

Downloading BSB Files from AusPayNet via FTP, FTPS and SFTP

AusPayNet Information Technology

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About this Document

The aim of this document is to explain the procedure for retrieving the BSB files produced by the Australian Payments Network via FTP.

These files are updated on the first business day of each month however it is possible that they could be updated more than once in each calendar month.

This document contains details of the firewall changes which are necessary to support access to the BSB data and walkthroughs of the download procedures.

Change Management

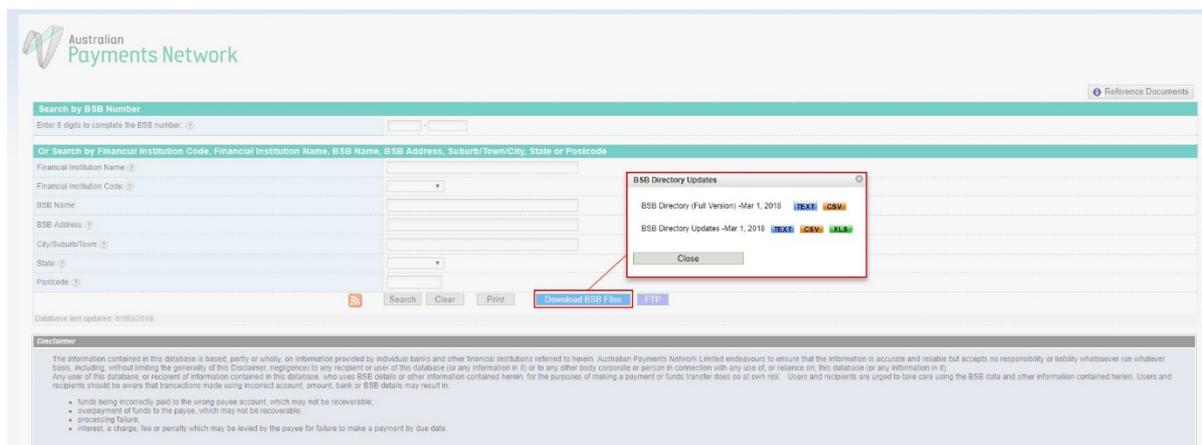
This document is updated whenever new information about the BSB system comes to light.

- Version 1.0 – Initial version of this document, following the migration of FTP services from bsb.apca.com.au to bsb.auspaynet.com.au.
- Version 1.1 – Added WS-FTP Example
- Version 1.2 – Added File Naming Conventions and Report formats section.
- Version 1.3 – Added details on FTPS
- Version 1.4 - Added Firewall Changes and Ports section, including global proxy addresses.
- Version 1.5 – Fixed Typographical errors and added table of contents. Added notes on Passive transfer command PASV.
- Version 1.6 May 2019 - Replaced the Windows Command Line FTP section with NcFTP which is supported on more platforms. Clarified that Windows FTP does not support Passive Mode. Also added MGET examples.
- Version 1.7 May 2019 – Added the Change Management Section and adjusted the port requirements for ports 1200-2000 to be unblocked on the firewall in order to use FTP. Updated information on passive vs active mode.
- Version 1.8 July 2019 Added SFTP capabilities and documentation.
- Version 1.9 July 2019 Changed bsb.hostedftp.com to ftp.auspaynet.com.au - note both of these urls are acceptable (as ftp.auspaynet.com.au is CNAME'd to bsb.hostedftp.com).
- Version 1.10 December 2020 Added the SSH Keys.

