Asset Finance Quotation System

Version 8

AFQS

Technical Summary

Contents

Overview

Asset Finance Quotation System 8 (AFQS) is a web-based lease analysis software product used for pricing of **lease**, **hire purchase** and **equipment loan** types of finance and delivering quoting and documentation management capabilities over the internet and intranet.

AFQS is a multi-user, front-end application capable of handling complex quote scenarios and suitable for a medium to large size organisation.

The main features of AFQS include:

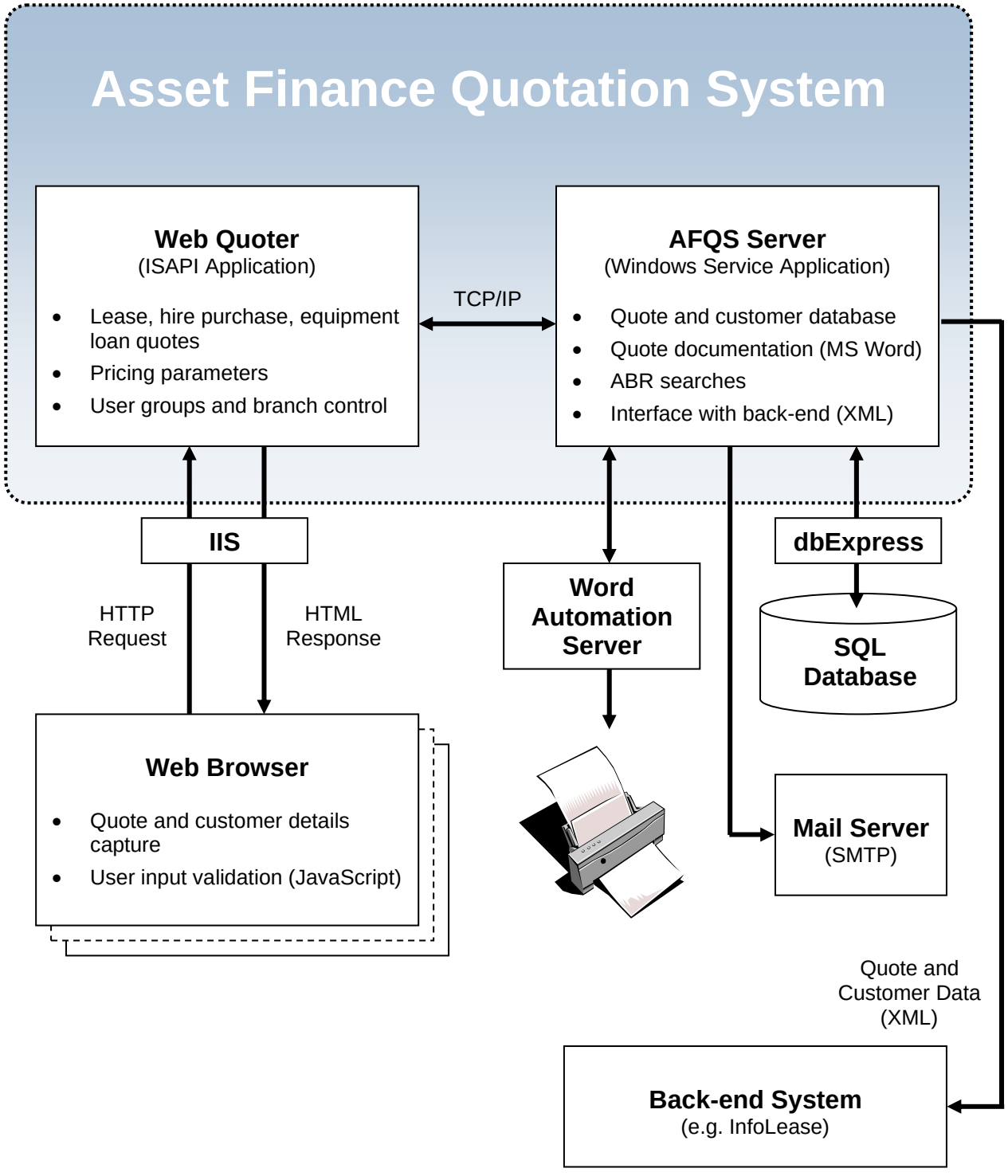
- Quote on Yield, Customer Rate and Lessor Rate, calculate Yield
- Solve for Equipment Cost, Residual, Drawdown Fee (Brokerage), Dealer Subsidy Rate and Dealer Subsidy Amount
- Vendor subsidy programs
- Finance comparison
- Payout calculation
- Multiple assets
- Regular, irregular and seasonal repayments
- Quote Summary, Payment Schedule, Amortisation Schedule and Tax Worksheet
- Automatic Pending Quotes Report emailed to each user
- Quote documentation (Word or PDF format, option to email to the customer)
- Quote and customer database (SQL Server)
- Pricing parameters: depreciation rates, cost of funds, margin, residual bands, etc.
- Australian and New Zealand jurisdictions
- Full GST support
- User access control
- Interface with back-end systems (XML)

The architecture, functionality, technical requirements and installation procedure of AFQS are described further in this document. The meaning of the abbreviations used is explained on page 49.

Additional information on AFQS can be found on www.afqs.com. The AFQS User Guide can be also downloaded from this website.

Architecture

As shown in the diagram below, Asset Finance Quotation System consists of two server type applications: **Web Quoter** and **AFQS Server**, implementing the user interface and the database module of the system respectively. The latter also performs tasks that are relatively time consuming and should be run in the background process not to compromise performance.



Briefly, the user of AFQS can log in to the system and calculate a quote online by entering and submitting through the web browser, e.g. Microsoft Edge, the details of the quote such as equipment type, cost, term, repayment structure, etc., as well as the customer details. The browser validates the input details and sends them to the server for calculation. The server calculates the quote and sends back the results, which may include the amount financed, repayment schedule, amortisation and other details. The results are displayed in the browser window and can be printed, if necessary.

The user can also request for a quote document, e.g. letter of offer or application form, to be generated in the Word or PDF format. The document can be downloaded (i.e. opened by the browser or saved as a file), printed or sent to the customer by email.

The calculation is performed based on the pricing parameters set up on the server that include depreciation rates, cost of funds and margin for residual and term, state stamp duty rates and other parameters.

The user can choose to save the quote, or a variation of the quote, in the database. If the customer decides to proceed with the transaction, the quote can be re-opened, re-calculated, marked as successful (accepted or settled) and passed over to the back-end system through an XML based interface to generate the contract.

The user groups of AFQS as well as the scope of functionality available to each group are configured by the System Administrator.

Due to the nature of the Internet, one system can be accessed by users from different geographies and various platforms. As a result, AFQS is simple to install, maintain and upgrade.

