



UPGdirect™

TCP/IP Interface Guide

Introduction

Universal Payment Gateway's UPGdirect is a real time card processing system that converts the traditional two stage authorisation and payment processes into one convenient 'transaction' process.

UPGdirect is designed for merchants running EPOS or EFT terminals, either with or without store controllers, and merchants running call centres.

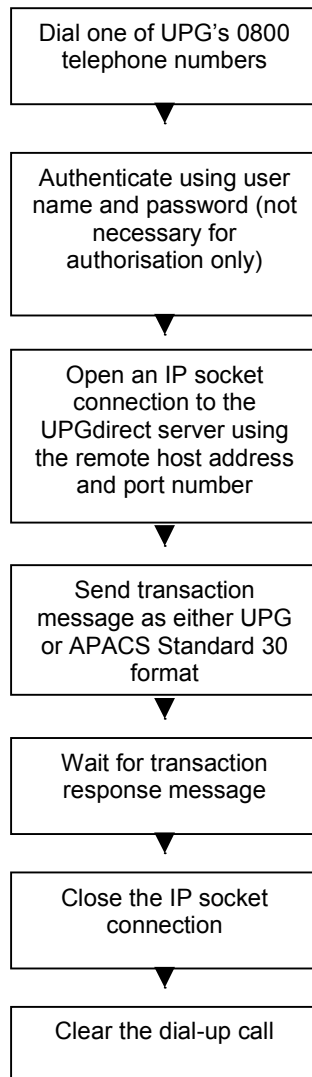
UPGdirect can be accessed via dial-up telephone - analogue PSTN or ISDN, leased line using either TCP/IP or X.25 protocols or secure Internet via https or IPSEC 3DES VPN.

This document is aimed at those who wish to write systems that communicate with UPGdirect using TCP/IP. Typically these will be EPOS terminal manufacturers and software companies that write call centre systems. Before you begin, you should be familiar with the concepts of IP sockets.

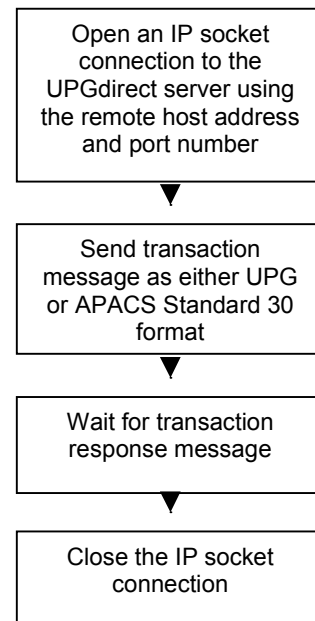
If you wish to communicate with UPGdirect using X.25 you will need a copy of the UPGdirect X.25 Interface Guide.

Sequence of Events

**For those communicating with UPGdirect
using dial-up connections**



**For those communicating with UPGdirect
using leased line or secure Internet
connections**



General Communication Procedure

Communicating with UPGdirect using dial-up connections

1. If your EPOS terminal or computer uses a modem or ISDN terminal adapter (TA), use Dial-up Networking or equivalent to dial the primary UPGdirect 0800 telephone number. If you are doing one-shot transactions, you will have been issued with a user name and password when your 0800 numbers were assigned by UPG.

If your EPOS terminal or computer uses a router, you will normally use the router's dial-on-demand functionality and configure it with the UPGdirect 0800 telephone number, user name and password if appropriate.

If a line busy or line unobtainable tone is obtained, you must make two further attempts using the primary 0800 number before using your secondary 0800 telephone number.

2. Once your modem, TA or router has successfully authenticated with UPGdirect, you will need to establish an IP socket connection.

Depending upon your particular installation, you will be required to use either static IP addressing - addresses provided by UPG - or an IP address dynamically assigned by UPG. The most appropriate methodology for your implementation will be discussed jointly between you and UPG.

If you are using a Microsoft Windows® based EPOS terminal, IP sockets connections are facilitated using Winsock.

If you are using a generic router that is not specifically set to carry IP traffic by default, you may need to set up Point-to-Point Protocol (PPP) prior to establishing the IP socket connection. You will have been issued with the UPGdirect server's IP address and port number to which you are required to connect.

3. Once an IP socket connection has been made, simply send a Transaction Request Message in either UPG Format 2.1 or greater, APACS Standard 30 version 17 or greater with UPG auxiliary data record or any of the UPG supported commercial formats over the socket.
4. UPGdirect will normally respond to the Transaction Request Message by returning a Transaction Response Message within a couple of seconds. A timeout period of 20 seconds is recommended before the EPOS terminal closes the IP socket and clears the call. The terminal should either cancel the transaction or retry.
5. The IP socket should be immediately closed as soon as the Transaction Response Message has been received.
6. The line should be immediately cleared as soon as the IP socket has been closed. You should not rely on idle timers to clear the line as this may incur extra call charges for the merchant.

Communicating with UPGdirect using leased line or secure Internet connections

1. You will already have an IP connection to a UPGdirect Managed Router via leased line or secure Internet. You will have been issued with the UPGdirect server's IP address and port number to which you are required to connect.

You need to make discreet IP socket connections for each transaction request using static IP addressing - an address that we will issue.

If you are using a Microsoft Windows® based EPOS terminal, IP sockets connections are facilitated using Winsock.

2. Once an IP socket connection has been made, simply send a Transaction Request Message in either UPG Format 2.1 or greater, APACS Standard 30 version 17 or greater with UPG auxiliary data record or any of the UPG supported commercial formats over the socket.
3. UPGdirect will normally respond to the Transaction Request Message by returning a Transaction Response Message within a couple of seconds. A timeout period of 20 seconds is recommended before the EPOS terminal closes the IP socket and either cancels the transaction or retries.
4. The IP socket should immediately be closed as soon as the Transaction Response Message has been received.