



Version 9.3  
RightFax Push Proxy Gateway Guide

## **Edition**

Information in this document applies to version 9.3 of the RightFax Push Proxy Gateway Guide.

## **Trademarks**

Captaris and RightFax are trademarks of Captaris, Inc. All other company names, brand names, and product names are the property and/or trademarks of their respective companies.

## **Copyright Notice**

©2006 Captaris, Inc. All rights reserved.

Captaris  
10885 NE 4th Street  
Suite 400  
Bellevue, WA 98004  
(425) 455-6000  
<http://www.captaris.com>

No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language in any form by any means without the written permission of Captaris, Inc.

Information in this document is subject to change without notice. Companies, names, and data used in examples herein are fictitious unless otherwise noted.

Portions of this product Copyright © 2002-2006 Glyph & Cog, LLC. Portions Copyright © 2001 artofcode LLC. This software is based in part on the work of the Independent JPEG Group. This software is based in part on the work of the Freetype Team. Portions Copyright © 1998 Soft Horizons. Portions Copyright © 2001 URW++. All Rights Reserved. Outside In® Viewer Technology © 1992-2004 Stellent Chicago, Inc. All rights reserved. Includes Adobe® PDF Library technology. Adobe, Acrobat and the Acrobat logo are trademarks of Adobe Systems Incorporated. Portions Copyright ©1999 Ligature. Portions Copyright © TMS, Inc. 1994-2001. All rights reserved.

Certain portions of this software are copyrighted by Ligature Ltd. who makes no representation or warranties with respect to the contents hereof and specifically disclaims any implied warranties of merchantability and fitness for any particular purpose. The Ligature portion of the software is licensed by Ligature as is.

# RightFax 9.3 End User License Agreement

**IMPORTANT—READ CAREFULLY:** This End User License Agreement (“EULA”) is a legal agreement between you (either an individual or a single entity) and Captaris, Inc. (“Captaris”) for the Captaris software product identified above, which includes computer software and may include associated media, printed materials, and “online” or electronic documentation (“Product”).

YOU AGREE TO BE BOUND BY THE TERMS OF THIS EULA BY INSTALLING, COPYING OR OTHERWISE USING THE PRODUCT, IN WHOLE OR PART. IF YOU DO NOT AGREE TO THE TERMS OF THIS EULA, DO NOT INSTALL, COPY OR USE THE PRODUCT. INSTEAD, YOU SHOULD PROMPTLY CONTACT CAPTARIS FOR INSTRUCTIONS ON RETURN OF THE PRODUCT.

IF YOU HAVE NOT PAID A LICENSE FEE FOR THE PRODUCT, THEN YOU HAVE ACQUIRED AN EVALUATION EDITION OF THE PRODUCT, WHICH IS GOVERNED BY THIS EULA, EXCEPT THAT YOUR RIGHT TO USE THE PRODUCT AS AN EVALUATION EDITION IS LIMITED TO TWO (2) USER ACCOUNTS AND THE WARRANTIES AND CERTAIN OTHER PROVISIONS OF THIS EULA DO NOT APPLY AS STATED BELOW. YOUR RIGHT TO USE THE EVALUATION EDITION UNDER THIS EULA WILL AUTOMATICALLY TERMINATE AND THE PRODUCT WILL AUTOMATICALLY CEASE FUNCTIONING THIRTY (30) DAYS AFTER YOU INSTALL IT UNLESS YOU PURCHASE A LICENSE AND ACTIVATE THE PRODUCT BEFORE THE END OF SUCH THIRTY (30) DAY PERIOD. THE COMPONENTS OF THE PRODUCT ARE LICENSED SEPARATELY AND, EXCEPT FOR AN EVALUATION EDITION, YOUR LICENSE RIGHTS UNDER THIS EULA EXTEND ONLY TO THE COMPONENTS OF THE PRODUCT FOR WHICH YOU HAVE PAID THE LICENSE FEE.

AS THE FIRST STEP IN THE INSTALLATION PROCESS, WE RECOMMEND THAT YOU INSTALL AND RUN THE PREREQUISITE APPLICATIONS DISK AS DESCRIBED IN THE DOCUMENTATION. IF YOU DO NOT INSTALL AND RUN THE PREREQUISITE APPLICATIONS DISK, THEN THE WARRANTIES CONTAINED IN THIS EULA WILL NOT APPLY

TO THE PRODUCT. THE PREREQUISITE APPLICATIONS DISK INCLUDES PROGRAMS OWNED BY THIRD PARTIES (“THIRD PARTY PROGRAMS”). THE THIRD PARTY PROGRAMS ARE SUBJECT TO THIS EULA AND ANY SEPARATE LICENSE AGREEMENTS THAT ACCOMPANY SUCH PROGRAMS, EXCEPT THAT THE THIRD PARTY PROGRAMS ARE FURNISHED BY CAPTARIS “AS IS” AND WITHOUT ANY WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED.

## **Server Software License**

Subject to the terms and conditions herein, Captaris grants you a non-exclusive, non-transferable, personal license to install, run and use one copy of the server software provided as part of the Product on a single server that is owned or controlled by you for use in the capacity for which you have paid license fees. For purposes of this EULA, the capacity licensed by you is determined based on the number of ports (also referred to as channels), seats, CPUs, user accounts, or other capacity limitations on which software pricing is based. As an exception to the restriction set forth in the first sentence of this section on the number of servers on which the server software may be installed, you may install, run and use the following server software components on an unlimited number of servers owned or controlled by you; provided, you have paid the license fee for such software and such software is used only with a properly licensed RightFax Server module: Workserver, Doctranport, Sync, Production Service, Faxrpc, Exchange Gateway, SMTP Gateway, Lotus Notes Gateway, WPO Gateway, SAP Gateway, Isolated Engine Conversion, Java/XML module, and Lotus Notes module.

## **Client Software License**

Subject to the terms and conditions herein, Captaris grants you a non-exclusive, non-transferable, personal license to install, run and use the client software provided as part of the Product on an unlimited number of client computers or devices that are owned or controlled by you for use in the capacity for which you have paid license fees and solely with the server software properly licensed by you under this EULA.

## Documentation

You may make and use a reasonable number of copies of any documentation provided with the Product; provided, that such copies will only be used for internal business purposes in connection with the components of the Product for which you have paid the applicable license fees and are not to be republished or redistributed (either in hard copy or electronic form) beyond your premises.