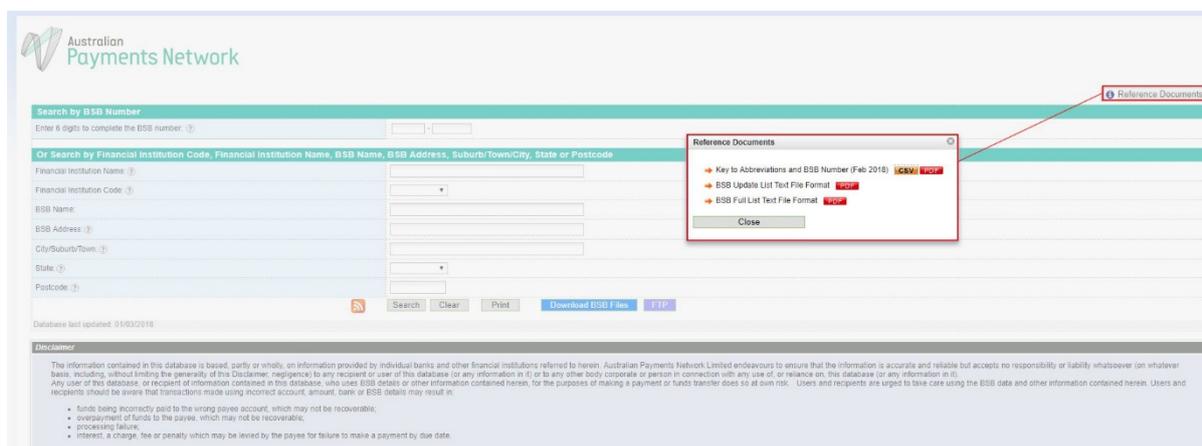
Direct Web Access

The BSB data can be searched and accessed online at <http://bsb.auspaynet.com.au>

There is a download button on that site which will open a dialog box providing access to the latest files; full directory and updates in text, csv and xls versions.



Additionally, the key to abbreviations and the file formats are available under reference documents in the top right-hand corner of the screen.



The FTP button on the BSB page will provide you with details about the FTP connection requirements, including information about the file naming conventions and a link to the web browser version of the FTP site;

The Web Browser FTP Site

The following link will take you to the web browser version of the FTP site. *Please note that this is not the address to use if you're attempting to set up an automated FTP procedure.*

<ftp://bsb.hostedftp.com/~auspaynetftp/BSB>

Response time on this URL is quite slow but it will allow you to browse current and archived BSB files on this site and download them as needed.

Please note that this is a web browser compatible site. You need to be using **bsb.hostedftp.com** for command line FTP.

Establishing an FTP Connection via Command Prompt

To establish an FTP connection via the command prompt, you will need to have FTP capability. This will usually mean that your organisation will need to permit FTP traffic through its firewall and that you will need command line FTP capability. Refer to the firewall section of this documentation for more information.

Important Notes about Command Line FTP

- You may need to use the QUOTE PASV command in your scripts to ensure that transfers are in passive mode.
- The Windows FTP client does not support passive mode (even though the command appears to respond). You will need to use a different FTP client – [NcFTP](https://www.ncftp.com/download/) is recommended as this client is free and works with Windows, Mac, Linux and FreeBSD. It can be downloaded from <https://www.ncftp.com/download/>

Accessing the BSB Facility

To access the BSB facility, you need to connect to `bsb.hostedftp.com`, provide the user name `anonymous` and any password, change into the `~auspaynetftp\bsb` folder and download your file(s). The NcFTP client doesn't prompt for user names and passwords but will try an anonymous connection first.

The following demonstration was created using Windows 10 with the boldfaced text being typed by the operator;

