includes the following sections:

- [Configuring the GGSN, page 17](#) (Required)
- [Customizing the GPRS Configuration, page 19](#) (Optional)

Configuring the GGSN

GPRS uses a logical interface called a virtual template to configure the router as a GGSN. This section describes the primary commands used to configure the router for GGSN services. Once the router has been configured as a GGSN, the subsequent configuration tasks describe how to establish connectivity from the GGSN to the SGSN and PDNs.

The following requirements must be met when configuring the GGSN on a Cisco Systems router:

- Configure only a single GGSN entity on each router using the **service gprs ggsn** global configuration command.
- Configure only a single virtual template interface (as virtual template 1) with GTP encapsulation on the GGSN.
- Configure the IP address of the virtual template for the GGSN on a different network than the physical interfaces that are configured on the router.
- Disable CEF switching using the **no ip cef** command while in global configuration mode. By default, CEF is enabled in GPRS 1.4 in Cisco IOS Release 12.2 and earlier. However, CEF is not supported in GPRS 1.4 in Cisco IOS Release 12.2 and earlier. Therefore, ensure CEF is not configured on your GGSN router.

To configure the GGSN, issue the following commands beginning in global configuration mode:

	Command	Purpose
Step 1	<code>router(config)# service gprs ggsn</code>	Specifies that the router functions as a GGSN.
Step 2	<code>router(config)# interface virtual-template <i>number</i></code>	Creates a virtual template interface, where <i>number</i> identifies the virtual template interface. This command enters you into interface configuration mode. Note The GGSN supports only a single virtual template for the GTP virtual interface.
Step 3	<code>router(config-if)# ip address <i>ip-address mask</i> [secondary]</code>	Specifies an IP address for the interface. Note The IP address of the virtual template interface must be on a different network than the physical interfaces on the GGSN.
Step 4	<code>router(config-if)# encapsulation gtp</code>	Specifies GTP as the encapsulation type for packets transmitted over the virtual template interface.
Step 5	<code>router(config-if)# gprs fastswitch</code>	(Optional) Enables fast switching on the GTP virtual template interface.

Customizing the GPRS Configuration

In addition to the commands used to configure the router for GGSN support, the GPRS feature supports several optional commands that you can use to customize your GPRS and GTP configuration.

For certain GPRS GTP processing options, the default values represent recommended values. Other optional commands also are set to default values, but Cisco Systems recommends modifying these commands to optimize your network as necessary, or according to your router hardware.

Some of the parameters that you should consider optimizing are configured using the following global configuration commands:

Command	Purpose
<code>router(config)# gprs gtp n3-requests requests</code>	Specifies the maximum number of times that the GGSN attempts to send a signaling request.
<code>router(config)# gprs gtp path-echo-interval interval</code>	Specifies the number of seconds that the GGSN waits before sending an echo-request message to check for GTP path failure.
<code>router(config)# gprs gtp t3-response response_interval</code>	Specifies the maximum time that the GGSN waits for a response from a signaling request message.
<code>router(config)# gprs maximum-pdp-context-allowed pdp_contexts</code>	Specifies the maximum number of PDP contexts (mobile sessions) that can be activated on the GGSN.

For information about configuring GPRS charging options, see the [“Customizing the Charging Gateway”](#) section on page 23 in the [“Configuring Charging on the GGSN”](#) chapter.