## Backup

You may make one copy of the Product for back-up and archival purposes.

## Updates

Any software provided to you by Captaris which updates or supplements the original Product is governed by this EULA unless separate license terms are provided with such updates or supplements, in which case, such separate terms will govern.

## License Limitations

Except with respect to an Evaluation Edition, the preceding licenses apply only to the extent you have ordered and paid for the applicable licenses. The preceding sections state the entirety of your rights with respect to the Product. Captaris reserves all rights not expressly granted to you in this EULA. Without limiting the foregoing, you will not, and you will not authorize or permit any third party to:

- (a) use the Product for any purpose other than your internal business purposes;
- (b) use an Evaluation Edition for any purpose other than your evaluation and testing of the Product during the thirty (30) day evaluation period;
- (c) license, distribute, lease, rent, lend, transfer, assign or otherwise dispose of the Product or use the Product in any commercial hosted or service bureau environment;
- (d) reverse engineer, decompile, disassemble or attempt to discover the source code for or any trade secrets related to the Product, except and only to the extent that such activity is expressly permitted by applicable law notwithstanding this limitation;
- (e) modify, alter or create any derivative works of the Product;
- (f) exceed the capacity or concurrent user limitations for the license purchased by you; or

(g) remove, alter or obscure any copyright notice or other proprietary rights notice on the Product;

(h) disclose the results of any benchmark testing using the Product to any third party; or

(i) circumvent or attempt to circumvent any methods employed by Captaris to control access to the components, features or functions of the Product.

## Audit

Captaris shall have the right to audit your compliance with the terms of this EULA. You agree to grant access to Captaris to facilities, equipment, books, records and documents and to otherwise reasonably cooperate with Captaris in order to facilitate any such audit.

## Ownership

The Product is valuable property of Captaris and its suppliers and is protected by copyright and other intellectual property laws and treaties. Captaris or its suppliers own all right, title and interest in and to the Product and all copyright and other intellectual property rights in the Product.

## Limited Warranty

Provided that you installed and ran the prerequisite application disk in accordance with the documentation provided with the Product, Captaris warrants to you that the components of the Product for which you have paid the applicable license fees will perform substantially in accordance with the accompanying Product manual for a period of thirty (30) days from the date of receipt. To the maximum extent permitted by applicable law, Captaris's and its suppliers' entire liability and your exclusive remedy for failure of the software to conform to the foregoing warranty is, at Captaris's option, either (a) return of the license fee paid by you for the nonconforming components of the Product in exchange for return of the nonconforming components of the Product by you, or (b) repair or replacement of the components of the Product that does not meet the warranty. The foregoing warranty is void if the failure is due to accident, abuse or misapplication and does not apply to an Evaluation Edition or the Third Party Programs. Any replacement Product will be warranted for the remainder of the original warranty period, if any.

## Indemnification

Captaris will defend you against any judicial proceeding based upon a third party claim that the components of the Product for which you have paid the applicable license fee infringes any U.S. patent, U.S. trademark, copyright or

trade secret and will indemnify you against any damages, judgments and costs finally awarded against you in such proceeding; provided that, you: (a) give Captaris prompt written notice of the claim; (b) permit Captaris to control the defense and settlement of the claim; and (c) cooperate with Captaris in the defense and settlement of the claim. Captaris's defense and indemnification obligations will not apply to any actual or alleged infringement based upon: (i) modification of the Product by anyone other than Captaris, (ii) abuse, misapplication or casualty loss, (iii) use of the Product in combination with any other program or device, if such infringement would have been avoided but for such modification or combination, or (iv) failure to install or use any error corrections, fixes or other updates furnished by Captaris, if such infringement could have been avoided by such installation or use. In the event any component of the Product licensed by you or your use of such component is held to infringe or in Captaris's reasonable judgment is likely to infringe any third party intellectual property right, Captaris may, at its option, (x) obtain a license for you to continue to use such component, (y) modify the component so that it is noninfringing, or (z) terminate this EULA as it pertains to such component and refund a portion of the license fee paid by you for such component prorated over three (3) years from the date of purchase. The foregoing indemnification obligations do not apply to an Evaluation Edition or the Third Party Programs.

#### **Disclaimer of Warranties**

EXCEPT AS EXPRESSLY SET FORTH ABOVE, CAPTARIS AND ITS SUPPLIERS PROVIDE THE PRODUCT "AS IS" AND WITH ALL FAULTS. CAPTARIS AND ITS SUPPLIERS HEREBY DISCLAIM ALL OTHER WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, ARISING BY LAW OR OTHERWISE, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR USE, TITLE AND NONINFRINGEMENT, WITH REGARD TO THE PRODUCT. WITHOUT LIMITING THE FOREGOING, CAPTARIS DOES NOT WARRANT THAT THE PRODUCT WILL BE FREE OF BUGS, ERRORS, VIRUSES OR OTHER DEFECTS.

#### **Disclaimer of Certain Damages**

IN NO EVENT WILL CAPTARIS OR ITS SUPPLIERS BE LIABLE FOR THE COST OF COVER OR FOR ANY INCIDENTAL, INDIRECT, SPECIAL, PUNITIVE, CONSEQUENTIAL OR SIMILAR DAMAGES OR LIABILITIES WHATSOEVER (INCLUDING, BUT NOT LIMITED TO LOSS OF DATA, INFORMATION, REVENUE, PROFIT OR BUSINESS) ARISING OUT OF OR RELATING TO THE USE OR INABILITY TO USE THE PRODUCT OR OTHERWISE UNDER OR IN CONNECTION WITH THIS EULA OR THE PRODUCT, WHETHER BASED ON CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHER THEORY EVEN IF CAPTARIS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### **Limitation of Liability**

CAPTARIS'S AND ITS SUPPLIERS' LIABILITY ARISING OUT OF OR RELATING TO THE USE OR INABILITY TO USE THE PRODUCT OR OTHERWISE UNDER OR IN CONNECTION WITH THIS EULA OR THE PRODUCT IS LIMITED TO THE AMOUNT ACTUALLY PAID BY YOU FOR THE PRODUCT REGARDLESS OF THE AMOUNT OF DAMAGES YOU MAY INCUR AND WHETHER BASED ON CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHER THEORY. The foregoing disclaimer of warranties, disclaimer of certain damages and limitation of liability will apply to the maximum extent permitted by applicable law. The laws of some states/jurisdictions do not allow the exclusion of implied warranties or the exclusion or limitation of certain damages. To the extent that those laws apply to this EULA, the exclusions and limitations set forth above may not apply to you.