AFQS does not support clustering or other technologies that involve running (or switching between) multiple instances of the application on different servers. Only one copy of the application must be installed.

Technical Requirements

Web Quoter

- Windows 2000 or later.
- IIS 5 – 7.

AFQS Server

- Windows 2000 or later.
- SQL Server 2000 or later (usually installed on another server).
- Word 2003 – 2010 (only required if quote documentation is generated).
- Adobe Acrobat Professional 6.0.0 (only required if quote documentation is converted to PDF format).

User Workstation

- Microsoft Edge.
- Word 2003 – 2010 (only required if quote documentation is generated).

Web Quoter

Design and Technical Requirements

Web Quoter is the user interface part of AFQS implemented as an ISAPI DLL (afqs.dll) loaded and run by the web server. Web Quoter receives and processes HTTP requests from the web browser and sends back responses in HTML displayed by the browser.

Most of the processing occurs on the server side. The HTML forms displayed by the browser encapsulate some JavaScript code that validates the user input before the forms are sent back to the server.

Web Quoter runs on the ISAPI-enabled server, e.g. Windows 2003, where it has to be installed in a virtual directory with the Execute Permissions set to «Scripts and Executables». As AFQS does not support *clustering*, only one copy of Web Quoter must be installed.

Apart from the afqs.dll file, Web Quoter consists of a number of data files storing the pricing parameters (.dat) and image files used by the HTML forms displayed by the application (.gif and .jpg). The data and image files must be installed in the \Data and \Images subdirectories relative to the location of afqs.dll respectively.

It is prerequisite for the configuration of the web server to allow Web Quoter WRITE access to its data files as well as the .emf and .doc files the application may have to create in the \Graphs and \Documents subdirectories to service a particular HTTP request. If the required subdirectories do not exist, they are created automatically.

The memory and disk space requirements of Web Quoter are proportionate to the number of users. However, both are unlikely to exceed 20 MB.

The web server loads Web Quoter automatically when one of the following URL links is activated by the web browser:

URL	Action
host/*path*/afqs.dll/Quote	Web browser loads quote details form
host/*path*/afqs.dll/Config	Configuration utility of Web Quoter is run
host/*path*/afqs.dll/Statistics	Displays quote statistics

where

- *host* is the host name of the server (for example, www.bestfinance.com) and
- *path* is the path corresponding to the directory where Web Quoter is installed on the web server (normally it is afqs).

Once loaded, Web Quoter remains in the memory space of the web server for faster access. Consequently, to re-install Web Quoter it is necessary to re-start the web server (IIS).

The above URL links can be used on any web page according to the general HTML rules. For example, to create a link labeled 'Online Quote' activating the quote details form from a web page, add the following to the HTML file:

```
<A HREF="afqs.dll/Quote">Online Quote</A>
```

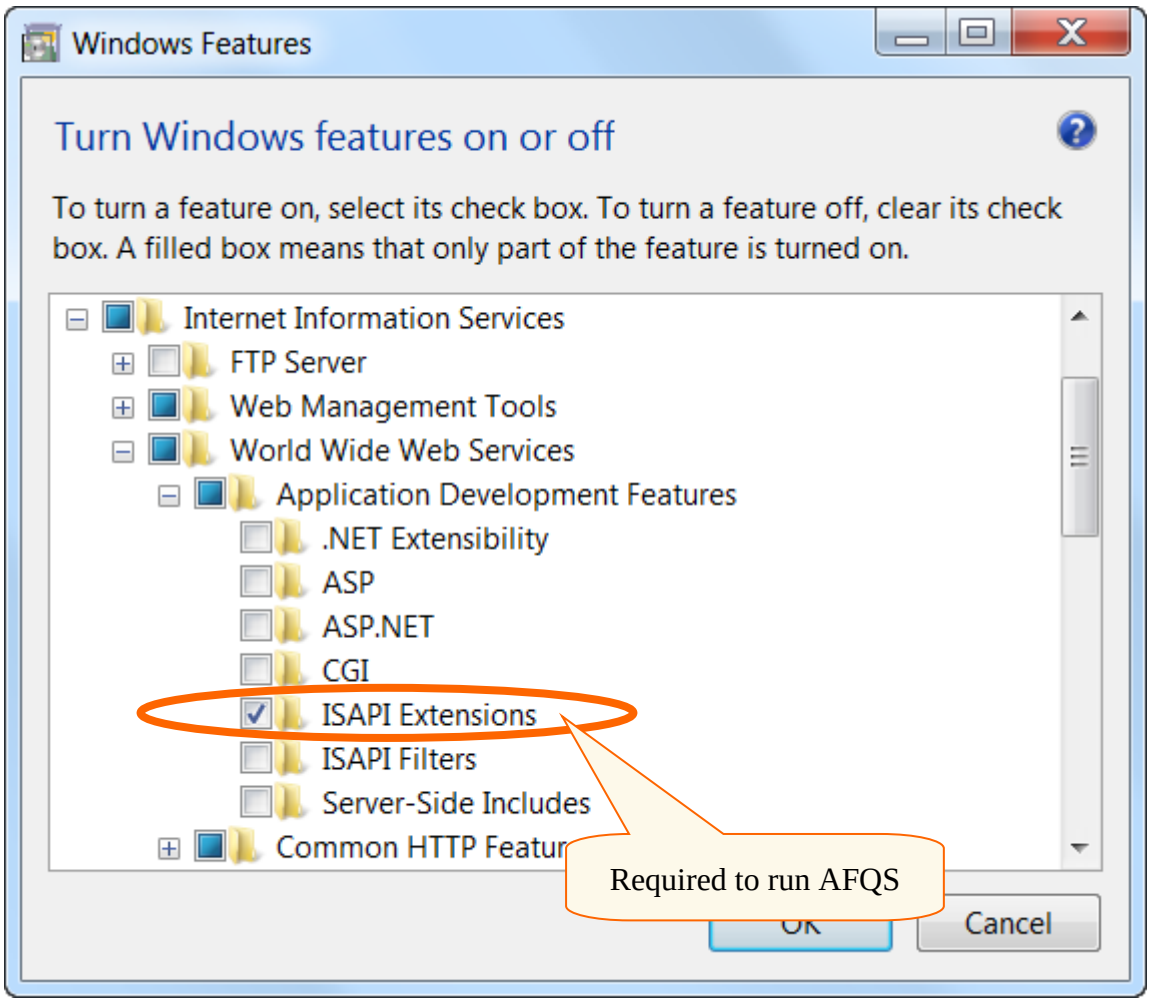
This example assumes that the HTML file is in the same directory as afqs.dll.

On the client side, Web Quoter requires Microsoft Edge with the following security settings:

- File download: enable;
- Active scripting: enable;
- Accept first-party cookies.

