

BiblioTECH Library System

Version 8

Installation Guide

Note: This guide is being continually updated – the latest version is available via our web site

Installation – Important Information.....	5
Server Installation.....	7
Firewall Configuration.....	11
Transferring Information from a Previous Version of BiblioTECH.....	12
Extract data from the BiblioTECH Version 7.....	12
Transfer of data to the BiblioTECH Version 8 Server.....	13
Import the data into BiblioTECH Version 8.....	13
Setting up a Client Workstation.....	15
Installing other Client modules.....	16
Web Search.....	17
Updating BiblioTECH v8.....	18
Updating a BiblioTECH Server.....	18
Updating a Client.....	18
Uninstalling BibliTECH v8.....	19
Running the Web Engine on another Server.....	20
Web Search from another Application.....	20

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BiblioTECH Core Software

The *BiblioTECH Core Software* is that part of the BiblioTECH package which provides the core functionality of the BiblioTECH System. The BiblioTECH software license covers the use of this core software.

BiblioTECH Additional Software

The *BiblioTECH Additional Software* is that part of the BiblioTECH package which provides additional functionality to the BiblioTECH System. This software is not covered by the core license. The license to operate this additional software is provided via a BiblioTECH Support Agreement.

Additional Software

ClickView Importer sub-system

Cover Images sub-system

Site

A *site* is a geographically discrete location. Two locations are deemed as separate sites if they are located on separate land titles.

BiblioTECH Server

A computer where the BiblioTECH Server software is installed and operating.

License

The BiblioTECH licence authorises the licensee to access *one BiblioTECH Server* and to modify the data using any number of workstations *from one site*. A BiblioTECH licence is required for each site from which the Library data is modified.

Searching the Library via the Standard or Web Search does not modify the Library data so this can be done from anywhere.

A single copy may be made of this software solely for backup or archival purposes. Any use of this software in violation of the above is not licensed.

BiblioTECH is a client-server application designed for the Microsoft Windows operating system using TCP/IP as the communication transport.

The BiblioTECH Server

A BiblioTECH Server consists of five core services

- Database Server
(manages library data)
- Communications Server
(manages client communications and provides the XML Search facility)
- Web Server
(provides the engine for browser based searching)
- 'SIP2' Server
(enables automated equipment to communicate with the BiblioTECH server)
- 'SMTP' Email Gateway
(provides the engine to facilitate outgoing email messaging)

Additional "Add-On" services can be installed on the BiblioTECH Server when their facilities are required at a site. These "Add-Ons" provide specific functionality

- External Search Engines
(expand the BiblioTECH server 'search' facilities to provide federated searching of external datasets – either data file or API based)
Current systems supported ...
 - “ClickView” file
 - “DVC” file
 - “WebLinks” file & API
- Loans Exporter
(provide a daily export of loans for use by other systems)

The BiblioTECH Client

A BiblioTECH Client consists of a series of modules. These modules interact with the server services running on the BiblioTECH server TCP/IP based communications.

The BiblioTECH Menu Manager ensures that the client modules are maintained at the same version as those installed on the server. *(Updating the server will result in the automatic update of the installed clients)*

The primary Client modules have been designed so that each can be used to manage one aspect of the BiblioTECH System.

- **Menu Manager**
 - Presentation of an icon based menu *(only those modules actually installed will be displayed)*
 - Ensures that other Client modules are updated when newer versions have been installed on the server
- **Patron Manager**
Used to maintain the list of potential borrowers
- **Resource Manager**
Used to maintain details for the various resources held by the library
- **Search**
Primary searching tool
- **Circulation Manager**
Manages loans, returns, reservations and stocktake
- **Report Manager**
Provides summary and detail reports on the operations and status of the library system
- **System Utilities**
Used to adjust the various system-wide settings and to manage system Backups/Restores

NB The BiblioTECH Client can be run on the same computer as the BiblioTECH Server. In this case, the Client operates in exactly the same way as when it is operated from another computer. (Exception : When running locally, the Client uses the IP loopback address 127.0.0.1 rather than the server's actual IP address)

Installation – Important Information

Supported Operating Systems

The BiblioTECH server software consists of a series of Windows 32-bit services. It has been designed so that it will operate on both 32-bit and 64-bit Windows Operating System based computers. It is designed for and tested on *Microsoft Windows 7/8/8.1* and *Windows Server 2008/2008r2/2012/2012r2*.