#### **Export Restrictions**

You acknowledge that the Product is subject to U.S. export restrictions. You agree to comply with all applicable laws and regulations that apply to the Product, including without limitation the U.S. Export Administration Regulations.

### **U.S. Government License Rights**

All Product provided to the U.S. Government is provided with the commercial license rights and restrictions described in this EULA. By installing, copying or using the Product, the U.S. Government agrees that the Product is “commercial computer software” or “commercial computer software documentation” within the meaning of FAR Part 12.

### **Trademarks**

This EULA does not grant you any rights in connection with any trademarks or service marks of Captaris or its suppliers.

### **Termination**

Without prejudice to any other rights, Captaris may terminate this EULA if you do not abide by the terms and conditions contained herein. Upon termination of this EULA, you must cease use of the Product and destroy all copies of the Product and all of its component parts.

### **Transfer**

You may not transfer your rights under this EULA to any third party.

### **Governing Law; Jurisdiction**

Unless expressly prohibited by local law, this EULA is governed by the laws of the State of Washington, U.S.A. without regard to any conflict of law principles to the contrary. The 1980 U.N. Convention on Contracts for the International Sale of Goods or any successor thereto does not apply. You hereby irrevocably submit to jurisdiction of the state and federal courts located in King County, Washington with respect to any proceeding under this EULA or relating to the Product. You will not prosecute any action, suit, proceeding or claim arising under or by reason of this EULA except in such courts.

### **Attorneys' Fees**

In any action or proceeding to enforce rights under this Agreement, the prevailing party will be entitled to recover costs and reasonable attorneys' fees.

### **Severability**

If any provision of this EULA is held by a court of competent jurisdiction to be invalid, illegal, or unenforceable, the remainder of this EULA will remain in full force and effect.

### **English Language**

It is the express wish of the parties that this Agreement and all related documents be drawn up in English. C'est la volonté expresse exigé par les parties que cette convention et tous les documents y afférents, soient rédigés en anglais seulement.

### **Entire Agreement**

This EULA sets forth the entire agreement of Captaris and you with respect to the Product and the subject matter hereof and supersedes all prior and contemporaneous understandings and agreements whether written or oral. No amendment, modification or waiver of any of the provisions of this EULA will be valid unless set forth in a written instrument signed by the party to be bound thereby.

# Contents

Chapter 1	<b>Introduction..... 9</b>	Chapter 5	<b>Understanding PAP Messages.....27</b>
	Using This Guide..... 9		Understanding Commonly Used PAP Messages.....28
	Customer Support ..... 10		PAP Message Size limits ..... 30
Chapter 2	<b>Installing the Push Proxy Gateway Software ..... 11</b>	Index.....	<b>31</b>
	Installation Requirements ..... 11		
Chapter 3	<b>Understanding the Push Proxy Gateway..... 13</b>		
	Submitting a Message to the PPG..... 13		
	Understanding Message Types ..... 13		
	Understanding Connectors ..... 14		
	Understanding Two-Way SMS Support..... 15		
	Understanding Log Files ..... 16		
	Understanding Firewalls..... 17		
Chapter 4	<b>Configuring the Push Proxy Gateway ..... 19</b>		
	Stopping and Starting the PPG Services..... 19		
	Enabling PPG for Windows Server 2003..... 20		
	Configuring the PPG..... 20		
	Testing the PPG Public Interface..... 25		





## Chapter 1

# Introduction

Thank you for buying the Push Proxy Gateway (PPG), a key member of the Captaris suite of Business Information Delivery solutions. The people who need to receive critical corporate information are often on the move, working out of the office and away from their PC. The PPG solves this problem, enabling existing applications to quickly and easily deliver information to mobile users. It can also be a natural extension of the Captaris RightFax enterprise fax and e-document delivery solution channels.

## Using This Guide

### Scope of This Guide

This guide gives installation and administration instructions for a standalone version of the Push Proxy Gateway product. This guide provides administration instructions for the Push Proxy Gateway product, which is automatically installed during a RightFax installation.

### Navigating Menus

This guide uses abbreviations for navigation in menus. For example, an instruction to select the **Save** command from the **File** menu is written **File > Save**.

### Notes and Warnings

Notes and warnings provide instructions for special circumstances, side effects and product interactions, and important reminders. Notes include information that you might find useful but do not affect the integrity of your computer hardware, software, or data. Warnings always indicate that failure to proceed carefully may result in loss of data or damage to hardware or software. Always read and understand warnings before proceeding with an instruction in which they appear.

## Customer Support

For the most current information, visit our Web site at <http://www.captaris.com>, then point to **Customer Support** and click **Contact Technical Support**.

Or send us e-mail at

**Support@Captaris.com**

When you need to speak to a support representative, call us.

**Phone:** +1 520-320-7070

**Hours:** Monday - Friday: 5:00 a.m. - 5:00 p.m. Pacific Standard Time

■ ■ ■

## Chapter 2

# Installing the Push Proxy Gateway Software

The PPG is automatically installed during the RightFax installation. This chapter provides system requirements and troubleshooting information for the PPG.



**Note** *The PPG uses Microsoft Internet Information Services (IIS) to accept push messages. Because of this you can make use of IIS features to enable such options and as address restrictions and authentication. For more information on these options, see your Microsoft IIS documentation.*

*During PPG installation, you might see the message Unable to start W3SVC. This indicates that Microsoft IIS is not running, and the PPG installation program has been unable to start it. Possible reasons for this are that you have not installed (or have disabled) IIS, you have set the IIS service startup to disabled, or your account does not have sufficient rights. If you see this message, cancel the PPG install program and make sure that IIS is installed and running properly before restarting the PPG installation.*



**Caution** *The PPG's public port (default TCP 8980) should be accessible to any computers that will send messages to the PPG. The other ports, especially the internal port (default 5001) and the administration port (8901) should not be accessible from the Internet. As with all servers, take care to keep the server up to date with any necessary patches. If the PPG accepts connections from the Internet, it is especially important to keep Microsoft IIS up to date with security patches.*

## Installation Requirements

Meet or exceed the following requirements before attempting to install the Mobility PPG software.