Installation Procedure

Installing Web Quoter requires knowledge of Microsoft Internet Information Services (IIS). For IIS 7 and later, it is necessary to enable ISAPI Extensions in IIS Configuration before beginning the installation.



This section only covers the installation of Web Quoter on the web server. AFQS Server is installed separately by running AFQS Server Setup on the application server (see instructions on page 25). It is also possible to install them both on the same server.

Steps 1—6 are normally performed by technical staff. Once completed, the System Administrator of AFQS is provided with the URL to the Login page (Default.htm) and continues configuration from step 6.

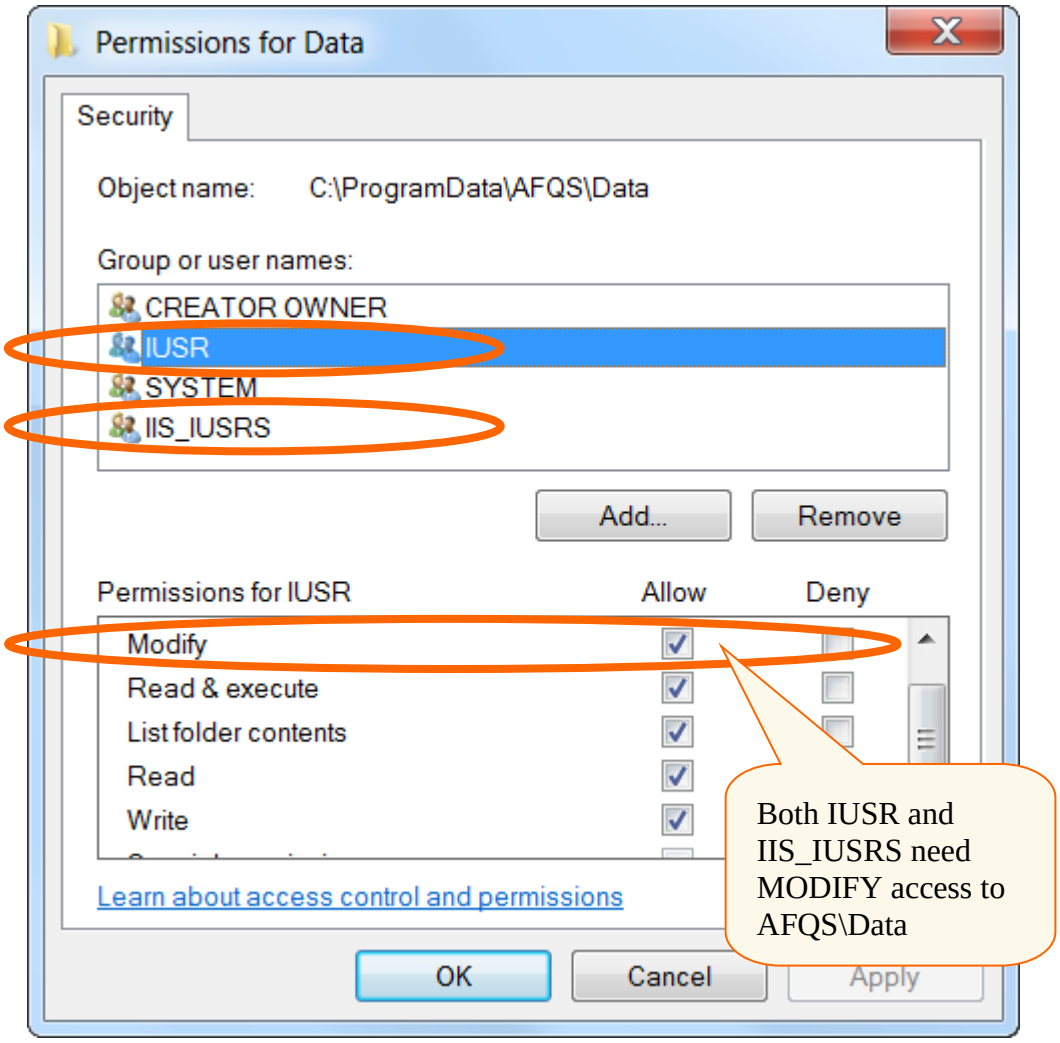
1. If updating an existing installation, make sure that the users cannot access the application (by opening its URLs) while the new version is being installed.

2. Run **AFQS Setup.exe** on the web server and follow instructions. The default (recommended) installation location is `C:\Inetpub\wwwroot\afqs`.

3. (This step is only required for a new installation.)

   When prompted by Setup, use the directory security tab to give the IUSR account and the IIS_IUSRS group MODIFY access to the directory where the data files will be stored:

   ```
   [ProgramData]\AFQS\Data
   ```



4. Unless opened automatically by Setup at the end of the installation (the usual case), open the Default.htm file (installed in step 2) in the web browser by entering *host/path*/Default.htm in the browser's address box. For example, the actual URL may look like:

   http://www.bestfinance.com/afqs/Default.htm

   Alternatively, select 'Asset Finance Quotation System' from the Favorites menu of the browser (on the web server only).

5. Default.htm will open the Login page with three main links: Quote, Configuration and Statistics. Click on the Configuration link to open the Configuration page. You may be prompted to enter your login ID and password if it is not a new installation and at least one user has been previously added to the system.

   If the browser displays *"This software is not registered for use on «host name»"*, send the exact message (copy and paste) to the Vendor and request to register the server indicated in the message. After the server has been registered, you will receive a new version of AFQS Setup.exe and will resume the installation from step 2.

   In case of other error messages, e.g. *"File not found"*, refer to the Troubleshooting section of this document.

