

Digital Meter Networking Technical Specification For PC Meter Connect Desktop Application And USB LAN Adapter

Guidelines for Support Personnel

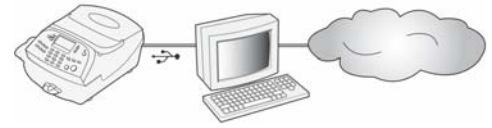
This document is designed for technical support personnel in your organization responsible for determining how the business will connect the Ethernet enabled Digital Meter to your corporate LAN, and set up firewall access to the Internet. The document is divided into two separate sections to provide networking technical details based on the connectivity option you've selected (LAN adapter or PC Meter Connect Desktop Application) for your Digital Meter. Because of the multitude of networks in use by our customers, Pitney Bowes cannot provide individual guidance with respect to each organization's infrastructure characteristics. We will however, provide all of the necessary information for each customer to provide a secure connection to the Pitney Bowes infrastructure for the services necessary to operate the Ethernet enabled Digital Meter in your secure network environment.

Meter Security Overview

The PC Meter Connect desktop application, LAN adapter, and Digital Meter are certified as a system by ICSA Labs, an independent division of Verizon Business offering vendor-neutral testing and certification of security products. Many of the world's top security vendors submit their products for testing and certification at ICSA Labs. Businesses rely on ICSA Labs to authoritatively set and apply objective testing and certification criteria for measuring product compliance and reliability. Visit <http://www.icsalabs.com> to learn more or review our certification.



Networking Details using PC Meter Connect Desktop Application



PC Meter Connect is a desktop application you install on your PC to allow your meter to connect to the Pitney Bowes Data Center through your PC's Internet connection, rather than over a standard telephone line. Postage refills and updates will be completed efficiently and much quicker via the Internet. The desktop application software is provided as a connectivity option for your meter.

If you have decided to connect your meter to the Pitney Bowes Data Center using PC Meter Connect, review the FAQs below to obtain answers to the most commonly asked questions applicable to meter models mailstation 2, DM125, DM300c, DM400c, and DM475.

PC Meter Connect and Network Frequently Asked Questions (FAQs)

1. What are the minimum PC system requirements for PC Meter Connect desktop application?

- Windows 2000, Windows XP (32-Bits and 64 Bits), Windows Vista (32-Bits and 64 Bits), and Windows 7 (32-Bits and 64 Bits)
- 1.2 GHz processor, 512 Mb RAM
- USB port
- Administrative privilege to install software
- Microsoft .NET framework 2.0 (required for PC Meter Connect) will be automatically installed if it is not ready on the PC. This is a one-time installation.
- Internet Connection
- Non-Windows Operating Systems, e.g. Mac and Linux, are not supported

2. What are the network requirements for the meter using the PC Meter Connect desktop application?

- The System (Meter and PC Meter Connect desktop application) requires an Internet connection, accessed through a Wired or Wireless LAN.
- The System supports 10/100 Ethernet transfer rates; Full Duplex.
- The System will initiate all communication.
- The System will initiate all communication via HTTP, HTTPS, and FTP.
- The System will communicate to external Web Services via HTTP over Port 80.
- The System will communicate to PB secure server(s) via HTTPS over port 443.
- The System will communicate to PB data server via FTP, reference port details below.
- The System will use Port 53 for DNS lookup.

3. What access needs to be opened for my Firewall?

It is recommended your meter be connected through a firewall. If unrestricted outbound access is not allowed in a particular organization, then Network access to Pitney Bowes' servers is accomplished by allowing access to the domains listed in the table below. To avoid potential future firewall issues, it is **highly recommended** domains are used instead of IP addresses, because IP addresses have a tendency to change. Also, some domains are country-specific, so

reference the country column to see if it is applicable to your meter.