### Server OS Requirements

- Windows 2000 Server with Service Pack Four (SP4)
- Windows 2003 Server

### Administrative Client OS Requirements

- Windows 2000 Professional SP4
- Windows 2000 Server SP4
- Windows XP SP1A

### Server Hardware Minimum Requirements

#### Minimum Requirements for a Single Processor

- Single Processor P-III 500 with 256 MB of RAM
- Free Drive Space: 10 GB
- Network card with TCP/IP connectivity

**Minimum Requirements for Multiple Processors**

- Dual Processor P-III 996 with 512 MB of RAM
- Free Drive Space: 20 GB
- Network card with TCP/IP connectivity

**Multi-Server with External Load Balancing**

- IBM Network Dispatcher, or equivalent
- Two Application servers
- Single Processor P-III 966 with 512 MB of RAM
- Free Drive Space: 10 GB
- Network card with TCP/IP connectivity

**Web Client**

- Microsoft Internet Explorer 5.0 or later

■ ■ ■

## Chapter 3

# Understanding the Push Proxy Gateway

The PPG quickly and easily enables applications to deliver SMS, WAP Push, and MMS notification messages to mobile devices. It accepts messages from a Push Initiator (PI) and uses a Global System for Mobile Communications (GSM) modem, direct connection to a Short Message Service Center (SMSC), or direct UDP connection to deliver them via the mobile network to the target device.

Provided that the PAP message is formatted correctly according to the PAP specification (contained within the WAP 1.2.1 specification), the PPG will return a status message indicating its ability to process the request. The PAP message submitted to the PPG contains both the data to be pushed and the instructions for sending it to the correct device. For more information on PAP messages, see [“Understanding Commonly Used PAP Messages”](#) on [page 28](#).

## Submitting a Message to the PPG

A PI is any software application or service that creates a push request and submits it to the PPG. The push request itself is formatted according to the Push Access Protocol (PAP), a protocol using multipart MIME and XML.

The PAP message is submitted via an HTTP POST.

**Example** You can submit a message by posting to:

HTTP://1.2.3.4:8980

This example assumes that:

- The PPG is running on a server with the IP address 1.2.3.4, and
- The PPG is listening on the default port of 8980 (you can configure this port through the administration interface).

## Understanding Message Types

The PPG supports the delivery of three main types of messages:

- Plain text (SMS) messages
- Service Indication (SI) messages
- Service Loading (SL) messages

### Plain text (SMS) Messages

Plain text messages are sent by the PPG as text-only Short Message Service (SMS) messages. All GSM handsets on the market today can receive these SMS messages.

PPG is capable of two-way SMS messaging and can receive SMS messages in reply to the outgoing SMS messages that it sends.



**Note** Plain text messages should only be used with a Modem or SMPP connector.

## WAP Push Messages

WAP Push builds on the SMS concept to add a URL link to the message. The majority of handsets launched since 2002 can support WAP Push. These messages include two other message types: Service Indication (SI) and Service Loading (SL).

### SI Messages

An SI message (as defined in the SI specification, which is a part of the WAP 1.2.1 specification) sends a URL link with a caption to the client device. The SI message gives the user the option of whether or not to follow a visible URL link. An SI message is able to notify a user about a service (via a link, which can initiate a WAP web-browsing session) without preempting a user's current mobile device activities, such as making a voice call.

### SL Messages

An SL message (as defined in the Service Loading specification, which is a part of the WAP 1.2.1 specification) sends a URL link to a mobile device which is meant to be immediately loaded. In practice, the actual behavior is controlled by the WAP Push client that runs on the handset.

## Understanding Connectors

PPG uses *connectors* (sometimes called *channels*) to support different methods of delivering SMS and WAP Push messages. Version 4.0 supports Modem, SMPP, UDP, and Loopback connectors.

### Understanding the Modem Connector

Modem connectors allow messages to be submitted to the carrier's Short Message Service Center (SMSC) through a GSM modem that is attached to the PPG server. You can use any GSM modem that provides a serial-port (COM) interface and supports the GSM 07.07 and 07.05 AT commands. The GSM modem can be a card connected to your server; or a mobile phone (with a GSM modem) connected to your server via a data cable. PPG supports two serial port modems on a single server. Examples of compatible devices include:

#### Dedicated SMS modems

- Wavecom Fastrack Modem

#### Handsets connected via data cable

- Siemens S46
- Sony Ericsson T68i
- Sony Ericsson T306

### Modem Connector Throughput

The PPG throughput via a modem connector, using API, is as follows:

Single Modem:

- Sending Outbound only: 14 per minute
- Receiving Inbound only: 14 per minute
- Two-way (In and out simultaneously): 10 per minute

Two Modems:

- Outbound only: 14 per minute
- Inbound only: 30 per minute
- Two-way (In and out simultaneously): 10 per minute

## Understanding SMPP Connectors

SMPP connectors allow a high volume of messages to be sent via an SMSC. The supported protocol is SMPP version 3.4 and was tested with Simplewire.

### SMPP Connector Throughput

The PPG throughput via an SMPP connector, using API, is as follows:

- Two-way (simultaneously): 120 per minute

## Understanding UDP Connectors

UDP connectors allow a message to be delivered directly to a device. This type of connector is usually used by a carrier.

## Understanding Loopback Connectors

Loopback connectors are useful when testing or monitoring a connection, for example, it can be used to send a heartbeat message to monitor the PPG application.



**Note** You must have a default connector set in order to use the loopback connector. The loopback connector loads in the background of the default connector.

### Loopback Connector Throughput

- Two-way (In and out simultaneously): 600 per minute

## Understanding Two-Way SMS Support

PPG supports two-way SMS messaging via SMPP or Modem connectors.

### Two-Way SMS and SMPP Connectors

PPG can use SMPP connectors to assist RightFax in associating incoming SMS messages with RightFax user mailboxes for routing purposes.

The wireless carrier allocates a phone number or short code to the PPG Administrator. This number is referred to as a *reply number*. The reply number is used by mobile devices to reply to the SMS messages sent to them via the PPG. It is also used by the SMSC to receive the incoming SMS messages, that are then sent to PPG.

When PPG sends an SMS message, it specifies one of these available numbers in the **From** field. The recipient device sends an SMS message back to one of the reply numbers, all of which are intercepted by the SMSC and routed to PPG. Then, PPG can send the reply number, message contents, and the replying device's address to RightFax.

## Understanding Log Files

PPG maintains log files in its program directory. The three log file types are transaction, error, and debug logs. The log files are rotated, or rolled, every 24 hours by default, where each roll occurs at zero-hundred hours. When this occurs, new log files are created with filenames based on the current time.