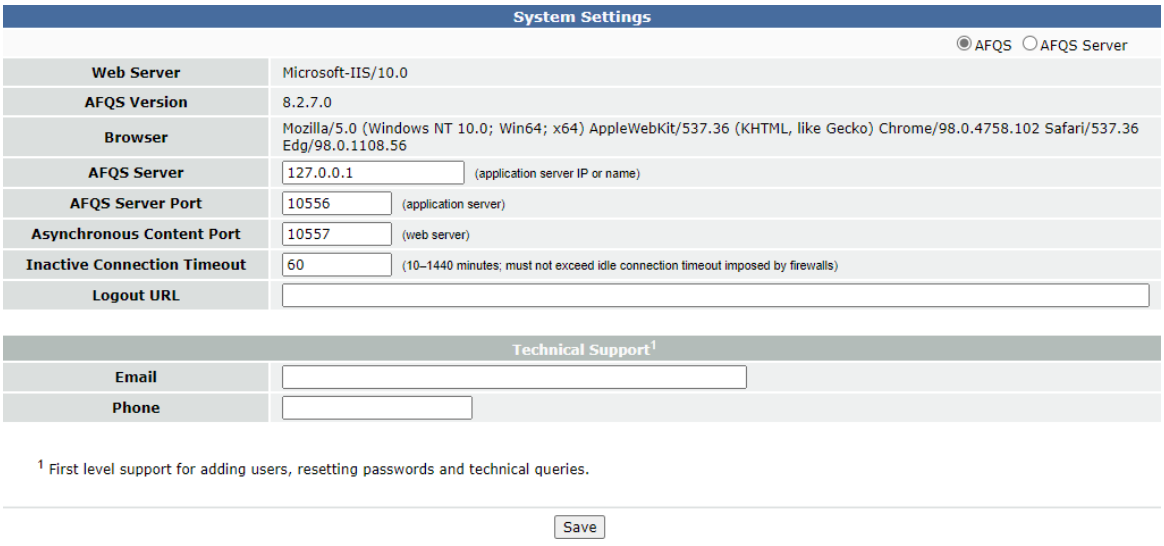
6. Open System Settings from the Configuration page.

   - Enter the IP address or computer name of the machine where AFQS Server is installed. Leave it as 127.0.0.1 (default) if it is installed on the same server as Web Quoter.

   - Enter the port number Web Quoter and AFQS Server will use to communicate with each other via TCP/IP. This port number must be unique and not used by any other application. It is recommended to leave the default port number (10556) unchanged.

   - Specify the port number that will be used to send asynchronous content from AFQS Server to Web Quoter. This port number must also be unique and should be normally left at the default value (10557).

   - The Logout URL parameter can be set to the page that will be displayed after the users log out from AFQS. If left blank (default), the logout will redirect to the page preceding the login.



If a firewall is used, AFQS Server Port must be opened on the application server and Asynchronous Content Port on the web server. This is not required if Web Quoter and AFQS Server are both installed on the same server.

7. For a new installation, you will need to create one or more *user groups*[1] and *companies/branches*[2]. For example, you can create a 'System Administrator' group (with most features turned on), then create a company/branch with a name 'Head Office'; click on the Users link corresponding to 'Head Office' and add yourself as a user selecting 'System Administrator' as your user group. At this point, you will be asked to log in and change your password.

   You can then proceed to add pricing tables, depreciable items and other parameters as required. For all new companies/branches, remember to click on the Items link and make some of the depreciable items available for quoting.

[1] ***User groups*** *determine the role (rights), e.g. System Administrator, Branch User, Broker, etc.*
[2] ***Companies/branches*** *determine the office location, e.g. Head Office, Springfield Branch, …*

Each AFQS user belongs to a user group and, at the same time, to a company/branch.

Backup and Disaster Recovery

The only part of the file structure of Web Quoter that has to be backed up on a regular basis is the `[ProgramData]\AFQS\Data` directory containing .dat files. The other parts of the system do not need to be backed up as they either store temporary files or can be restored by running AFQS Setup.

The recommended backup frequency is daily with copies for the last two weeks or more stored at any time.

To restore Web Quoter from backup:

1. Stop IIS.
2. Restore the `[ProgramData]\AFQS\Data` directory from backup.
3. If necessary, run AFQS Setup to re-install the program files.
4. Start IIS.

A copy of Web Quoter can be installed on a disaster recovery (DR) server with the same host name as the main server. The switch over to the DR server can only be done if the main server is shut down. Multiple instances of Web Quoter must not run concurrently.

Before the switch over, the Web Quoter data files on the DR server must be restored from the last backup.

Key Features

Quoting (Calculating Repayments)

Web Quoter gives quotes on *Yield*, *Rate Excluding Fees* or *Rate Including Fees* depending on the state of the Calculation Method parameter of the Lessor settings.

The Rate is either determined automatically based on the input quote details or specified by the user directly. The automatic Rate equals the sum of the Base Cost of Funds, Cost of Funds for Residual and Term, Margin for Residual and Term and Company/Branch Margin. The user input Rate overrides the automatic Rate; this option is controlled by the user group settings and should be made available to high level users only.

To calculate a quote, the user has to fill in the quote details form activated by the *host*/*path*/afqs.dll/Quote link in the browser window and select the Summary link. The JavaScript code contained in the form will check the contents of the following fields before sending the form to the web server:

1. Type of finance (lease, hire purchase – disclosed or undisclosed, equipment loan)
2. State for stamp duty
3. GST repayment (none, at settlement or after 1 – 4 months)
4. Drawdown fee (brokerage: amount or percentage)
5. Yield/Rate (if omitted, automatic Rate applies)
6. Whether it is a stamp duty exempt transaction
7. Depreciation start date
8. Term (in months)
9. Equipment description
10. Whether equipment is new or used
11. Whether GST applies to the purchase of equipment by Financier – GST is not applicable in case of Private Sale
12. Equipment cost including GST
13. GST-free amount
14. Deposit/trade-in
15. Residual/balloon (amount or percentage)

16. Repayment structure (regular, irregular or seasonal)

17. Repayment frequency (monthly, quarterly, half-yearly or yearly) in case of regular repayments

18. Repayment start date

Upon successful calculation of the quote by Web Quoter, the server will return the summary page. The user will see the results in the browser's window and will be able to print them out, save the quote (or a variation of the quote), generate quote documentation or go back to the quote details form to change some of the details and re-calculate, if necessary.

Additional Solve Functions

In addition to the main calculation function described in the previous section, Web Quoter has several *solve* functions calculating:

- Equipment Cost
- Residual/Balloon
- Drawdown Fee (Brokerage)
- Yield/Rate
- Payout (Termination) Details
- Dealer Subsidy Rate
- Dealer Subsidy Amount

The above functions are available from the main quote details form. Each function requires additional input. For example, if the user selects Solve for Dealer Subsidy Amount, a popup screen will be displayed prompting the user to enter the Target Rate. Conversely, to solve for Dealer Subsidy Rate, the user will be required to specify the Subsidy Amount for each item of equipment.

Vendor Subsidy Programs

Each item of equipment set up in AFQS Configuration can have a *vendor subsidy* program associated with it. Unlike the *dealer subsidy* entered by the user manually, the *vendor subsidy* is calculated based on the program parameters for the selected item of equipment with the results hidden from the user, if necessary.