*While the software **may** work on Windows XP and Windows Server 2003, there may be incompatibilities. Microsoft have discontinued support for these older operating systems and as BiblioTECH is designed for the more recent operating systems, there is a distinct possibility that BiblioTECH could rely on features not available in those old operating systems .*

‘Virtualised’ computers

The BiblioTECH server software was designed to operate on a separate, physical host, but can also successfully operate on a variety of virtualised platforms.

Advice provided in this document addressing computer resources and configurations is provided based on the assumption that the system will be running on a separate, physical computer.

If you are installing onto a virtualised computer, you must also consider the impact of other virtualised computers running on the same host, particularly in relation to shared resources (hard disk, network adaptors, memory, etc)

Server Login Account

Installation

As the server installer must create folders, assign access permissions to these and manage system services, it can only be performed when run using an Computer Administrative account.

Operational

The BiblioTECH services run under the “System” account. As such they have sufficient access to the local computer. However, whie they are able to implmenet pure TCP/IP services, they cannot access Windows-based network based resources.

Client Login Account

Initial Installation

As the initial Client installation must create folders, assign access permissions to these, and copy files into those folder, it needs to be performed under an Administrative account.

Operational

Once operational, clients do not need any specialised permissions (other than those established when initially installed). This includes both normal 'library' operations, the auto-update process and the addition of other modules.

Folders Used and Security Permissions

Throughout these notes, the terms {Program Files} and {CommonData} are used.

These refer to standard Windows “system” folders. The actual location of these folders depends on the version of Windows installed on the computer and any ‘policies’ which have been established.

BiblioTECH identifies these folder locations via the Windows API.

The default locations of these folders is as follows

{Program Files} = C:\Program Files
{CommonData} = C:\ProgramData

NB Some folders may be ‘hidden’ – change Explorer’s settings to enable you to view hidden folders/files

For each of these two folders, a BiblioTECH structure is created and the local computer “users” group is assigned permissions to read, write, create, append and delete files.

Windows Registry

BiblioTECH does not utilise the Windows Registry – it only uses files held within the two BiblioTECH folders (located under {CommonData} and {Program Files})

BiblioTECH and Firewall/Routing Rules

BiblioTECH clients communicate with the BiblioTECH server across a number of ‘ports’.

These are TCP ports	16000	- database connections
	16001	- communications (main server port)
	16002	- file transfers
	6001	- SIP2 interface
	8181	- WWW engine

The BiblioTECH server also communicates with any Add-On services using further ports (16003-) As these are all local to the server, Firewall rules are generally not required.

You need to ensure that -

- the firewall on the BiblioTECH server computer must allow incoming connections on these ports
- the firewall on each BiblioTECH client computer must allow outgoing connections on these ports
- network routing and security systems will allow the above communications

BiblioTECH and Anti-Virus Software

BiblioTECH, like all other database based systems, changes its data files frequently. If anti-virus software is set to “active/live” checking of changed files, the performance of BiblioTECH can be severely affected.

Therefore, it is recommended that the BiblioTECH base data folder (*see above*) and its contents are excluded from “active/live” anti-virus scanning.

Manual or scheduled scans can still be undertaken, as required.

Server Installation

This section details the requirements for and procedure needed to be followed to facilitate the installation of a BiblioTECH Server.

NB The BiblioTECH v8 Server will install as a new system or update an existing v8 system. It will not upgrade a previous version of BiblioTECH. If you are upgrading from a previous version of BiblioTECH (either on the same server or to a different server) please refer to the "Transferring Information from a Previous Version of BiblioTECH" section below.

Installation Prerequisites

- The BiblioTECH Server SETUP executable (download from www.bibliotech.com.au)
 - A "current" BiblioTECH License Key (contact admin@bibliotech.com.au)
- A computer
- running one of Microsoft *Windows 7/8/8.1 or Windows 2008/2012 Server* (either 32-bit or 64 bit and server can be 'R2')
 - with a **multiple** CPUs (minimum Intel I5 or equivalent)
 - with **4GB** of RAM
 - approximately **10 Gb** of Disk Space for BiblioTECH
 - The network interfaces to be used by client computers must have **static** IP addresses
- Any Firewalls (*installed on the server, the clients or the network*) configured to allow clients to communicate with the server (*refer Firewall Configuration*)
 - A Windows "Administrative" UserID & password
 - The Server's Operating System ...
 - updated with the latest Windows updates, etc.
 - system clock adjusted to the correct TimeZone and to the correct Date/Time
 - power settings set to ensure the server will not enter *sleep* or *hibernation* modes.