The interval setting for transaction logs can be changed so that the roll occurs anytime between 10 minutes and 24 hours. A directory to which the transaction log files are saved can be specified.

Transaction log files are generated in a standard format that can be parsed or saved by external applications, as shown in Table 3a. Error log files display error and warning messages that are also viewable in the debug log file. Debug log files do not need to be enabled in order to generate and view the error log files.

The rolled logs and the current logging file have file names with the following format:

*prefix-GYYYYMMDDHHMM.LOG*

In the above format, *prefix* is *cppg* for transaction log files, *dbgp* for debug log files, and *errp* for error log files.

## Understanding Transaction Logs

This following table lists the formats used in a PPG transaction log.

Table 3a Transaction log formats

Col	Value	Description	Example
1	Type	The type of message: Outbound, Inbound, Notification, and Service. Service is used for PPG Service Startup/Shutdown messages.	Type: Outbound
2	Date and time	Date and time of request	12/03/2003 13:50:36:923
3	-	Static - separator	-
4	Push Initiator address	IP address of the Push Initiator	PI: 1.2.3.4;
5	Push ID	Push ID extracted from the PAP message	PushID: PI/64;
6	Device address (destination)	Subscriber number or address of destination extracted from PAP message	Device: +14255551212;
7	Notification URL	Address to be notified when the message has been sent. Does not apply to Modem connector.	NotifyTo: ;
8	Status	Status of the message, either Delivered or Failed.	Status: delivered



The transaction logs use this format:

Type: [value]; PI: [value]; MessageID: [value];  
FromAddress: [value]; ToAddress: [value]; NotifyTo:  
[value]; Status: [value]

Transaction log example:

12/03/2003 13:50:36:923 - Type: Outbound; PI:  
1.2.3.4; MessageID: PI/64; FromAddress:  
14255551234; ToAddress: +14255551212; NotifyTo: ;  
Status: Delivered

## Understanding Firewalls

As a communications product, PPG is As a communications product, the Infinite WAP Gateway is part of a larger system, linked to mobile devices, content servers, and more. There will usually be one or more firewalls present between these different components. This section explains which protocols must be allowed to pass through the firewalls for PPG to function correctly.

Table 3b Firewall configuration settings

From	To	TCP/ UDP	Port	Protocol	Notes
Push Initiator	PPG	TCP	8980	PAP over http	Incoming
Admin client	PPG	TCP	8901		Incoming
PPG “Direct” connector	WAP Device	UCP		WAP PUSH over UDP	Outgoing to port 2948

■ ■ ■



## Chapter 4

# Configuring the Push Proxy Gateway

You can configure PPG using the RightFax interface. This chapter describes the PPG configuration options, as well as provide information to help you get up and running.

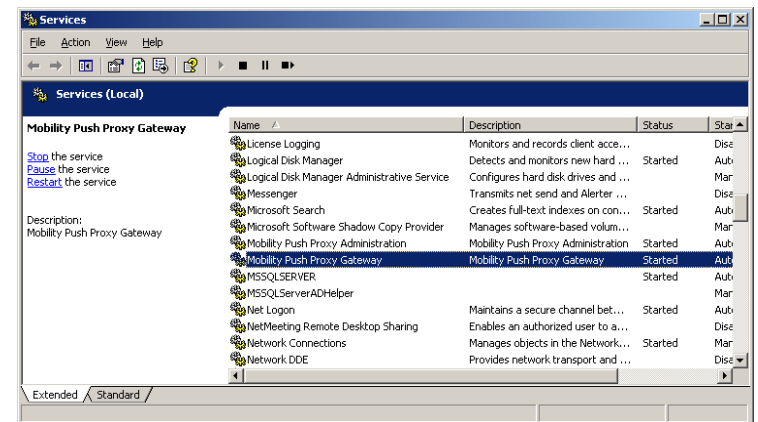
### Stopping and Starting the PPG Services

The PPG and the PPG Administration run as Windows services. To start and stop them, run the Windows Service Control Manager.

1. Click **Start > Settings > Control Panel**.
2. Double-click **Administrative Tools**.

3. Double-click **Services**. The **Services** dialog appears.

Figure 4.1 Starting or stopping the PPG service.



4. Click **Mobility Push Proxy Gateway** or **Mobility Push Proxy Administration**.
5. To stop the service, click **Action > Stop**.



**Note** The PPG services can only be started and stopped. Pause is not supported.

- To start the service, click **Action > Start**.

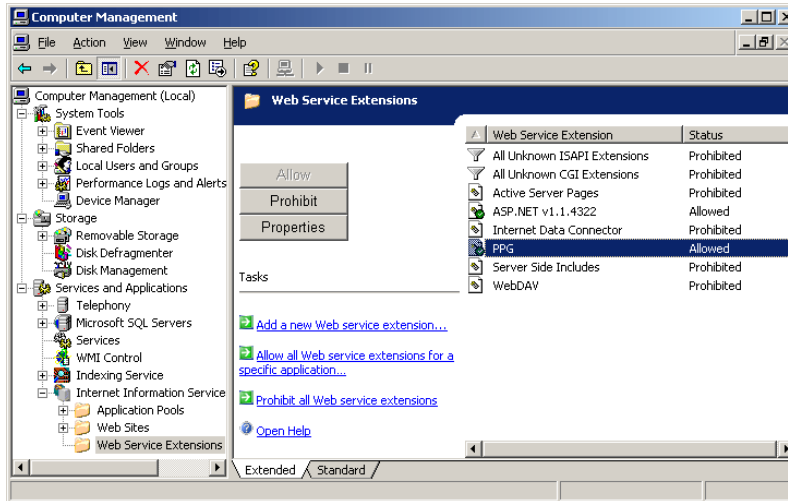


**Note** You should not use the remote feature of the Windows Service Control Manager. To control the service from a remote computer, use Terminal Services to log on to the server and use the Windows Service Control Manager.

## Enabling PPG for Windows Server 2003

The ISAPI extensions must be enabled on the appropriate web site for PPG to run on Windows Server 2003.

Figure 4.2 PPG as a Web Service extension



### To enable ISAPI extensions

- Open the Internet Information Services (IIS) Manager and click **Web Service Extensions** to display the available extensions.
- Right-click the right pane of the IIS Manager and choose **Add a new Web Service Extension**.