The *vendor subsidy* program consists of the following parameters:

- Subsidised amount per $1,000 of either equipment cost (if «cost based» parameter is selected) or amount financed
- Subsidy limit as amount and as percentage of cost (if both are specified, the minimum of the two applies)
- Minimum rate to customer
- Subsidy start and end dates
- Cost of funds term (in months)
- Discount rate (used to quote on if the subsidy limit has not been exceeded and the quote term equals the COF term; otherwise, the normal rate applies)
- Whether the GST component of equipment cost / amount financed is subsidised
- Whether subsidy is calculated based on equipment cost or amount financed
- Whether subsidy is fixed (if selected, the minimum customer rate is achieved by increasing the margin where the original subsidy amount will produce a lower-than-minimum customer rate; otherwise, the minimum customer rate is achieved by reducing the amount of subsidy)

Equipment items with *vendor subsidy* programs must be always quoted separately, i.e. they cannot be used in multi-asset quotes. However, it is possible to quote both *vendor subsidy* and *dealer subsidy* on one item of equipment at the same time.

Rate Premium

When the user's access privileges do not allow quoting on the user specified rate, the rate is determined automatically based on the cost of funds and margin for the term, residual and amount financed. This automatic rate is driven by the pricing parameters and cannot be changed by the user. However, the user (usually a dealer) can choose to increase the customer rate by a *rate premium*. The benefit of the higher rate will be shared between the Lessor and the Dealer in the proportion specified through the Lessor Rate Premium Share parameter for each company or branch.

For example, suppose the customer rate applicable to the transaction is 7%, the rate premium specified by the user is 1% and the Lessor's share of the rate premium is 30%. The program will solve for the rentals and brokerage amount so that:

1. The customer rate becomes 8% (7% + 1%).

2. The Lessor's yield is x%, where x% is the yield that will give the customer rate of 7.3% (7.0% + 0.3%) when there is no brokerage.

In this way, the Lessor gets the benefit of the customer rate going up to 7.3% (as reflected in a higher yield). The Dealer has the remainder of the benefit with the customer rate going up to 8.0% (in brokerage).

Pricing Parameters

The Configuration utility of Web Quoter supports the following pricing parameters:

- **Cost of funds** per residual band and term band (separate tables for Australia and New Zealand).
- **Margin** per equipment cost band and term band.
- **Company/Branch Margin** per equipment cost band and term band.
- **Depreciable items** (separate tables for Australia and New Zealand) including description, depreciation rate, depreciation method (prime cost, diminishing value or fully expensed), min & max residual (%) per term band, whether the luxury car tax applies to the item, whether the item must be quoted on the fixed rate only and, finally, the vendor subsidy program, if applicable.
- **Depreciable items available to each company/branch** – a subset of the above.
- **GST rates** (separate tables for Australia and New Zealand).
- **Miscellaneous Lessor parameters** including analysis method (IRR, Dual Rate of Return or Actuarial Rate of Return), fixed rate for *used* items, fees with each drawdown, rental and residual, balance month and GST lag.
- **Tax rates and tax lags** for Australia and New Zealand.
- **Term bands** (in months) used to determine the applicable cost of funds and margin for the quote.
- State **stamp duty rates** and limits.
- **User groups** with a specified scope of access for each group. Every user of the system is a member of a certain user group and also of a company/branch. The former defines the user's access privileges whereas the latter provides the system with the information about the user's jurisdiction (Australian or New Zealand), branch level margin and available quote documentation templates.

Web Quoter stores the above parameters in the file database using an internal format located in the \Data directory relative to the location of afqs.dll. The data files are automatically maintained by Web Quoter and must not be altered externally.

The System Administrator can modify the pricing parameters through the browser by activating the *host*/*path*/afqs.dll/Config link. Access to this part of the system is controlled by the user group settings and should be unavailable to most user groups.

Since the pricing parameters are configured directly through Web Quoter, any change takes immediate effect.

Security

User Authentication

AFQS 8 is a multi-user, web-based system available to users with different levels of access, including external users, e.g. dealers or third-party introducers. It is designed to prevent unauthorised access and ensure safety of the quote and customer data.

One of the important mechanisms required to achieve this is *user authentication*, that is determining whether the user is authorised to use the system and what the access privileges of that user are. The authentication process involves the following:

- Each user is required to log in by specifying a **unique login ID** and **password** (up to 16 characters). The user is given a **limited number of login attempts**[*] (usually three). If the user fails all the attempts allowed, a **timeout**[*] is imposed for the time of which the user is prevented from further login attempts.

- The **minimum password size**[*] can be from 3 to 16 characters.

- The password is stored on the server side in the encrypted form. The user specified password is submitted via web, encrypted and then matched with the stored password.

- The login ID and password are created by the System Administrator when the user is added to the system and can be changed in case when the user forgets his password.

- The password set up by the System Administrator expires immediately on the first login and the user is required to select a new password.

- The password selected by the user expires after a certain number of days[*].

- The system maintains a **history of 15 passwords** to prevent the user from re-using recent passwords.

- Users remaining inactive for a certain period of time[*] are logged out automatically.

- The user may be able to reset his password to a randomly selected temporary password that will be emailed to his specified email address. The temporary password expires immediately on the first login. The System Administrator can enable this feature by selecting the Password Reset option of the Security settings on the AFQS Configuration page.

[*] *Configurable parameter set up by System Administrator*

Session Management

User session information is stored on the server side. Requests are identified and linked to the corresponding session object through a session ID sent via HTTP as an encrypted *cookie*.

The HTTP content is explicitly prevented from *caching*, that is storing of the pages by the browser or any other systems between the browser and the web server for faster access.

Input Data Validation

All the data input by the user is validated to eliminate the risk of SQL injection and cross-site scripting.

Encrypting Data Sent Via the Internet

AFQS uses the standard HTML form mechanism to capture and submit over the web quote and customer details. This data is sent without encryption. This does not pose a risk when AFQS is used on the Intranet as it is normally protected from external access.

In case of the Internet deployment, the communication between the web browser and the web server running AFQS can be protected by using the Secure Socket Layer (SSL) encryption. The mechanism of SSL is external to AFQS and does not require any changes to the AFQS code or settings. Whether SSL is necessary should be decided in each particular case of deployment depending on the circumstances.

Quote Statistics

Web Quoter keeps track of the given quotes by recording the following quote statistics:

- Total number of quotes
- Average amount financed, deposit and residual
- Monthly and daily quote number graphs as well as graphs based on the time of day, finance method and state
- Number of quotes and monthly amount financed for a selected company/branch relative to the average for all companies/branches
- Number of quotes and monthly amount financed for a selected user relative to the average for all users of that company/branch

The quote statistics can be viewed through the *host*/*path*/afqs.dll/Statistics link and can be used for analysis of the quoting process.

AFQS Server

Design and Technical Requirements

AFQS Server is a Windows *service* application run by the operating system in the background without interaction with the desktop. It should be set up to start automatically when the system is started. The state of AFQS Server can be monitored through the application event log used to record information, warning and error messages under a source reference 'AFQS'.