NB The BiblioTECH Server services will 'listen' for requests on all of the server's active network interfaces. However, when the server services are 'talking' to each other, they will use initially the first listed network interface. To ensure that performance is not adversely impacted, ensure that you disable any slow interfaces (eg Bluetooth/infrared) that are not being used. (These types of interfaces tend to be the first ones activated by the operating system and, therefore, could be used by BiblioTECH)

Installation Overview

The SETUP application will ...

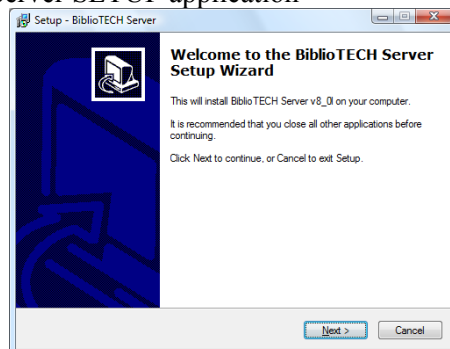
- Create the two folder structures and apply appropriate permissions
 - {Program Files} \BiblioTECH\V8\
 - {CommonData} \BiblioTECH\V8\
- Install the BiblioTECH core server “services”.
The executable files will be copied to the {Program Files}\SERVER folder
- Install the client executables and create shortcuts links.
The executable files will be copied to the {Program Files}\CLIENT folder
- The {CommonData} structure will be populated with the Data files
The ‘master’ copy of client files is stored {Program Files}\SERVER\MASTER folder
If any database files are not found, the server will auto-create them.

The **same** installer is used to initially setup a **new** BiblioTECH server and to **update** an existing BiblioTECH v8 server. In the latter case, the installer will only update executable files and replace ‘system’ files. Any existing database or ‘local’ configuration information will not be changed other than to add in any new fields, as required.

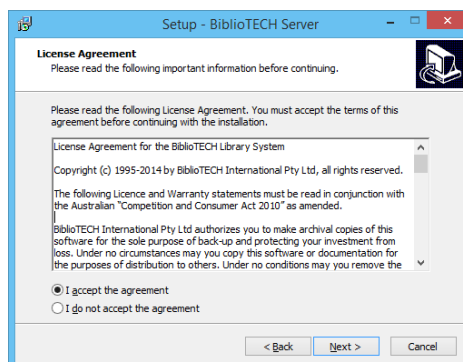
Installing the Server

NB The default password for a new BiblioTECH system is **INDIG0** (last character is a zero)

- Login to Windows using an Administrative UserID & password.
- Ensure that on the server
 - Each network interface has a static IP address
 - Regional Settings are set appropriately
 - the system clock is set appropriately
- Copy the BiblioTECH Server SETUP application to the server
- Start the BiblioTECH Server SETUP application

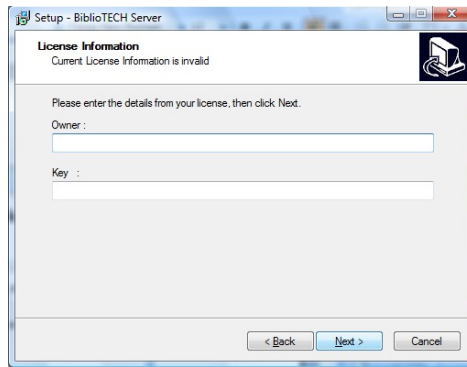


Select Next ...

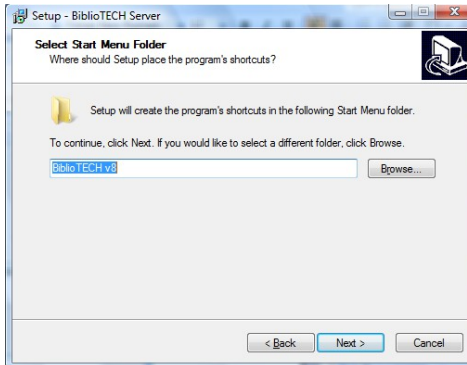


Accept the licence Agreement then select Next ...