- The New Web Service Extension dialog box displays. Complete the fields as follows:
  - Enter **PPG** in the **Extension Name** field.
  - Click **Add**.
  - Navigate to the PPG installation directory, then navigate to **..CPPG\ISAPI**.
  - Select **CPPGISAPI.DLL** and click **OK**.
  - Select the **Set extension status to Allowed** checkbox.
  - Click **OK**.

- A new ISAPI extension is now available in the IIS Manager, which allows PPG to run under Windows 2003 Server.

## Configuring the PPG

After you make changes in the PPG interface via RightFax, (described in the following sections), you must stop and restart the PPG service before the changes will take effect. For more information, see [“Stopping and Starting the PPG Services”](#) on page 19.

### Accessing PPG via RightFax

You can access PPG configuration options via the Enterprise Fax Manager.

### To access PPG via RightFax

- Choose **Start > Programs > RightFax Enterprise Fax Manager**.
- In the left pane, select the server on which PPG is installed.
- Double-click **Mobility Push Proxy Administration**, located in the Service Name column.

The PPG Administration dialog box displays.

## Using the Interfaces tab

The **Interfaces** tab establishes connection details for the PPG. The Connector section of the tab displays different fields when you change the Active Connector.

Figure 4.3 The Interfaces tab –Modem

The screenshot shows the 'PPG Administration' window with the 'Interfaces' tab selected. The window has three sub-tabs: 'Interfaces', 'License Management', and 'Logging'. The 'Interfaces' tab is active and contains two main sections: 'Services Interface' and 'GSM Modem Connector'.  
  
In the 'Services Interface' section, there are four text input fields:  
- 'Send Message Port' with the value '5001'.  
- 'Receive Message Port' with the value '5002'.  
- 'Administration Port' with the value '8901'.  
- 'Active Connector' with a dropdown menu showing 'GSM Modem'.  
  
In the 'GSM Modem Connector' section, there are several fields:  
- 'Modem' with a dropdown menu showing 'comone'.  
- 'Enable Modem' with an unchecked checkbox.  
- 'Baud Rate' with a dropdown menu showing '9600'.  
- 'Parity' with a dropdown menu showing 'NOPARITY'.  
- 'Data Bits' with a dropdown menu showing '8'.  
- 'Stop Bits' with a dropdown menu showing 'ONESTOPBIT'.  
- 'Number' with a text input field containing '1234567890'.  
- 'SMSC' with a text input field containing '+1111111111'.  
- 'Modem Init String' with a text input field containing 'AT+CMGF=0'.  
  
At the bottom right of the window are 'OK' and 'Cancel' buttons.

**Send Message Port** – Enter the port number of the Internal Interface. This is a port used for communication between the IIS extension and the PPG service. It should not be accessible by outside/Internet computers. The port value is 5001 by default.

**Receive Message Port** – The PPG service sends inbound messages to RightFax via this port. This port uses 5002 by default.

**Administration Port** – The PPG Administration service listens on this port for configuration requests and uses 8901 by default. This port must be on the machine where PPG is installed.

**Active Connector** – Choose the connector to be used by the PPG. GSM Modem and SMPP are supported.

These fields are specific to the GSM Modem connector:

**Modem** – Select an available modem from the drop down box.

**Enable Modem** – Select this checkbox to instruct PPG that the selected port is active and should use these configuration settings.

**Modem Properties** – Change the fields for Baud, Data Bits, Parity, and Stop Bits as appropriate for the modem in use.

**Number** – The phone number of the cell phone or cellular modem that will connect to the communications port.

**SMSC** – Enter the telephone number of the SMSC used by the carrier to which your modem is subscribed. Contact your carrier to get this number.

**Modem Init String** – Enter the initialization string. The default is AT+CMGF=0.

These fields are specific to the SMPP connector:

Figure 4.4 The Interfaces tab – SMPP

The screenshot shows the 'PPG Administration' window with the 'Interfaces' tab selected. The 'Services Interface' section contains fields for 'Send Message Port' (5001), 'Receive Message Port' (5002), 'Administration Port' (8901), and 'Active Connector' (SMPP). The 'SMPP Connector' section includes fields for 'SMSC IP Address', 'Port' (3000), 'SMPP Version' (52), 'System ID', 'System Type' (1), 'Password', 'Address Range', 'Retry Interval', 'Timeout Interval' (5000), 'Max Msg/Min' (120), and 'Msg Lifetime' (30). There are 'OK' and 'Cancel' buttons at the bottom.

**SMSC IP Address** The IP address of the carrier.

**Single Port** Choose to instruct PPG to communicate with the SMSC via a single port.

**Double Port** Choose to instruct PPG to communicate with the SMSC via a dual port. This is the default.

**System ID** This is identification on the carrier's system, such as a user name. It is provided by the carrier.

**System Type** This is additional information used to identify the user and is provided by the carrier.

**Password** This password is used to connect to the SMSC and is provided by the carrier.

**Port** The port used to connect to the SMSC, in the format IP Address:Port.

**SMPP Version** The version number is generally 3, depending on the SMSC implementation.

**Retry Interval** The number of seconds the PPG waits to retry a connection, after a connection fails.

**Timeout Interval** The connection is no longer valid if a response is not received within this number of milliseconds.

**Max Msg/Min** The maximum number of messages sent per minute.

**Msg Lifetime** The number of hours a message is considered valid. The message is discarded if it is not delivered within this time frame.

These fields are specific to the UDP connector:

Figure 4.5 The Interfaces tab – UDP

The screenshot shows the 'PPG Administration' window with the 'Interfaces' tab selected. The 'UDP' section is active, showing the following fields:

- Send Message Port: 5001
- Receive Message Port: 5002
- Administration Port: 8901
- Active Connector: UDP Direct (dropdown menu)
- Default destination port: (empty text box)

At the bottom right, there are 'OK' and 'Cancel' buttons.

**Default Destination Port** – Enter the push access port number on the device side, such as a cell phone or PDA. The default value is 2948.

## Using the License Management tab

The License Management tab allows you to add or remove PPG licenses.

A transaction is defined as one message sent to one address. For example:

- One PAP message, sent to one phone, equals one transaction.
- One PAP message, including a list of 10 phone numbers, equals 10 transactions.

Figure 4.6 The License Management tab

The screenshot shows the 'PPG Administration' window with the 'License Management' tab selected. The 'Installed Licenses' section is active, showing the following fields:

- Serial Number: (text box containing '0000000-65536-DRYGZRMQ')
- Add (button)
- Delete (button)
- Licensed transaction per minute: 1 (text box)

At the bottom right, there are 'OK' and 'Cancel' buttons.