As shown in the diagram on page 5, the main functions of AFQS Server include:

- Ability to store and retrieve quote and customer details. AFQS Server uses a SQL Server database accessed via dbExpress.
- Generating quote documents in the Word or PDF format for viewing, printing or emailing to the customer, depending on the user's choice.
- Performing Australian Business Register (ABR) searches by ABN or entity name.
- Generating management reports.
- Sending quote and customer details to the back-end system through an XML based one-way interface.

That is the time consuming operations that may affect the overall performance if not moved to a separate process. It is for this reason that AFQS Server should be installed on a different server than Web Quoter, if possible.

AFQS Server runs on Windows 2000 and later operating systems and requires 20–30 MB of RAM a considerable part of which is used by Word.

Currently, versions 2003 – 2010 of Microsoft Word are supported. All documents are created in the Word format initially and then, if necessary, converted to PDF.

To facilitate the PDF functionality, Adobe Acrobat Professional 6.0.0 has to be installed on the application server.

Installation Procedure

Installing AFQS Server

1. Stop Asset Finance Quotation System service through Service Manager. This step is not required when installing AFQS Server for the first time.

2. Run the Setup program supplied by the Vendor (AFQS Server Setup.exe) on the application server and follow instructions.

3. When prompted by Setup, select either 'Full installation' or 'Change settings'.

4. Specify the host name of the database server, the database, the login name and the password required to log in to the database. Note that «Windows authentication» for SQL Server is not supported in AFQS.

   An empty database (for a new installation only) has to be configured manually as explained on page 29 before running Setup. AFQS Server will create all the tables automatically when it starts.

5. Specify the port number that Web Quoter will use to make connections to AFQS Server. This port number must not be used by any other application. If a firewall is used, the port number specified in this step has to be opened on the application server.

6. Specify the IP address of the SMTP mail server that can be used for sending quote documents to customers by email. The configuration of the mail server must allow *mail relaying* from the IP address of the system running AFQS Server.

7. On the same screen, enter the System Administrator's email address that can be used for automatic notification of the application errors.

8. Specify miscellaneous housekeeping parameters as prompted by Setup: grace periods for firm, accepted and approved quotes, etc. Bear in mind that these parameters will control the automatic maintenance procedures performed by AFQS Server and will affect the size of the database. Do not select to keep expired quotes for 5 years, for example, if it is not really necessary.

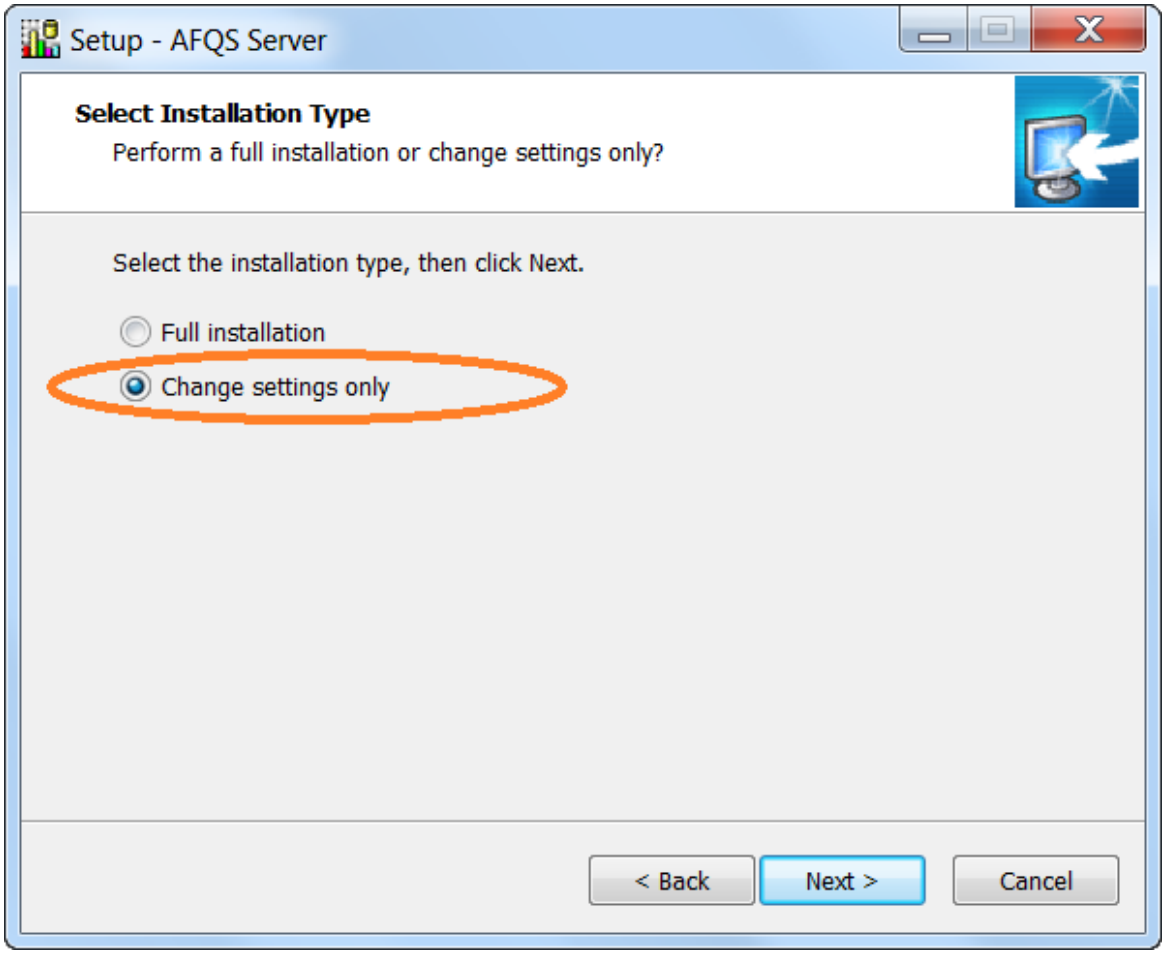
9. If quote documentation will be required, select 'Create under user account' and enter the account credentials on the next screen. A server user will need to be created for this purpose prior to this step. This user's profile will be used to create all quote documents.

   The 'local system account' option is retained for compatibility with older systems where Word automation could be accessed under that account.

10. Select whether internet connection will be via a proxy. If so, the proxy server has to be configured to accept HTTP connection from AFQS Server.

Changing Configuration Parameters

On the application server, select Start ⇨ All Programs ⇨ AFQS Server ⇨ AFQS Server Setup and scroll to the Installation Type screen. Select 'Change settings only' instead of 'Full installation'.



Scroll through the Setup screens and change the required parameters. Setup will restart AFQS Server automatically for the changes to take effect. Remember to check the application event log at the end as a precaution.