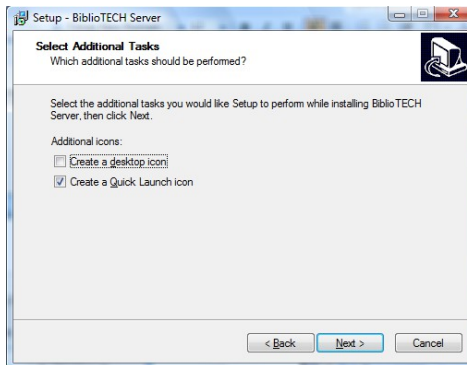
If there is no Licence installed (ie a new installation) or the existing licence does not allow updating, you will be prompted to enter your licence information.



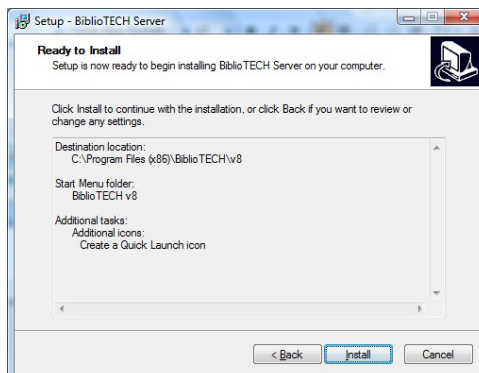
Enter your License Key information and Select Next ...



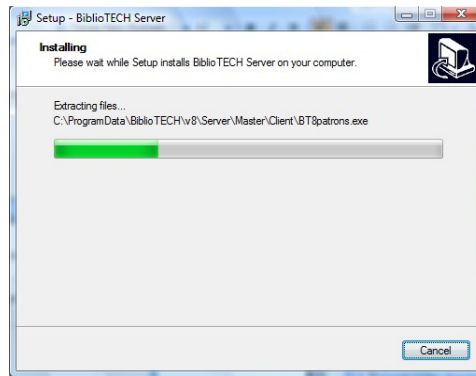
Select Next ...



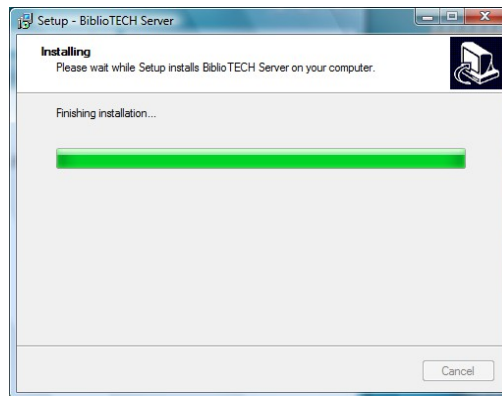
Select Next ...



Select Install ...

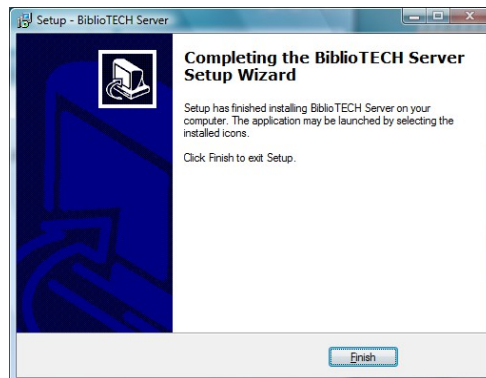


The files will be copied onto the server ...



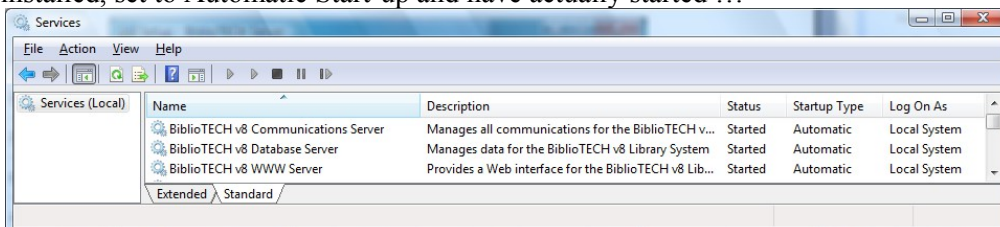
The “services” will be installed and started ...

NB This step could take a few minutes – particularly if upgrading across a number of versions



Select Finish ...

- Start the Windows Service Manager and verify that the four BiblioTECH services are installed, set to Automatic Start-up and have actually started ...