**Serial Number** – The full license key.

**Add** – Click to add the license entered in the Serial Number field to the list of available PPG licenses.

**Delete** – Click to remove a selected license from the list.

**Licensed transaction per minute** – A license is automatically installed that allows one transaction per minute. Once additional licenses are added to this page, the Mobility Push Proxy Gateway service verifies the validity of the license.



**Note** The Mobility Push Proxy Gateway service checks for additional license keys periodically. You must stop and restart the service if you wish to update the number of transactions per minute immediately.

## Using the Logging tab

The **Logging** tab determines how transaction and debug log files are collected. The transaction log contains the Call Detail Records (CDR) and will be of the form:

*cppg-GYYYYMMDDHHMM.LOG*

where G is the gateway ID, and the rest of the string is the date and time the log file started.

See [“Understanding Log Files”](#) on [page 16](#) for more information about log files.

Figure 4.7 The Logging tab

PPG Administration[ 127.0.0.1:8901 ]

Interfaces | License Managment | **Logging**

Transaction Log

Number of days to retain transaction log: 90

Automatically rotate logs? ☐

Rotate logs every 0 minutes.

Rotate logs to sepearte directory:

Debug Log

Debug Log: ☐

Retain Debug Logs for(Days): 90

OK Cancel



**Number of days to retain transaction logs** - Enter a value for how many days old log files will remain on the system. By default, 90 days of previous log activity is saved.

**Automatically rotate logs** - Select to rotate log files automatically. By default, the server's log file is closed and a new log file is created at midnight each day. This option closes the current log file and opens a new one more frequently.

**Rotate logs every *n* minutes** - Specifies how often log files should be rotated. Type the value in hours and minutes (00:10 to 24:00).

**Rotate logs to separate directory** - By default, the rotated log files are saved in the PPG installation directory. To save the log files in a different directory, type the complete path of the target directory in this box.



**Note** *Log files must be saved on a local drive. They cannot be saved to a mapped network drive.*

**Debug Log** - Select to enable a detailed log file of gateway activity. Debug logs can be quite large, so this setting should be off for normal operation. If the debug log is enabled, then the PPG service must be stopped and restarted before it will take effect.



**Important** *Enable the "Enable Debug Log" setting only if directed to do so by Captaris customer support.*

**Retain Debug Logs for (Days)** - Enter a value for how many days the debug log files will remain on the system. The default is 90.

## Testing the PPG Public Interface

To test the PPG, you need a Push Initiator (PI) to submit push commands to the PPG. The PI software will create a PAP message and send it to the PPG via POST.

### Setting up the Test Components

1. Locate PI software. For this test, we recommend the OpenWave PUSH Initiator Tool (PushIT), which you can download at:  
[http://www.openwave.com/us/products/mobile/developer\\_products/wap\\_push\\_library/index.htm](http://www.openwave.com/us/products/mobile/developer_products/wap_push_library/index.htm).  
The PI software requires Java, which you can download from SUN Microsystem's Web site.
2. Configure the push tool to connect to the PPG—use the IP address or DNS name for the server where you installed the PPG.
3. If your PI tool has options for using basic authentication, do not select them.

### Constructing the PAP Message

The PAP message is a multipart MIME document. This test examines the first and second MIME parts. The first MIME part is the control entity, which tells the PPG how to send the push message. The second MIME part is the content entity, which is the content of the push message. For more information on constructing PAP messages, see ["Understanding PAP Messages"](#) on [page 27](#).

### Constructing the Control Entity

Minimally, the control entity should provide an arbitrary push ID and an address.

Example control entity:

```
Content-Type: application/xml
<?xml version="1.0"?>
<!DOCTYPE pap PUBLIC "-//WAPFORUM//DTD PAP
1.0//EN"
"http://www.wapforum.org/DTD/pap_1.0.dtd">
<pap>
<push-message push-id="12345">
<address address-value="[PLACE YOUR ADDRESS
HERE]"/>
</push-message>
</pap>
```

### Constructing the Content Entity

The most common form of WAP push message is a Service Indication (SI).

Example SI content entity:

```
Content-Type: text/vnd.wap.si
<?xml version="1.0" encoding="iso-8859-1"?>
<!DOCTYPE si PUBLIC "-//WAPFORUM//DTD SI
1.0//EN" "http://www.wapforum.org/DTD/SI.dtd">
<si>
<indication href="http://wap.yahoo.com">Here is a
message.</indication>
</si>
```

### Sending the PAP Message

- Send the PAP message directly from the PI software to the PPG, or save the message so you can send it (via POST) through some other means.

■ ■ ■



**Important** Your PI software might create more MIME parts than described in this test. If so, delete the extra parts (the PPG does not support multipart MIME content within the content entity).

## Chapter 5

# Understanding PAP Messages

For a Push Initiator to send a message through the PPG, it must submit a Push Access Protocol (PAP) message to the PPG. The PAP format is defined by the Open Mobile Alliance. To download the current specification, visit <http://www.wapforum.com>.

PAP messages are in multipart MIME format. The first MIME part contains the instructions for sending the data (the control entity), and the second MIME part contains the data itself (the content entity). These two main sections are separated into the first and second MIME parts of the PAP message.

### Supported PAP 1.0 Operations

The PPG supports Push Submission operations (sent from the PI to the PPG) and Push Response operations (sent from the PPG to the PI) as a response to the Push Submission operation. Progress Notes, which are optional elements of a Push Response, are not currently supported.

PI-to-PPG operations such as Push Cancellation, Status Query, and Client Capabilities Query are not supported in this release.

In the Push Response operation, the most commonly returned error codes are:

1001: Accepted for Processing

2000: Bad Request

4000: Service Failure

4001: Service Unavailable

A complete set of error codes can be found in the WAP Push Access protocol, section 9.3.

## Understanding Commonly Used PAP Messages

This section contains examples of commonly used PAP messages. If you are not familiar with the PAP message format, you can use the following examples as templates. The sections of the message that you can change are highlighted in **bold-underline**.

### Plain Text

This is a simple plain text message that can be submitted to the PPG. The subscriber number is +14255551212, and the content of the message is "This is a plain text message". Note the "Content-Type: text/plain" which tells the PPG what type of message this is.