A Sample Command Line FTP Session using NcFTP

```
C:\Temp>ncftp
NcFTP 3.2.6 (Nov 15, 2016) by Mike Gleason (http://www.NcFTP.com/contact/).
ncftp> open ftp.auspaynet.com.au 21
Resolving bsb.hostedftp.com...
Connecting to 54.66.120.201...
Service ready for new user.
Logging in...
User logged in, proceed.
Logging in...
Logged in to bsb.hostedftp.com.
ncftp / > cd ~auspaynetftp
Directory changed to /~auspaynetftp
ncftp ~auspaynetftp > cd bsb
Directory changed to /~auspaynetftp/bsb
ncftp ~auspaynetftp/bsb > get "BSB Directory Update 02Apr19-01May19.csv"
BSB Directory Update 02Apr19-01May19.csv:          7.16 kB    6.13 kB/s
```

```
ncftp ~auspaynetftp/bsb > get "BSB Directory Update 02Apr19-01May19.txt"
BSB Directory Update 02Apr19-01May19.txt:                6.84 kB    6.40 kB/s
ncftp ~auspaynetftp/bsb > mget BSBDirectoryApr19*.*
BSBDirectoryApr19-277.csv:                                1.29 MB    1.01 MB/s
BSBDirectoryApr19-277.txt:                                1.62 MB    1.44 MB/s
ncftp ~auspaynetftp/bsb > bye
```

The files downloaded by the system should be found in the folder that the FTP client was invoked in. There are two options demonstrated in this script;

1. Downloading files individually by specifying their full name
`get "BSB Directory Update 02Apr19-01May19.csv"`
2. Downloading multiple files by specifying a wildcard
`mget BSBDirectoryApr19*.*`

You can also use the LS command to list the contents of the folder.

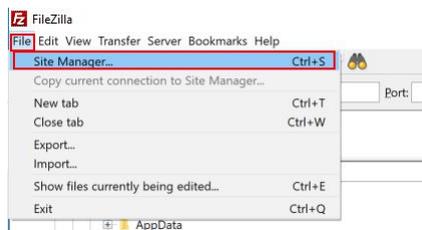
Establishing an FTP Connection via an Application (FileZilla)

If you're not restricted to a command line only, you can use a GUI interface. The recommended one is FileZilla; an Open Source FTP application that is available from <https://filezilla-project.org/>

There are Windows, MacOS and Linux versions of the software available.

Accessing the BSB Files via FileZilla

To access the BSB files via FileZilla, click on File, then Site Manager.



In the Site Manager dialog box, click on New Site to create a new site connection.

It's recommended that you name it AusPayNet BSB.

On the General tab, set the host name to;

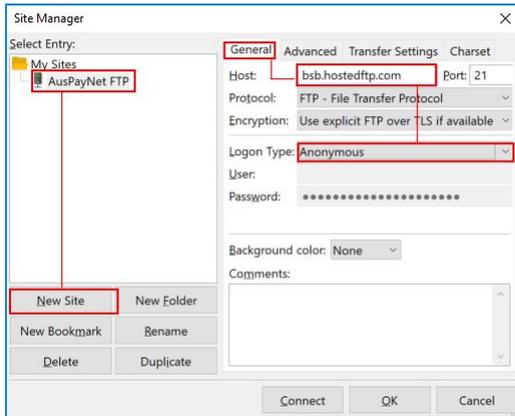
ftp.auspaynet.com.au

You shouldn't need to enter a port number but 21 should work if required.

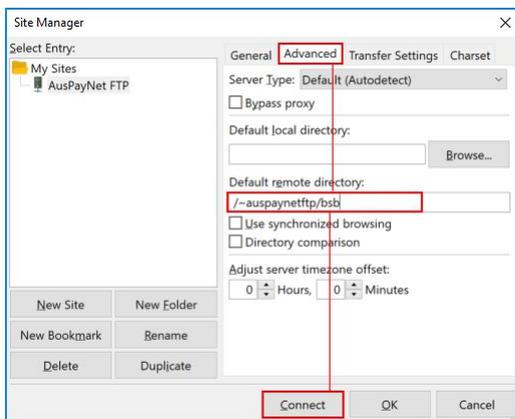
Set the logon type to anonymous.

The username and password will usually "grey out at this point".