URL	Domain	Country	Protocol and Ports	Purpose
		All Countries	Outbound UDP on Port 53	DNS will utilize User Datagram Protocol (UDP) to resolve domains.
http://www.pb.com Note: If you have required access, clicking this URL will present the Pitney Bowes Home page.	www.pb.com	All Countries	Outbound HTTP on Port 80	This URL is used by PCMC to test internet connectivity. PCMC connects to the PB Home page.
http://distserv1.pb.com/dstproduct.asp	distserv1.pb.com	All Countries, except India	Outbound HTTP on Port 80	PCMC to Distributor communication to obtain list of servers PCMC will establish communication for the active session.
http://cometserv2.pitneybowes.com.au/t3cometserver_04.asp http://cometservd1.pb.com/t3cometserver_16.asp http://cometserv1.pitneybowes.jp/t3cometserver_02.asp http://cometserv1.pb.com/t3cometserver_03.asp Note: If you have required access, clicking this URL should provide the following response from within your default web browser: {00000000-0000-0000-0000-000000000000} 0	cometserv1.pitneybowes.com.au cometservd1.pb.com cometserv1.pitneybowes.jp cometserv1.pb.com	Australia Canada Japan USA	Outbound HTTP on Port 80	PCMC to Comet Server communication to complete postal security device (PSD) audits, check your account balances, and to transfer funds from your PbP account to the PSD.
https://acctserv1.pb.com/acctservice/default.aspx	acctserv1.pb.com	USA and Canada	HTTPS on Port 443 or TLS	The URLs listed in this section are used to upload meter accounting data for Inview and Total Meter Reporting. Inview and Total Meter Reporting are optional services.
http://pbdls1.pb.com/PrdUpdate.dll Note: If you have required access, clicking this URL should provide the following response from within your default browser: <?xml version="1.0" ?> - <FileUpdateResponse> <Msg>301</Msg> </FileUpdateResponse>	pbdls1.pb.com	All Countries, except India	Outbound HTTP on Port 80	PCMC to Download Services global load balancer to Application Server communication used to send meter's configuration and determine whether updates are available. Updates include postal tariff changes, graphics (Ads, inscriptions), feature changes, and meter firmware updates.
http://pbdls1.pb.com/DLA/Service.svc	pbdls1.pb.com	All Countries, except India	Outbound HTTP on Port 80	PCMC to Download Services Application Server communication used to send meter's configuration and determine whether updates are available. Updates include postal tariff changes, graphics (Ads, inscriptions), feature changes, meter firmware, and PCMC.
	dlsdlp1T.pb.com dlsdlp1z.pb.com dlsdlp1.pb.com dlsdlp1b.pb.com	All Countries, except India	Unrestricted FTP Note: Reference FAQ 4 for additional Port details. OR HTTPS on Port 443 or TLS	PCMC to Download Services load balancer used to download customer's CCD/Order files, postal tariff changes, graphics (Ads, inscriptions), feature changes, and meter firmware updates. The Protocol used depends on selected protocol, see Internet Settings menu from PC Meter Connect desktop application.
	pbdlst1.pb.com dlsdlp1.pb.com	All Countries	HTTPS on Port 443 or TLS	PCMC to Download Services load balancer for PCMC desktop application updates and diagnostic error log uploads.
https://pbdlst1.pb.com/UploadService/Service.svc https://dlsdlp1.pb.com/	pbdlst1.pb.com	All Countries	HTTPS on Port 443 or TLS	PCMC to Download Services communication to send PCMC diagnostic error logs

Protocol

- HTTPS Mode
- FTP Mode
- Passive (Default)
- Active

PC Meter Connect™

Internet settings

HTTPS Transfer Encoding Method

- Non-Chunked (Default)
- Chunked

Protocol

- HTTPS Mode
- FTP Mode
- Passive (Default)
- Active

Proxy Address Assignment

- Direct connection to the Internet (Default)
- Use Internet Explorer proxy settings
- Manual proxy settings

Proxy Address

HTTP:

SSL:

FTP:

Proxy Authentication

Name:

Password:

OK Cancel

Use Internet Explorer proxy settings

OR

PC Meter Connect™

Internet settings

HTTPS Transfer Encoding Method

- Non-Chunked (Default)
- Chunked

Protocol

- HTTPS Mode
- FTP Mode
- Passive (Default)
- Active

Proxy Address Assignment

- Direct connection to the Internet (Default)
- Use Internet Explorer proxy settings
- Manual proxy settings

Proxy Address

HTTP:

SSL:

FTP:

Proxy Authentication

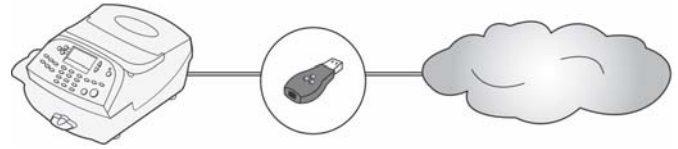
Name:

Password:

OK Cancel

Use "Manual proxy settings" (and "Proxy Authentication", if used)

Networking Details using LAN Adapter



If you have decided to connect your meter to the Pitney Bowes Data Center using the LAN adapter, review the FAQs below to obtain answers to the most commonly asked questions applicable to meter models DM125, , DM300c, DM400c, and DM475.

1. What are the network requirements for the meter using the LAN adapter?

- The System requires an Internet connection, accessed through a Wired LAN.
- The System supports 10/100 Ethernet transfer rates; Full Duplex.
- The System will initiate all communication.
- The System will initiate all communication via HTTP and Active Mode FTP.
- The System will communicate to external Web Services via HTTP using port 80.
- The System will communicate to PB data server via Active Mode FTP using outbound port 21.
- The System will use Port 53 for DNS lookup.

2. What type of FTP is used by the System “Active” or “Passive”?

The system will use FTP “Active” mode for all FTP communication.

- **Firewall on “Active” FTP - what ports should be opened on server and client side?**

On server port 20 for data and port 21 for commands must be opened. On the client, ports > 1023 must be opened for successful FTP connection and transfer of files.

3. What access needs to be opened for my Firewall?

If unrestricted outbound access is not allowed in a particular organization, then Network access to Pitney Bowes’ servers is accomplished by allowing access to the domains listed in the table below. To avoid potential future firewall issues, it is highly recommended domains are used instead of ip addresses, because ip addresses have a tendency to change.

URL	Domain or IP Address	Country	Protocol and Ports	Purpose
	165.87.13.129 (Primary) and 165.87.201.244 (Secondary)	[Australia ,Canada, Japan, USA]	Outbound UDP on Port 53	DNS will utilize User Datagram Protocol (UDP) to resolve domains.
http://distservp1.pb.com/dstproduct.asp	distservp1.pb.com	All Countries, except India	Outbound HTTP on Port 80	Meter to Distributor communication to obtain list of servers meter will establish communication with active session.
http://cometservp2.pitneybowes.com.au/t3cometserv04.asp http://cometservd1.pb.com/t3cometserv16.asp http://cometservp1.pitneybowes.jp/t3cometserv02.asp http://cometservp1.pb.com/t3cometserv03.asp Note: If you have required access, clicking this URL should provide the following response from within your default web browser: {00000000-0000-0000-0000-000000000000} 0	cometservp1.pitneybowes.com.au cometservd1.pb.com cometservp1.pitneybowes.jp cometservp1.pb.com	Australia Canada Japan USA	Outbound HTTP on Port 80 Note: “Chunked” Transfer Encoding must be allowed.	Meter to Comet Server communication to complete postal security device (PSD) audits, check your account balances, and to transfer funds from your PbP account to the PSD.

https://acctservp1.pb.com/acctservice/default.aspx	acctservp1.pb.com	USA and Canada	HTTPS on Port 443 or TLS	The URLs listed in this section are used to upload meter accounting data for Inview and Total Meter Reporting. Inview and Total Meter Reporting are optional services.
http://pbdslp1.pb.com/PrdUpdate.dll Note: If you have required access, clicking this URL should provide the following response from within your default browser: <?xml version="1.0" ?> - <FileUpdateResponse> <Msg>301</Msg> </FileUpdateResponse>	pbdslp1.pb.com	All Countries, except India	Outbound HTTP on Port 80	Meter to Download Services global load balancer to Application Server communication used to send meter's configuration and determine whether updates are available. Updates include postal tariff changes, graphics (Ads, inscriptions), feature changes, and meter firmware updates.
http://pbdslp1.pb.com/DLA/Service.svc	pbdslp1.pb.com	All Countries, except India	Outbound HTTP on Port 80	Meter to Download Services Application Server communication used to send meter's configuration and determine whether updates are available. Updates include postal tariff changes, graphics (Ads, inscriptions), feature changes, and meter firmware.
	dlsdlp1T.pb.com dlsdlp1z.pb.com dlsdlp1.pb.com dlsdlp1b.pb.com	All Countries, except India	Unrestricted Active FTP Note: Reference FAQ 2 for additional Port details.	Meter to Download Services load balancer used to download customer's CCD/Order files, postal tariff changes, graphics (Ads, inscriptions), feature changes, and meter firmware updates.

