DM Series Networking Technical Specification
For 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. A separate document is available for the PC Meter Connect Desktop Application upon request. 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.

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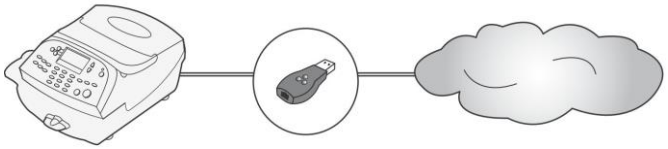
Networking Details using LAN Adapter



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 DM300/DM400/DM500/DM800i/DM900/DM1000

LAN Adaptor and Network Frequently Asked Questions (FAQs)

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.

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Note – Due to the secure nature of the transactional servers, they may not reply to ping or tracert requests.

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/t3cometserver_04.asp	cometservp2.pitneybowes.com.au	Australia	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.
http://pbdlsp1.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>	pbdlsp1.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://pbdlsp1.pb.com/DLA/Service.svc	pbdlsp1.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 on page 5 and 6:

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Table 1: Network Uses Dynamic IP Addresses

DM500/DM800i/DM900/ DM1000
1. Press the **Menu** key on the meter
2. Choose **Set Up**
3. Choose **Phone/Network Set Up**
4. Choose **More Options** (down arrow)
5. Choose **Network Settings**
6. Choose **Mailing System Network Settings**
7. Choose **Get IP Address**
8. Choose **Get IP Address Automatically**
9. Choose **Exit Set Up**

DM300/DM400
1. Press the **Menu** key on the meter
2. Choose **Data Center Options**
3. Choose **Network Settings**
4. Veirfy that **Get IP** is set to **Auto**
5. Press the **Enter** key
6. Press the **Home** key to return to the Mail Run Screen

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Table 2: Network Uses Static IP Addresses

DM500/DM800i/DM900/ DM1000
1. Press the **Menu** key on the meter
2. Choose **Set Up**
3. Choose **Phone/Network Set Up**
4. Choose **More Options** (down arrow)
5. Choose **Network Settings**
6. Choose **Mailing System Network Settings**
7. Choose **Get IP Address**
8. Choose **Specify and IP Address**
9. Choose **IP Address**, press the **Clear** key and then enter the value determined by your network administrator. Press the **Enter** key to accept
10. Choose **Subnet Mask**, press the **Clear** key and then enter the value determined by your network administrator. Press the **Enter** key to accept
11. Choose **Default Gateway**, press the **Clear** key and then enter the value determined by your network administrator. Press the **Enter** key to accept
12. Choose **Exit Set up**

DM300/DM400
1. Press the **Menu** key
2. Choose **Data Center Options**
3. Choose **Network Settings**
4. Choose **Get IP**
5. Choose **Specify Address Manually**
6. Choose **IP Addr**, press the **Clear** key and then enter the value determined by your network administrator. Press the **Enter** key to accept
7. Choose **Subnet**, press the **Clear** key, and then enter the value determined by your network administrator. Press the **Enter** key to accept
8. Choose **Gateway**, press the **Clear** key and then enter the value determined by your network administrator. Press the **Enter** key to accept
9. Press the **Enter** key to save your changes
10. Press the **Home** key to return to the Mail Run Screen

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Enabling Constant Connection

The meter comes with the LAN feature present, but this feature must be selected for use before it becomes active. Once Internet access has been enabled through the firewall by your IT representative, Constant Connection needs to be established by doing the following:

DM500/DM800i/DM900/ DM1000
1. Press the **Menu** key on the meter
2. Choose **Set Up**
3. Choose **Phone/Network Set Up**
4. Choose **Modem Type**
5. Choose **Use LAN**
6. Choose **Ok, Restart Now**

DM300/DM400
1. Press the **Menu** key
2. Choose **Data Center Options**
3. Choose **Network Settings**
4. Verify that **Get IP** is set to **'Auto'**
5. Press the **Down Arrow** and verify that the **MAC Addr** field is populated. This indicates the Mail Machine's NIC Card is working.
6. Press the **Enter** key and then the **Home** key
7. The LAN should be setup to run now.
8. Attempt a Balance Inquiry to confirm it works.