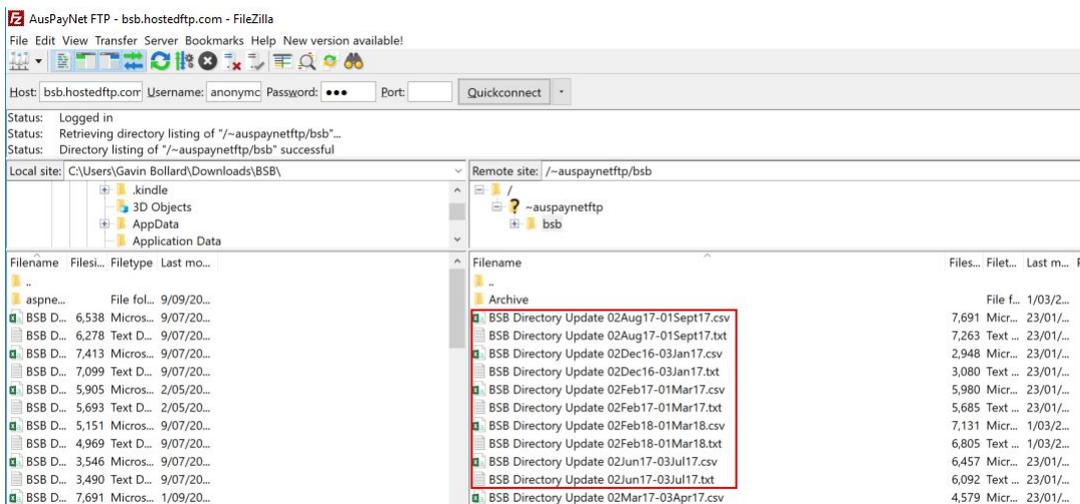
Click on the advanced tab for more options.



On the advanced tab,
 Set the default remote directory to;
 /~auspaynetftp/bsb
 Click the button marked Connect.



The right-hand panel of FileZilla should change to show the available files. You will then be able to download your files.



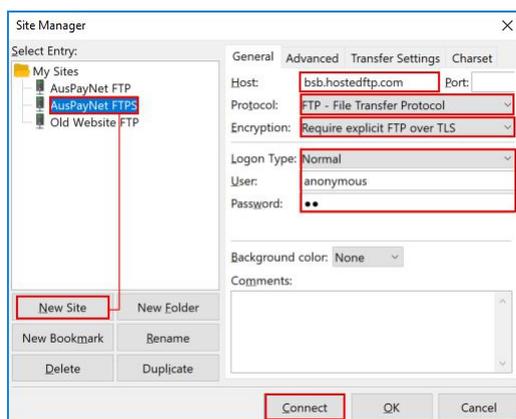
The Secure Option 1 (FTPS)

FTPS connections are also supported.

FTPS Connections in FileZilla

To set up a FTPS connection in FileZilla, you need to;

1. Access the FileZilla Site Manager
2. Add a New Site and Name it
3. Set the host to **ftp.auspaynet.com.au**
4. Set the Protocol to FTP – File Transfer Protocol
5. Set the Encryption to Require explicit FTP over TLS
6. Set the Logon type to Normal (not anonymous)
7. Set the User name to Anonymous
8. Set the Password to anything.
9. On the Advanced Tab, make sure that you set the default remote directory to /~auspaynetftp/bsb
10. On the Transfer settings tab, ensure that the transfer mode is set to Passive.
11. Click Connect.



Note that FTP and FTPS connections require a number of open ports (See Firewall changes and ports).