Content-Type: text/plain; boundary=PMasdfglkjhqwert;  
type="application/xml"

<?xml version="1.0"?>

<!DOCTYPE pap PUBLIC "-//WAPFORUM//DTD PAP 1.0//EN"  
"http://www.wapforum.org/DTD/pap\_1.0.dtd">

<pap>

<push-message push-id="**PI/6**

<address  
address-value="WAPPUSH=+**14255551212**/type=PLM  
N@"/>

</push-message>

</pap>

--PMasdfglkjhqwert

Content-Type: text/plain

**This is a plain text message**

--PMasdfglkjhqwert--

### PPG Response

If the PPG accepts the message for delivery it will respond with its own PAP document.

<?xml version="1.0"?><!DOCTYPE pap PUBLIC  
"-//WAPFORUM//DTD PAP 1.0//EN"  
"http://www.wapforum.org/DTD/pap\_1.0.dtd">

<pap>

<push-response push-id="PI/6"  
sender-address="127.0.0.1" sender-name="localhost"  
reply-time="2003-11-11T15:16:18Z">

<response-result code="1001" desc="Accepted for  
Processing">

</response-result>

</push-response>

</pap>

Note the *push-id*, which matches the ID sent to the PPG, and the response code: *1001*, which is described as *Accepted for Processing*. “[Table 5a: Common push response status codes](#)” lists possible values for the response codes.

Table 5a Common push response status codes

Code Description	Notes
1001 Accepted for processing	This is the desired return status code.
2000 Bad request	This most often occurs with a malformed PAP message sent from the PI.
3001 Not implemented	This most often occurs when the PAP message content entity contains a non-supported MIME type (such as multipart MIME or WML).
4001 Service unavailable	This most often occurs when the PPG has reached its licensed limit for transactions over a time interval. This request can be retried by the push initiator.

## Service Indication

The following is a simple Service Indication (SI) message that can be sent through the PPG. This message will direct the user to the URL <http://wap.yahoo.com> with the text *Try Yahoo!*

Content-Type: text/plain; boundary=PMasdfglkjhqwert;  
type="application/xml"

<?xml version="1.0"?>

<!DOCTYPE pap PUBLIC "-//WAPFORUM//DTD PAP 1.0//EN"  
"http://www.wapforum.org/DTD/pap\_1.0.dtd">

<pap>

<push-message push-id="PI/3">

<address  
address-value="WAPPUSH=+14255551212/type=PLMN@"/>

</push-message>

</pap>

--PMasdfglkjhqwert

Content-Type: text/vnd.wap.si

<?xml version="1.0" encoding="iso-8859-1"?>

<!DOCTYPE si PUBLIC "-//WAPFORUM//DTD SI 1.0//EN"  
"http://www.wapforum.org/DTD/SI.dtd">

<si>

<indication href="http://wap.yahoo.com"

si-id = "WapIDE\_SI/0">

Try Yahoo!</indication>

</si>

--PMasdfglkjhqwert--

## Service Loading

Similar to the SI message, the following is a Service Loading (SL) message that directs the user to Google.

```
Content-Type: text/plain; boundary=PMasdfglkjhqwert;
type="application/xml"
<?xml version="1.0"?>
<!DOCTYPE pap PUBLIC "-//WAPFORUM//DTD PAP 1.0//EN"
"http://www.wapforum.org/DTD/pap_1.0.dtd">
<pap>
<push-message push-id="PI/4">
    <address
address-value="WAPPUSH=+14255551212/type=PLMN@"/>
</push-message>
</pap>
--PMasdfglkjhqwert
Content-Type: text/vnd.wap.sl
<?xml version="1.0"?>
<!DOCTYPE sl PUBLIC "-//WAPFORUM//DTD SL 1.0//EN"
"http://www.wapforum.org/DTD/SL.dtd">
<sl href="http://wap.google.com" action="execute-high"/>
--PMasdfglkjhqwert-
```

## PAP Message Size limits

When sending messages via the Modem connector, all messages—whether plain text, WAP Push, or MMS notifications—are carried in a single SMS message. In the GSM environment, a single SMS message holds 140 bytes of information.

When sending plain text messages, the PPG assumes that the text only uses characters contained in the GSM 7-bit default character-set, as specified by GSM 03.38. In this case, the SMS specifications allow 160 7-bit characters to be carried in the 140-byte SMS message. The content of the PAP message may therefore be up to 160 single-byte characters in length.

If the PI needs to send a plain text message that includes characters that are not contained in the GSM 03.38 character-set (certain Scandinavian characters, Thai, Chinese, and so on), the PAP message must use the Unicode character-set, specified by adding the “charset=csUnicode” header, as in Content-Type: text/plain; charset=csUnicode. Since each Unicode character occupies two bytes, the content of the PAP message cannot exceed 70 double-byte characters.

In the case of SI and SL messages, we recommend that the *payload* (the text message and the URL) be kept under 120 bytes, since the WAP information adds some overhead.

■ ■ ■

# Index

## C

Channel. See connector.  
Codes  
    common status codes [29](#)  
Configuration  
    PPG [19](#)  
Content entity, constructing to test the  
    PPG [26](#)  
Control entity, constructing to test the  
    PPG [25](#)  
Conventions in this document [9](#)  
Customer support, contacting [10](#)

## D

Document conventions [9](#)

## E

Error codes and messages. See Codes  
Event log. See Log

## G

Gateway  
    see PPG  
Guide, using this guide [9](#)

## H

Hardware requirements [11](#)  
Help [10](#)

## L

Log files  
    configuring [24](#)

## M

Messages  
    plain text [13](#)  
    service indication [14](#)  
    service loading [14](#)  
    SMS [13](#), [15](#)  
    WAP push [14](#)

## O

Opening the PPG [19](#)

## P

PAP  
    constructing a message to test the  
        PPG [25](#)  
    example plain text message [28](#)  
    example service indication message [29](#)  
    example service loading message [30](#)  
PPG  
    understanding [13](#)  
Prerequisites. See Requirements

## R

Requirements  
    PPG installation [11](#)  
Return codes. See Codes

## S

Service  
    PPG [19](#)  
Setting up  
    PPG [20](#)  
SMS, Two-way [15](#)  
Software requirements [11](#)  
Status codes. See Codes  
Support  
    getting help [10](#)

**T**

Technical support, contacting [10](#)

Transaction log. See Log

Troubleshooting [10](#)

Two-way SMS [15](#)

**U**

Using this guide [9](#)