- Establish Access Security ...
For normal operations, BiblioTECH needs to read, write, modify and delete files and folders within the {CommonData}\BiblioTECH\V8\ ... and the {Program Files}\BiblioTECH\V8\ Client\.... folder structures.

The server installer will establish the required security settings on these two folder structures.
(The installer will grant the local computer Users group the necessary security rights)

- Install the Client modules on the Server
These are installed automatically

Firewall Configuration

*This section details the requirements for and procedure needed to allow BiblioTECH v8 clients to be able to communicate with a BiblioTECH Server **if a Firewall is installed.***

Each of the BiblioTECH services implements a TCP server which “listens” on a specific “port”

The default port numbers are ...

Service	Port
Database Server	16000
XML Search Server	16001
Communications Server	16002
SIP2 Interface	6001
Web Server	8181

These port numbers can be adjusted to other values if required.

- The Web Server Port number can be adjusted via the BiblioTECH Web Server Manager utility.
- *Please contact BiblioTECH Support before adjusting the port numbers for the Database, XML or Communications servers.*

Firewalls are specifically designed to block undesired network communications. When a Firewall is in use, it must have specific rules established to allow “BiblioTECH” network traffic.

If you have any firewall in place, your local Network administrator will need to ensure the appropriate rules have been established.

Transferring Information from a Previous Version of BiblioTECH

This section details the requirements for and procedure needed to transfer the Library data from previous versions of BiblioTECH into a new BiblioTECH v8 system.

*NB This process does NOT transfer Reservations
Using the previous version of BiblioTECH, print a list of current Reservations for review and entry into BiblioTECH V8.*

Transfer Overview

To allow BiblioTECH v8 to be installed on a separate computer from the one running the prior version, the installation of BiblioTECH v8 does not include an automatic upgrade option.

The transfer of the data involves three steps.

1. Extraction of data from the previous system
2. Transfer of the extracted information to the BiblioTECH V8 server
3. Import of the transferred data into BiblioTECH V8 System

Extract data from the BiblioTECH Version 7

Note If you are using an older version of BiblioTECH (eg, v5 or v6), contact BiblioTECH support for assistance.

Before extracting the data, print out a list of the current Reservations (these are NOT transferred)

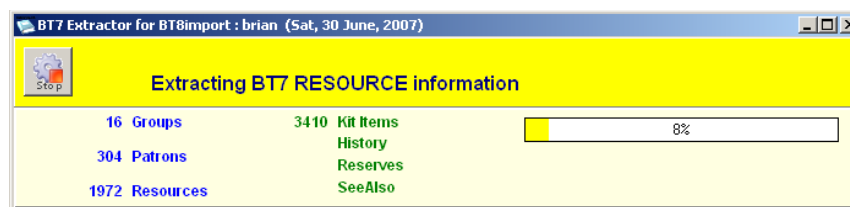
Close all BiblioTECH clients – there should be no further updates made on the previous system

- On the BiblioTECH V8 server, locate the {CommonData}\BiblioTECH\8\Server\MasterTools folder
NB Some folders may be 'hidden' – change Explorer's settings to enable you to view hidden folders/files
- From this folder, copy the "Extractor" utility BT7extract.exe to the BTv7 server
- On the BTv7 server, start this application and login to BiblioTECH.



When you select "Start" button, the extraction process will commence ...

(The time taken will depend on the capabilities of the computer and the number of patrons/resources)



When finished, the extracted information will be stored in a single file BT_ExtractedData.btx which will be saved into the same folder as the Extractor utility

Close the Extractor utility.

*NB At this point, you should shutdown the BTv7 server to ensure that no further updates are made.
Using Windows Service Manager, locate the BiblioTECH service, **Stop** it and change its **Startup Type** to **DISABLED**.*

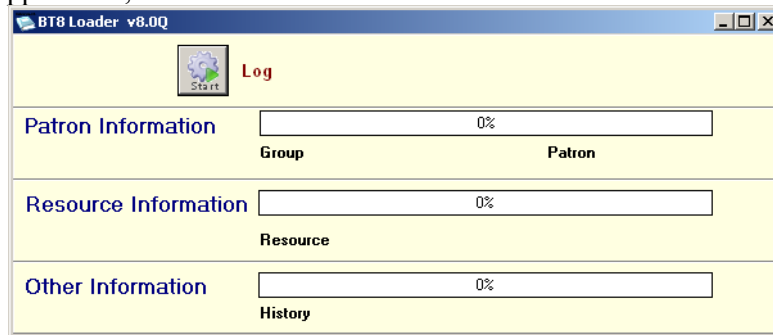
Transfer of data to the BiblioTECH Version 8 Server

- Copy the file BT_ExtractedData.btx to a folder on the new BiblioTECH v8 server
(via network, USB memory stick, etc.)