The Secure Option 2 SFTP

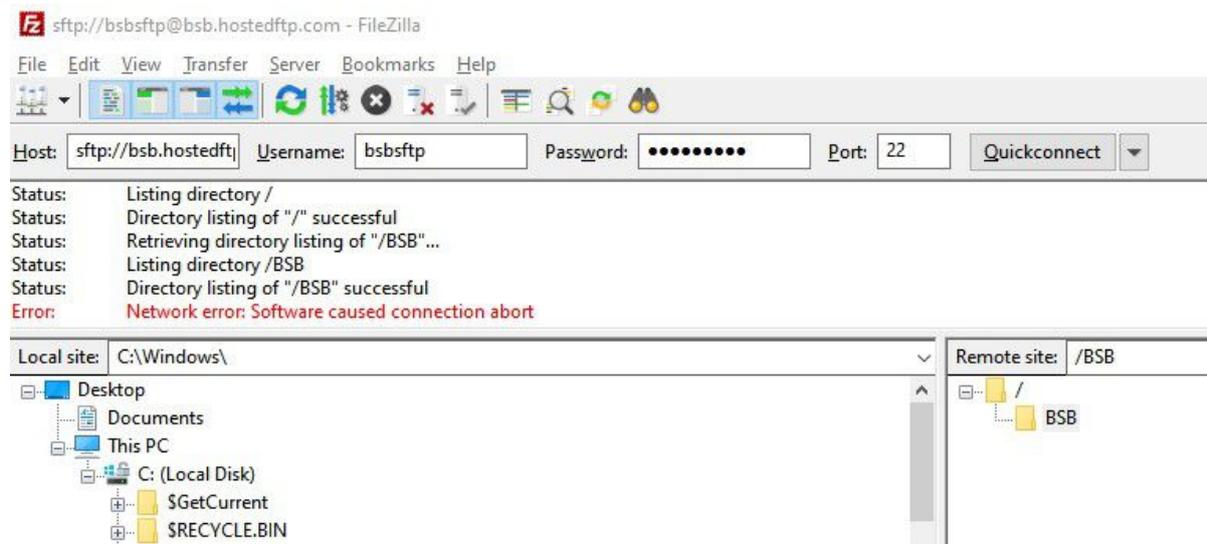
The FTP service now supports SFTP. Details are as follows;

Link: `sftp://ftp.auspaynet.com.au`

User Name: `bsbsftp`

Password: `auspaynet`

Port: `22`



Filezilla supports SFTP. To use this, simply include sftp:// in the host name and use the correct user name and password. The BSB files are in the BSB folder.

SSH Keys for SFTP

The SFTP keys for the BSB download can be found on the hostedftp website at this address:

<https://help.hostedftp.com/help/sftp-host-keys/>

In December 2020, they were as follows.

BASIC FORMAT:

RSA hostkey: bc9d86202d681a35bb9d5c41f4eb694c

DSA hostkey: ce2f1c9f870af0b33183995780aee9b6

HEX FORMAT:

DSA Hostkey : ce:2f:1c:9f:87:0a:f0:b3:31:83:99:57:80:ae:e9:b6

RSA Hostkey : bc:9d:86:20:2d:68:1a:35:bb:9d:5c:41:f4:eb:69:4c

Firewall Changes and Ports

Whether your FTP connection is passive or active, it will still use port 21 to control the connection and a high port (generally between 1200-2000) on the client to transfer data. For this reason, you'll need to have port 21 and ports 1200-2000 opened on your corporate firewall. Depending upon your firewall, you may find that passive connections are easier to establish.

To reduce risk, it's recommended that you restrict traffic on these ports to the IP addresses for the initiating computers (on your site) and the FTP Service locations in the table provided.

The built-in Windows FTP client does not support passive FTP in any version. If you need to use passive FTP on Windows, you will need to obtain a third party tool such as [FileZilla](#) or [WinSCP](#). FileZilla is command line only but WinSCP will also allow scripting.

Alternatively, the secure FTP service (SFTP) should need only port 22.