Installing Documentation Components

1. Install Microsoft Word on the application server. Versions 97 – 03 are supported. Word is necessary to generate both Word and PDF documents, regardless of the format. PDF documents are created as Word documents first and then converted to PDF.

2. Install Adobe Acrobat Professional 6.0.0.

3. Open Adobe PDF Printer Properties. Click on Ports and add a port pointing to the location of the \Documents directory of AFQS Server. Usually, C:\Program Files\AFQS Server\Documents. Make it a default port.

4. Test Adobe PDF Printer. Open Word and create a test document. Save it in any location (e.g., My Documents\Test.doc). Send the test document to Adobe PDF Printer: select File ⇨ Print from the Word menu, change the printer name to «Adobe PDF» and press OK. The document should be converted to PDF (Test.pdf) and saved in the \Documents directory.

Steps 2 – 4 are only required if the PDF functionality will be used.

Backup and Disaster Recovery

AFQS Server does not have to be backed up as it is installed on the application server and does not store any data that changes with time. The restoring of AFQS Server can be done by running AFQS Server Setup and then restoring the documentation template files (.doc) in the \Documents directory. The template files are designed and, presumably, backed up externally to AFQS.

To restore AFQS Server from backup:

1. Stop Asset Finance Quotation System service.
2. Install AFQS Server by running AFQS Server Setup.exe.
3. Restore template files in the `[ProgramData]\AFQS Server\Documents` folder.
4. Start Asset Finance Quotation System service.

AFQS Server can be installed on a disaster recovery (DR) server with the same IP address as the main server. The DR server must not be started while the main server is running as multiple instances of AFQS Server cannot work concurrently.

Unlike the AFQS Server files, the AFQS database has to be backed up regularly as new customers and quotes can be added to the database every day.

Database

Before starting AFQS Server for the first time, the database administrator has to create an empty database and set up a user account for AFQS Server to log in to that database.

AFQS Server creates all the required tables automatically, if they do not already exist. Therefore, the login user rights have to include the ability to create and restructure tables as well as modify the data.

Table Structure

The following information about the structure of the tables is provided to facilitate access to the AFQS data by external applications. Such access must be strictly limited to reading.

Table	Column	Data Type[1]	Size	Comments
AFQSUser	LoginID	varchar	16	
	UserID	int		Referenced by Quote.UserID
	LastRemind	datetime		Time of last Pending Quotes report
	RemindFreq	smallint		Pending Quotes report frequency (in days)
	Email	varchar	50	
	Name	varchar	32	
Company	Name	varchar	50	
	CompanyID	int		Referenced by Quote.CompanyID
	Jurisdiction	smallint		0 – Australian 1 – New Zealand
Customer	Surname	varchar	16	
	GivenName	varchar	16	
	Company	varchar	50	
	CustomerID	int		Referenced by Party.CustomerID
	CustNo	int		Customer number
	ManagerID	int		
	BusType	smallint		0 – business name 1 – company 2 – individual 3 – partnership 4 – trust
	Title	varchar	16	
	Phone	varchar	16	
	Mobile	varchar	16	
	Email	varchar	50	
	Address	varchar	50	
	City	varchar	30	

[1] *Refer to Microsoft SQL Server documentation for information on data types*

Table	Column	Data Type[1]	Size	Comments
	State	varchar	3	
	PostCode	varchar	4	
	ABN	varchar	14	
	ANZSIC	varchar	4	
	Risk	varchar	3	
	Modified	datetime		
Dealer	Name	varchar	50	
	DealerID	int		Referenced by Quote.DealerID
DepRate	Description	varchar	50	
	DepItemID	int		Referenced by ID's stored in Quote.Sched
	ResDate	datetime		
Quote	QuoteNo	int		See Quote Number Format on page 38
	Variation	smallint		- 1 – base quote 0 – variation A 1 – variation B … 25 – variation Z
	Status	smallint		0 – Indicative 1 – Firm 2 – Accepted 3 – Settled 4 – Lost 5 – Expired
	CustomerID	int		Refers to Customer.CustomerID
	UserID	int		Refers to AFQSUser.UserID
	CompanyID	int		Refers to Company.CompanyID
	DealerID	int		Refers to Dealer.DealerID
	Given	datetime		Given date
	Modified	datetime		Last modification date
	CommDate	datetime		Quote commencement date
	StartDate	datetime		Repayment start date
	ResDate	datetime		Residual date
	AmountFinanced	float		Total amount financed (Lessor)
	COF	float		Cost of funds for residual and term
	CustAmountFinanced	float		Amount financed (Customer)
	DDFee	float		Drawdown fee (brokerage)
	DDFeeLessPremium	float		Original drawdown fee (not increased by rate premium)
	DDFeeGST	float		GST on drawdown fee
	DDFeeITC	float		ITC on drawdown fee
	DDFeePercent	float		Drawdown fee percentage
	DealerSubs	float		Dealer subsidy amount

Table	Column	Data Type[1]	Size	Comments
	DealerSubsGST	float		GST on dealer subsidy
	Deposit	float		Total deposit
	DocFee	float		Document fee
	EquipCost	float		Total equipment cost including GST
	GSTFinanced	float		Total GST financed
	GSTFreeAmount	float		Total GST-free amount
	ITCEntitle	float		Customer ITC Entitlement
	ITConDD	float		Total ITC on drawdown
	LCT	float		Luxury car tax
	LesseeRate	float		Customer rate
	LessorRate	float		Lessor rate
	NotionalProfit	float		Notional profit (NPV at COF of future cashflow)
	OtherFees	float		Miscellaneous upfront fees
	PaidToDealer	float		Amount paid to dealer
	RatePremium	float		Rate premium
	RentalFee	float		Maintenance fee (with each rental/instalment)
	ResAmount	float		Residual amount
	ResFee	float		Residual fee
	ResPercent	float		Residual percentage
	SDRate	float		Stamp duty rate
	TotBaseRent	float		Total base rental
	TotGST	float		Total GST
	TotNetRent	float		Total net rental
	TotSD	float		Total stamp duty
	UpfrontFees	float		Upfront document and other fees
	UpfrontFeesGST	float		GST on upfront fees
	UpfrontSD	float		Upfront stamp duty
	VendorSubs	float		Vendor subsidy amount
	VendorSubsGST	float		GST on vendor subsidy
	Yield	float		Bank yield/required rate
	AccountNo	int		Account number for DDR
	BSB	int		Account BSB for DDR
	SplAccountNo	int		Supplier account number
	SplBSB	int		Supplier BSB
	AssetCount	smallint		Number of equipment items