For performance reasons, it is recommended to perform the import using the file stored on a BT8 server's local hard disk. Importing from a file from a USB stick or across the network can slow down the import considerably.

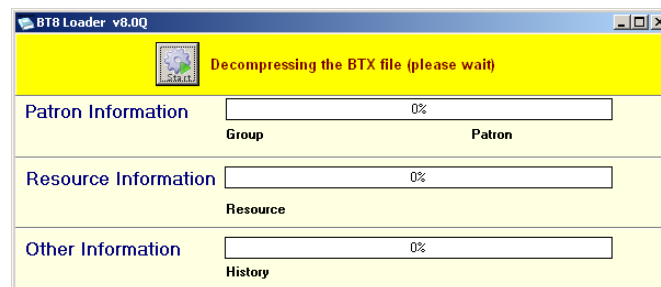
Import the data into BiblioTECH Version 8

- On the BiblioTECH V8 Server, locate the {CommonData}\BiblioTECHv8\Server\Master\Client folder
NB Some folders may be 'hidden' – change Explorer's settings to enable you to view hidden folders/files
- Start the application, BT8loader.exe

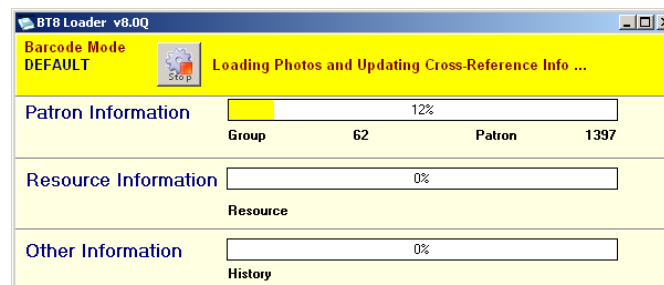


Select the “Start” button ...

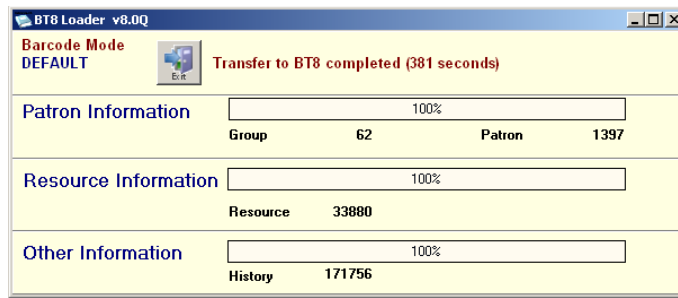
You will be asked to locate the BT_ExtractedData.btx file. Then the loader will decompress the BTX file and extract the library information from the file and begin the import into the BiblioTECH V8 system.



NB In addition to the library data, the BTX file will include other information (eg barcode parameters). A small number of libraries require specialised Barcode handling, therefore in most cases, the Barcode Mode will be DEFAULT. If unsure contact BiblioTECH Support.



NB As a rule-of-thumb, (on the same computer) the import will take about 4 times longer than the extraction.



When complete, close the application by selecting the Exit button ...

- To force a complete rebuild of all indexes, restart the BiblioTECH v8 Server services

Setting up a Client Workstation

This section details the requirements for and procedure needed to setup and configure a BiblioTECH v8 Client workstation.

Overview

*NB The Client installer will not install the Client modules on the BiblioTECH server
On the server, Client modules are automatically installed during the server installation*

The Client Installer will install a “base” client with just the BiblioTECH Search module.
(refer below if you need to install other client modules).

Part of the install set is a configuration file. This tells the Client Installer the IP address and Port used by the BiblioTECH server. These are needed by the client to communicate with the server.