The FTP service is global, so the ports need to be open for the following addresses;

Site Location	Hostname	IP Address
Virginia	us1.hostedftp.com	75.101.155.12
Virginia	us2.hostedftp.com	204.236.238.164
California	us3.hostedftp.com	50.18.44.221
Oregon	us4.hostedftp.com	52.32.19.90
Ireland	ie1.hostedftp.com	54.228.213.93
Frankfurt	de1.hostedftp.com	52.58.208.39
Australia	au1.hostedftp.com	54.66.120.201
Korea	kr1.hostedftp.com	52.79.44.137
Japan	jp1.hostedftp.com	54.248.83.147
India	in1.hostedftp.com	52.66.83.164

File Naming Conventions

The Full BSB List

The file naming convention for the full list of BSB numbers is comprised of the previous month and report number. The month is represented as three characters. A CSV and a text file are provided. For example;

Previous Month

- BSBDirectoryJan18-262.csv
- BSBDirectoryJan18-262.txt

Following Month

- BSBDirectoryFeb18-263.csv
- BSBDirectoryFeb18-263.txt

The Update List

The file naming convention for the update list is the date of the day after the last report was generated. An example of this is below (based on data generated on 1 Feb 2018). A CSV file and a text file is provided.

- BSB Directory Update 02Feb18-01Mar18.csv
- BSB Directory Update 02Feb18-01Mar18.txt

Full List Report - File Formats

The full list of BSBs and a list of updates to BSBs is provided. Both files are provided as CSV or TEXT.

BSB Full List (CSV Version)

The CSV Version of the full list report is a comma delimited text file with quotation marks around each field. All BSB records except those which are payment flag of H *only* are included. BSB records which are closed and have a payment flag of blank are also included.

There are no header and footer records in the CSV file and all records are in BSB number order.

Each line of the CSV contains the following fields;

- BSB Number (as 000-000)
- Three Character Financial Institution Mnemonic
- BSB Name or Closed
- BSB Street
- BSB Suburb
- BSB State
- BSB Postcode
- BSB Payments Flags (P, PE, PEH, E, EH or blank if closed).

The payments flags refer to the clearing systems (frameworks) with P=Paper (APCS), E=Electronic (IAC) and H=High Value (HVCS).

Sample CSV Line (not real data)

"123-456","ABC","XYZ Company","109 Test Street","Sydney","NSW","2000","PEH"

BSB Full List (Text Version)

The text version of the full list report is a specially formatted text file with specific line spacing and a header and footer record.

Header Record

The first record is a header record. It is 111 characters long.

0	1	2	3	4	5	6	7	8	9	10	11
12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901											
HEADER RECORD Effective Date: 01 Mar 2018 File Created At: 01 Mar 2018 10:42:17 Report Number: 263											

- Characters 1-31: "HEADER RECORD Effective Date: "

- Characters 32-42: Effective Date of the report formatted as “dd/mmm/yyyy”
- Characters 43-64: “ File Created At: “
- Characters 65-84: System Date and Time formatted as “dd mmm yyyy HH:MM:SS”
- Characters 85-103: " Report Number: "
- Characters 104-106: Three Digit Report Number
- Characters 107-111: Trailing Spaces

Detail Records

Detail records are 111 characters long and are in BSB Number order.

0	1	2	3	4	5	6	7	8	9	10	11		
12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901													
123-456ABCXYZ Company				109 Test Street				Sydney		NSW2000PEH			

- Characters 1-7: BSB Number formatted as 000-000
- Characters 8-10: Three Character Financial Institution Mnemonic
- Characters 11-45: BSB Name or Closed with trailing space padding
- Characters 46-80: BSB Street with trailing space padding
- Characters 81-100: BSB Suburb with trailing space padding
- Characters 101-103: BSB State with trailing space if needed. (SA. WA. NT)
- Characters 104-107: BSB Postcode
- Characters 108-111: BSB Payments Flags (P, PE, PEH, E, EH or blank if closed) with trailing spaces.

Footer Record

Footer records are 77-112 characters long.

0	1	2	3	4	5	6	7	8	9	10	11
12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901											
TRAILER RECORD Total number of records (except header and trailer): 14,864											

- Characters 1-71: “TRAILER RECORD Total number of records (except header and trailer): “
- Characters 72-112: Record Total including thousands separator 00,000 with optional trailing spaces.

