

PC Business Banking

Technical Requirements

For PC Business Banking Version 7.0

March 2007

Bank Smarter



Bank of New Zealand

Application Overview

PC Business Banking (PCBB) is Bank of New Zealand's banking platform for large business/corporate banking. PCBB is a thick-client application running a Microsoft SQL Express 2005 database (the database cannot be attached to any existing SQL Server 2000/2005 infrastructure), which communicates with the Bank via (a) a secure internet connection or, (b) a direct connection using a dial-up modem.

Application Configuration

PCBB has been designed and tested to run in one of three basic configurations:

- On a stand-alone workstation, hosting both the client application and the database application.
- The database application hosted on a central network server, with the client application installed on as many workstations as required.
- On a Citrix or Terminal server, hosting both the client application and the database application.

Hardware Requirements

In order for PCBB to operate effectively, each computer it is installed on must meet the following minimum requirements:

- IBM Compatible PC
- Pentium III (or equivalent) 1 GHz processor or higher (1.8 GHz recommended)
- 512 MB Ram (1 GB Ram recommended)
- CD-Rom or DVD-Rom drive
- SVGA Monitor with a resolution of 800x600 (1024x768 resolution recommended)
- 400 MB Free hard drive space (600 MB recommended)

Operating System Requirements

PCBB will run on any of the following operating systems (with specified Service Packs installed, where necessary):

- Windows 2000 Professional (Service Pack 4)
- Windows XP Family (Service Pack 2) - Home, Tablet, Media Centre or Professional edition
- Windows 2000 Server Family (Service Pack 4) – Small Business, Standard, Advanced or Datacenter edition
- Windows 2003 Server Family (Service Pack 1) – Small Business, Standard, Enterprise or Datacenter edition

Apple Mac is not directly supported; however PCBB will run in either of these configurations:

- On newer Macs with Intel processors, running Windows XP under the 'Bootcamp' option
- On older Macs with Power PC processors, running the Windows XP version of Microsoft Virtual PC

It is necessary to have the prerequisite operating system, including service packs, installed prior to the Banks arrival. To assist you in this process, please refer to the PC Business Banking Pre-Install CD provided.

Note - Linux and other operating systems are not supported

Prerequisite Software Requirements

The following software must be present on all computers PCBB is to be installed on:

- Microsoft Windows Installer 3.1 or higher
- Microsoft Data Access Components (MDAC) 2.8 Service Pack 1 or higher
- Microsoft .Net Framework 2.0 or higher
- Microsoft Visual J# Redistributable 2.0 or higher

If at all possible, please install the prerequisite software prior to the Banks arrival. To assist you in this process, please refer to the PC Business Banking Pre-Install CD provided. Alternatively, here are the links to each prerequisite software download on Microsoft's website:

Microsoft Windows Installer 3.1

<http://www.microsoft.com/downloads/details.aspx?displaylang=en&familyid=889482fc-5f56-4a38-b838-de776fd4138c>

Microsoft Data Access Components (MDAC) 2.8 SP1

<http://www.microsoft.com/downloads/details.aspx?FamilyID=78cac895-efc2-4f8e-a9e0-3a1afbd5922e&DisplayLang=en>

Microsoft .Net Framework 2.0

<http://www.microsoft.com/downloads/details.aspx?FamilyID=0856eacb-4362-4b0d-8edd-aab15c5e04f5&displaylang=en>

Microsoft Visual J# Redistributable 2.0

<http://www.microsoft.com/downloads/details.aspx?familyid=F72C74B3-ED0E-4AF8-AE63-2F0E42501BE1&displaylang=en>

Communication Requirements

PCBB has two methods of communication with the Bank:

- Internet – using either a Broadband or Dial-up connection
- Direct – using a Dial-up modem

If you wish to use the Internet option and your organisation has a proxy server, please ensure that:

- Proxy permissions allow access to the following IP addresses:
 - PCBB Wellington - 202.49.97.42
 - PCBB Auckland - 202.49.102.42
- Proxy permissions allow traffic on Port 443
- If your proxy permissions do not allow anonymous outbound traffic, user credentials can be entered and stored within PCBB

If you have a Proxy environment, you will need to add <https://pcbb-http.bnz.co.nz/> to the proxy server/software, and issue full access for in order that all PCBB Users are able communication with the Bank of New Zealand servers.