NB If the server IP or Port settings on the server are changed, a fresh Client Install Set will need to be generated and the Clients reinstalled)

Client Installation Prerequisites

- The BiblioTECH Workstation Install Set
(see below re: Generating the Install Set)

- **If only running BT8 Search**, then a computer
 - running one of Microsoft *Windows 7/8/8.1/10* (either 32-bit or 64 bit and server can be 'R2')
 - with a **multiple** CPUs (minimum Intel I3 or equivalent)
 - with 1 **GB** of RAM
 - approximately ½ Gb of Disk Space
 - an operating network TCP/IP connection to the BiblioTECH server

- **If running more than just BT8 Search**, then a computer
 - running one of Microsoft *Windows 7/8/8.1/10* (either 32-bit or 64 bit and server can be 'R2')
 - with a **multiple** CPUs (minimum Intel I5 or equivalent)
 - with 2 **GB** of RAM
(if other applications will be running, then more RAM is recommended)
 - approximately 1 Gb of Disk Space
 - an operating network TCP/IP connection to the BiblioTECH server
 - if the Reports module is to be installed, then Microsoft Word will also need to be installed

- Any Firewalls installed on the server, the clients or the network configured to allow clients to communicate with the server *(refer section)*

- A Windows “Administrative Level” UserID & password

Generating the Client Installation Set

The installation set consists of two files, a SETUP application and a configuration file.

On the BiblioTECH v8 server, launch the BiblioTECH client and start the Utilities module.

Under the Global TAB, select the Installation Sets TAB.

Select the Workstation Install Set button.

When asked, select the desired location for the files.

(This location could be on a diskette, a USB Flash drive or a network location accessible by the client)

Installation the Client on a Workstation

Note : This will only install a base "Search Only" client, refer below for procedure to install other client modules.

On the Client computer, start BiblioTECH Client SETUP executable

This will

- create the folders to be used by the Client modules
- copy files into those folders
- establish Access Security ...

Under normal operations, the BiblioTECH Client modules need to read, write, delete and modify files within the {CommonData}\BiblioTECH\V8\ ... and the {Program Files}\BiblioTECH\V8\ Client\.... structures.

The installer will establish these for you by setting permissions for the local "Users" group.

Installing other Client modules

Every time the Launcher is started, it will update the BiblioTECH Menu application and start it.

As the Menu starts (but before displaying the menu panel), it will ensure the BiblioTECH Search module is installed and all installed client modules are up-to-date.

If BiblioTECH Search module is the only installed module, the menu panel will not be displayed and the Search module will start.

To install other modules, you need to force the menu panel to show.

- Minimise all applications
- On the desktop, locate the BiblioTECH client icon.
- Select it by clicking on it once
- Press and hold the **ctrl** down
- Press and release the **Enter** key (keep the **ctrl** key pressed until the menu panel shows)

To install/uninstall modules, select Install option under the File menu.

Web Search

The BiblioTECH System incorporates a Web Server which enables the searching of the library system using a web browser.

The URL to access this service is `http://bt_svr_ip:8181`

DNS and IP Address

For client browsers to be able to access the BiblioTECH Web server, browsers must be able to 'reach' the server, either via the server's DNS name or directly via the server's IP address.

Port Usage

As the server operates on port 8181, client browsers must be enabled to access the server on that port.

Javascript

The BiblioTECH web server utilises pure HTML5 with CSS3. Therefore, any browser compatible with those standards will work with BiblioTECH.

Updating BiblioTECH v8

BiblioTECH is undergoing continual development with new builds being released regularly. All updates and new versions are included within the BiblioTECH Support Contract.

To upgrade a BiblioTECH system

- Ensure that you have a license that includes Support and that the Support has not expired
(The BiblioTECH installer checks and will abort if Support has expired)
- Download the latest Server setup via www.bibliotech.com.au
(also download any server “add-ons” that the site requires)

Updating a BiblioTECH Server

- Stop all BiblioTECH clients *(on all computers)*
- Login to the server computer using an Administrative account
- Using Windows Service Manager, stop ALL BiblioTECH services
- Wait until all of the BiblioTECH services have stopped
- Copy the setup application to the BiblioTECH server
- Run the server setup – accept all default responses
(During an upgrade, the installer will check for an existing license key with ‘current’ support – if not found, the installer will ask for a new key to be entered)
- Once the BiblioTECH Server services are running successfully, if you have any other add-on server modules installed, run the setups for those

NB As one of its last steps, the installer will auto-start the BiblioTECH Core Server services.

Updating a Client

You do NOT need to manually update BiblioTECH client installations.

Each BiblioTECH client will automatically update itself to the same version as the server.

NB Sub-modules (eg Spine Label Printer) are checked (and updated if necessary) every time they are activated. Therefore, after a system update, the first time a sub-module is started, there will be a small delay while it is updated.