BSB Directory Update Reports – File Formats

The BSB Directory Update Report is provided in three file formats; Text, CSV and XLS on the BSB site and only Text and CSV via FTP download.

BSB Directory Update Report (CSV Version)

The CSV Version of the directory update report is a comma delimited text file with quotation marks around selected fields only.

There are no header and footer records in the CSV file and all records are in BSB number order.

Each line of the CSV contains the following fields;

- Change Type (ADD, CHG or DEL) – Unquoted.
- Three Character Financial Institution Mnemonic – Unquoted
- BSB Number (as 000-000) – Unquoted
- BSB Name or “Merged” – In Quotes
- BSB Street or if merged, “Refer to BSB 000-000” – In Quotes
- BSB Suburb – In Quotes
- BSB State – Unquoted
- BSB Postcode – Unquoted
- BSB Payments Flags (P, PE, PEH, E, EH or blank if closed) – Unquoted

Sample Records would appear as below; (not real data)

```
ADD,ABC,123-321,"ABC Bank Australia","200-250 Finance Street","Sydney",NSW,2000,PEH
CHG,BNK,123-456,"Merged","Refer to BSB 123-789","Sydney",NSW,2000,PEH
CHG,BNK,123-789,"BNK Finances","59 Finance Street","Sydney",NSW,2000,EH
DEL,ABC,321-123,"ABC Bank Australia","200-250 Finance Street","Sydney ",NSW,2000,PEH
```

BSB Directory Update Report (Text Version)

The text version of the BSB Update report is a specially formatted text file with specific line spacing in the header record, column titles and tab delimiters in the detail records. There is no footer record.

Header Record

The first record is a header record. It is 114-115 characters long.

0	1	2	3	4	5	6	7	8	9	10	11
1234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234											
Update Report No. 263 for BSB Directory, effective from 1/03/2018 (all changes between 02/02/2018 and 01/03/2018) .											

- Characters 1-18: “Update Report No. ”
- Characters 19-21: Three digit report number 000
- Characters 22-56: for BSB Directory, effective from “
- Characters 57-65/66: Effective Date formatted as “d/mm/yyyy” (no leading zero on day).
- Characters 66/67-87/88: " (all changes between "
- Characters 88/89-97/98: Starting Date formatted as “dd/mm/yyyyy”
- Characters 98/99-102/103: “ and “
- Characters 103/104-112/113: Ending Date formatted as “dd/mm/yyyyy”
- Characters 113/114-114/115: “).”

Column Titles

The column titles record consists of the following, separated by tabs.

- Ind.
- Mnemonic
- BSB
- BSB Name

- BSB Address
- CityTown/Suburb
- State
- Postc.
- P/T

Detail Records

Detail records are up to 115 characters long and are in BSB Number order.

No data is in quotes.

- Ind. – Change Indicator Three Characters, either ADD, CHG or DEL
- Mnemonic - Three Character Financial Institution Mnemonic
- BSB – BSB Number formatted as 000-000 (7 characters)
- BSB Name – The BSB Name (or Merged on a CHG record, if the record has been merged) – Up to 35 Characters.
- BSB Address – The BSB Address (or Refer to BSB 000-000 if the record has been merged) – Up to 35 Characters.
- CityTown/Suburb – Suburb - Up to 20 Characters.
- State – a two or three letter state code. – Up to 3 Characters
- Postc. – A four digit postcode
- P/T – Clearing system designation; one of the following; PEH, P, PE, E, EH or blank. – Up to 3 characters.

Key to Abbreviations and BSB Numbers

The BSB mnemonics should match the Financial Institutions listed in the Key to Abbreviations and BSB numbers document. This document is available from the Reference Documents section of the BSB site as well as from the FTP facility.

It is provided in PDF and CSV formats and is updated monthly with the BSB numbers.

Further Information

For further information on the BSB system, please contact AusPayNet on operations@auspaynet.com.au