If you wish to use the Direct connection option, please ensure that:

- You have an analogue modem installed capable of 56kb/s
- An analogue telephone line is available near the analogue modem
- Microsoft Dial-up Networking is installed on the computer the modem is attached to

Application Updates

To ensure that PCBB is always operating with the latest enhancements, the PCBB client application uses a Microsoft product called *ClickOnce* to manage all updates. Every time a user launches PCBB, *ClickOnce* will check the PCBB version cached locally against the version on Bank of New Zealand's *ClickOnce* server. If a newer version is available, then depending on which deployment option your organisation has chosen, one of two dialogs will appear to the user:

- Deploy Option (the default) – A dialog with Install/Don't Install options appears. If the user clicks "Install", the update downloads and automatically installs itself. If an error occurs during the update, the client automatically rolls back to the previously installed version.
- Notify Option – A dialog stating an update is available with a hyperlink appears. The hyperlink takes you to the Bank's ClickOnce server where the updates can be manually downloaded, tested in a secure environment (if desired) and then deployed manually to each users computer.

Some key features of *ClickOnce* applications:

- They do not require administrative rights to install
- They are self contained applications, writing no files outside their own application directory
- The application installs in a hidden directory under each users profile
- They write no registry entries
- The *ClickOnce* mechanism guarantees that any application deployed by it cannot interfere with any other applications or data on the client PC. Bank of New Zealand is using *ClickOnce* only for updates to the PCBB client and the PCBB database file

Interface Files

The following payment file formats are unchanged;

- Direct Credits
- Direct Debits
- Payroll
- International Trade
- Credit Card Batch

The following Gifts statement file formats are unchanged;

- Domestic account format (used for reporting BNZ, ANZ, National Bank and Westpac domestic accounts)

The following Gifts statement file formats have changed;

- Foreign currency account format: Three new fields have been added to each transaction record
- National Australia Bank (NAB) accounts: Not previously available

For additional information regarding file formats, please refer to the following documents;

- PCBB Interface File Formats
- PCBB Supplementary Interface File Formats

Database Security Information

The encryption within the PCBB database files uses SQL Express 2005 built in encryption capability. This utilises the operating system (OS) encryption algorithms on the machine to which it is installed. Below is a table listing the encryption algorithm for each operating system PCBB v7 can be installed on:

Operating System	Encryption Algorithm
Windows 2000 Professional	DESX
Windows 2000 Server Family	DESX
Windows XP Family	AES 256
Windows 2003 Server Family	AES 256

The fields within the database that are encrypted are:

- Bank account numbers
- User passwords
- Monetary amounts

Application Security Information

The OpenSSL Interop assembly implements the application level encryption functions required throughout the PCBB application. Encryption functionality is provided via the OpenSSL crypto library, using a Blowfish CBC Cipher.

The data encrypted in the PCBB application is:

- Audit log entry details
- Instruction authorisation responses for both Racal/PSM and passwords
- Instruction contents after batching and authorisation

Communications Security Information

The communication layer between the PCBB Client and the Bank of New Zealand uses a two layer cryptography system:

Layer One – Mutually Authenticated SSL

PCBB Client	PCBB Server
SSL Certificate issued by PCBB Server during 'unlock' on confirmation of correct password (client has supplied Certificate Signing Request)	SSL certificate
Private key associated with SSL certificate	Private key associated with SSL certificate
PCBB CA certificate (embedded)	PCBB CA certificate
	Private key associated with SSL certificate (used to sign customer certificates)

Operating System	SSL Cipher Strength
Windows 2000 Professional	Triple DES 128 bit
Windows 2000 Server Family	Triple DES 128 bit
Windows XP Family	AES 256 bit
Windows 2003 Server Family	AES 256 bit

At the completion of authentication between the PCBB client and server, a TLSv1 session key is exchanged and a TLSv1 session begins. At this point Layer two commences.

Layer Two – PKI Cryptography

PCBB Client	PCBB Server
RSA public key	RSA public key
RSA private key corresponding to public key	RSA private key
Copy of Server RSA public key (updated whenever the server public key is rolled out)	Copy of Client(s) public keys(s)

Blowfish symmetric encryption is used with 256 bit cipher strength irrespective of operating system.

For each message sent between them, both the server and client will confirm the session validity and check message digests and digital signatures.