Uninstalling BibliTECH v8

The BibliTECH Version 8 Server, Add-On services and the Client include an Uninstall option

Uninstalling a Server

- Login to the computer using an Administrative account
- Using BibliTECH Server Manager, stop the BibliTECH services.
- Uninstall any server “add-ons” (eg the *BibliTECH ClickView Importer*)
- Uninstall the BibliTECH Server.
- Perform a “Tidy Up”

Uninstalling a Client

- Login to the computer using an Administrative account
- Run the BibliTECH Client Uninstall application.
- Perform a “Tidy Up”

Tidying Up

The BibliTECH uninstallers will remove the files installed by the respective installer but will not remove any files that have been added to the two BibliTECH folder structures (This will occur as a result of normal operations – they will contain the library data).

If it is desired to completely remove BibliTECH from a computer, these two folder structures will need to be deleted.

Running the Web Engine on another Server

It is possible to install the BiblioTECH WWW Server engine on another computer – this may be required for security/performance reasons. If you need to do this, please contact BiblioTECH Support.

Web Search from another Application

The BiblioTECH server exposes an API which will allow other applications to perform programmatic requests. All API responses are formatted as a “web page” which contains an XML structure.

Web ‘XML’ Search URL Format

The URL to search the BiblioTECH Web Server is

`http://BT8server:16001/search?M=_&T=_&F=_&N=_`

where

BT8server	=	the dns name or IP address of the BiblioTECH server
16001	=	the port used by the BT8 API (default is 16001)
T	=	a “user” token – not currently used by the BT8 Web Server Allows calling code to identify responses to specific requests <i>(required and is returned unaltered to the sender)</i>
N	=	max number of results to return (default 200)
M	=	search mode (default 1) 0 Whole Word 1 Start of Word 2 Phrase (anywhere in text)
SQ	=	search query

Example 1 : Find DOGS
(Start of Word, first 200 results)

`http://BT8server:16001//find?M=S&N=200&T=1234&SQ=dogs`
or
`http://BT8server:16001//find?T=2345&SQ=dogs`

Example 2 : Find DOGS RETRIEVER
(Whole Word, first 50 results)

`http://BT8server:16001/find?M=W&T=1234&F=dogs%20retriever&N=50`

Search Results XML Structure

The returned XML file will have at least one node <info>. This contains information about the request and the list of “friendly” BiblioTECH field names.

If there were any resources found, there will be one or more (up to the maximum number specified) additional <resource> nodes. These will contain a list of field values. Which fields are included depends on the ViewMode (and if not “Brief”, which fields have been specified for Multi-Line View within BiblioTECH)

```
<<?xml version="1.0" encoding="windows-1252"?>
<root count="200" tt="872" dt="42166.6534117014" t="1234">
  <info>
    <copyright>© BiblioTECH International 1995 - 2015</copyright>
    <owner>Development</owner>
    <client>127.0.0.1</client>
```

```

    <when>42166.7</when>
  </info>
  <displaynames>
    <dewey>Dewey</dewey>
    <title>Title</title>
    <author>Author</author>
    <gmd>Material Type (GMD)</gmd>
    ...
    <url>URL</url>
    <notes>Notes</notes>
  </displaynames>
  <resource Source="BiblioTECH" ID="1" _created="31778" _modified="39499.5" CC="1" LibID="0"
  LibMkr="Main" LocID="0" LocMkr="Main" Match="4" Status="1">
    <ID>1</ID>
    <_created>31778</_created>
    <_modified>39499.5</_modified>
    <gmd>FICTION</gmd>
    <title>Star Trek III short stories</title>
    ...
  <selfcirc>False</selfcirc>
  <ismag>False</ismag>
  <rdagmd/>
  <subtitle/>
  <campus/>
  <scot/>
</resource>
</root>

```

NB Resources that have the same *ccid* are 'copies' of each other.

XML explanation

```
<root count="200" tt="872" dt="42166.6534117014" t="1234">
```

3 attributes

<i>tt</i>	<i>time taken in milliseconds</i>
<i>dt</i>	<i>current server date/time in decimal days since midnight at start of 1 Jan 1900</i>
<i>t</i>	<i>returned user token</i>

```
<info
```

information re: the BiblioTECH system

```
<displaynames
```

each child represents the pair *<BTfield>* Display Name to use *</BTfield>*

```
<resource
```

one node per result – each containing ...

3 attributes