If IP Addresses **must** be used, Pitney Bowes recommends the firewall be set to allow unrestricted access to the full blocks of Pitney Bowes IP Addresses listed below.

IP Range	Comments
152.144.128.0 - 152.144.128.255	Applicable to Australia, Canada, Japan, USA
172.28.106.0 - 172.28.107.255	Applicable to Australia, Canada, Japan, USA
172.31.224.0 - 172.31.224.255	Applicable to Australia, Canada, Japan, USA
199.231.32.0 - 199.231.47.255	Applicable to Australia, Canada, Japan, USA
209.85.128.0 - 209.85.255.255	Applicable to Australia, Canada, Japan, USA

4. What type of communication does the meter use while connecting to the Pitney Bowes Data Center Servers?

The System uses (HTTP) on Port 80 and FTP on Port 21 for communications to Pitney Bowes Data Center Servers. Port 80 is used to communicate XML formatted messages requesting services.

5. Is the HTTP communication "Chunked" or "Non-Chunked"?

The System only supports "chunked" HTTP Transfer Encoding communication when connecting to Postage by Phone. Your network **must** allow this type of communication. The firewall/proxy and all components along the communication path need to allow empty client side chunking messages through on port 80. Our systems use HTTP 1.1 Chunked Transfer Encoding when we communicate with Postage by Phone. HTTP 1.1 Chunked Transfer Encoding allows HTTP messages to be broken up into several parts. Some network protection devices see this as an attack and block it. Chunked Transfer Encoding is a method in which only a portion (or chunk) of data is sent by the server in an HTTP/1.1 session. It is often used when a server knows that it will take a long time to complete a client's request, and so it sends only small chunks of data as the data is dynamically created.

6. Does the System use static and dynamic addressing?

Your System supports both dynamic (Table 1) and static (Table 2) IP addressing. The IP address is defaulted to automatic addressing from a DHCP Server. You can view and/or change the LAN IP settings using the meter menus described below:

Table 1: Network Uses Dynamic IP Addresses

DM125 and DM225 Models
1. Press the Options key
2. Press the Page Down key twice
3. Select Connect-Data Center
4. Select LAN Settings
5. Verify Get IP is set to Auto
6. Press the Home key to return to the Mail Run Screen

DM300c, DM400c and DM475 Models
1. Press the Menu key
2. Press the Page Down key twice
3. Select Data Center Options
4. Page Down and select Network Settings
5. Verify Get IP is set to Auto
6. Press the Home key to return to the Mail Run Screen

Table 2: Network Uses Static IP Addresses

DM125 and DM225 Models
1. Press the Options key
2. Press the Page Down key twice
3. Select Connect-Data Center
4. Select LAN Settings
5. Select Get IP
6. Select Manually
7. Select IP
8. Enter the IP value determined by your network administrator. Select Accept IP Addr to continue
9. Select Sub
10. Enter the Sub value determined by your network administrator. Select Accept Sub Addr to continue.
11. Select Gwy
12. Enter the Gwy value determined by your network administrator. Select Accept

DM300c, DM400c and DM475 Models
1. Press the Menu key
2. Press the Page Down key twice
3. Select Data Center Options
4. Page Down and select Network Settings
5. Select Get IP
6. Select Specify Address Manually
7. Select IP Addr
8. Enter the IP value determined by your network administrator. Select Accept to continue.
9. Select Subnet
10. Enter the Sub value determined by your network administrator. Select Accept to continue.
11. Select Gateway
12. Enter the Gateway value determined by your network administrator. Select

Gwy Addr to continue.

13. Press the **Home** key to return to the Mail Run Screen.

Accept to continue.

13. Press the **Home** key to return to the Mail Run Screen