Table	Column	Data Type[1]	Size	Comments
	Calcn	smallint		Calculation type: 0 – calculate rentals 1 – solve for cost 2 – solve for residual 3 – solve for brokerage 4 – solve for yield 5 – payout 6 – solve for vendor subsidy rate 7 – solve for vendor subsidy amount
	CalcRentCount	smallint		Number of calculated repayment segments
	DDCount	smallint		Number of drawdowns
	FMethod	smallint		1 – finance lease 2 – operating lease 3 – asset lease 4 – hire purchase disclosed 5 – hire purchase undisclosed 6 – equipment loan
	Frequency	smallint		0 – irregular or seasonal 1 – monthly 3 – quarterly 6 – half-yearly 12 – yearly
	Payment	smallint		0 – direct debit 1 – invoice
	PayStruct	smallint		0 – regular 1 – irregular 2 – seasonal
	QType	smallint		0 – quote on yield 3 – quote on rate excl. fees 4 – quote on rate incl. fees
	RecoupAfterMth	smallint		GST repayment: - 1 – none 0 – at settlement n – after n months (1 to 12)
	RentCount	smallint		Number of user specified irregular repayment segments
	RepayMth	smallint		Seasonal repayment structure: bit 0 – January … bit 11 – December
	Term	smallint		Quote term in months
	COFFixed	bit		Fixed cost of funds specified explicitly
	DDFeeAsAmount	bit		Drawdown fee specified as amount (as opposed to percentage)

Table	Column	Data Type[1]	Size	Comments
	DocFeeFixed	bit		Fixed document fee specified explicitly
	LaggedBalloon	bit		No repayment in last month of term in arrears
	OtherFeesFixed	bit		Fixed other fees specified explicitly
	ResAsAmount	bit		Residual specified as amount (as opposed to percentage)
	SDExempt	bit		Stamp duty exempt quote
	UpfrontFeesFinanced	bit		Upfront document and other fees are financed
	UpfrontSDFinanced	bit		Upfront stamp duty is financed
	Account	varchar	32	Account name for DDR
	Notes	varchar	100	Free-form text
	SplAccount	varchar	32	Supplier account name
	SplEmail	varchar	50	Supplier email
	StateAbbr	varchar	3	State (e.g. NSW, VIC, …)
	Supplier	varchar	50	Supplier of goods
	Sched	image		Asset, drawdown and repayment schedules

The above table structures and the format of the content stored in the particular fields may be modified in the future releases of the AFQS software and require verification with the Vendor should they be used to access the data by applications external to AFQS.

Table Indexes

Table indexes can have a noticeable impact on performance. AFQS Server creates the table indexes automatically when creating the tables.

If the indexes have been altered externally later on or the database access does not seem to be reasonably fast, it is worthwhile checking that the following indexes are maintained:

Table	Columns	Attributes
AFQSUser	• LoginID	Unique, clustered[3]
	• UserID	
Company	• Name	Unique, clustered
	• CompanyID	
Customer	• Surname, GivenName, Company	Unique, clustered
	• CustomerID	
Dealer	• Name	Unique, clustered
	• DealerID	
DepRate	• Description	Unique, clustered
	• DepItemID	
Document	• Created	Unique, clustered
	• QuoteNo, Variation	
Introducer	• Name	Unique, clustered
	• IntroducerID	
Party	• QuoteNo, Number	Unique, clustered
Quote	• QuoteNo, Variation	Unique, clustered
	• CompanyID	
	• DealerID	
	• UserID	

The following scripts can be used to create the necessary indexes on SQL Server:

- **AFQSUser Table**

```
CREATE UNIQUE CLUSTERED
  INDEX [PK__AFQSUser__56E8E7AB] ON [dbo].[AFQSUser] ([LoginID])
WITH
    DROP_EXISTING
ON [PRIMARY]

CREATE
  INDEX [AFQSUserIndex1] ON [dbo].[AFQSUser] ([UserID])
WITH
    DROP_EXISTING
ON [PRIMARY]
```

[3] *'Clustered' only applies to SQL Server.*

- **Company Table**

```
CREATE UNIQUE CLUSTERED
  INDEX [PK__Company__44CA3770] ON [dbo].[Company] ([Name])
WITH
    DROP_EXISTING
ON [PRIMARY]

CREATE
  INDEX [CompanyIndex1] ON [dbo].[Company] ([CompanyID])
WITH
    DROP_EXISTING
ON [PRIMARY]
```

- **Customer Table**

```
CREATE UNIQUE CLUSTERED
  INDEX [PK__Customer__46B27FE2] ON [dbo].[Customer] ([Surname],
[GivenName], [Company])
WITH
    DROP_EXISTING
ON [PRIMARY]

CREATE
  INDEX [CustomerIndex1] ON [dbo].[Customer] ([CustomerID])
WITH
    DROP_EXISTING
ON [PRIMARY]
```

- **Dealer Table**

```
CREATE UNIQUE CLUSTERED
  INDEX [PK__Dealer__489AC854] ON [dbo].[Dealer] ([Name])
WITH
    DROP_EXISTING
ON [PRIMARY]

CREATE
  INDEX [DealerIndex1] ON [dbo].[Dealer] ([DealerID])
WITH
    DROP_EXISTING
ON [PRIMARY]
```

- **DepRate Table**

```
CREATE UNIQUE CLUSTERED
  INDEX [PK__DepRate__4A8310C6] ON [dbo].[DepRate] ([Description])
WITH
    DROP_EXISTING
ON [PRIMARY]

CREATE
  INDEX [DepRateIndex1] ON [dbo].[DepRate] ([DepItemID])
```

```
WITH
    DROP_EXISTING
ON [PRIMARY]
```

- **Document Table**

```
CREATE UNIQUE CLUSTERED
  INDEX [PK__Document__4C6B5938] ON [dbo].[Document] ([Created])
WITH
    DROP_EXISTING
ON [PRIMARY]

CREATE
  INDEX [DocumentIndex1] ON [dbo].[Document] ([QuoteNo])
WITH
    DROP_EXISTING
ON [PRIMARY]

CREATE
  INDEX [DocumentIndex2] ON [dbo].[Document] ([Variation])
WITH
    DROP_EXISTING
ON [PRIMARY]
```

- **Introducer Table**

```
CREATE UNIQUE CLUSTERED
  INDEX [PK__Introducer__4E53A1AA] ON [dbo].[Introducer] ([Name])
WITH
    DROP_EXISTING
ON [PRIMARY]

CREATE
  INDEX [IntroducerIndex1] ON [dbo].[Introducer] ([IntroducerID])
WITH
    DROP_EXISTING
ON [PRIMARY
```

- **Manager Table**

```
CREATE UNIQUE CLUSTERED
  INDEX [PK__Manager__503BEA1C] ON [dbo].[Manager] ([ManagerID])
WITH
    DROP_EXISTING

ON [PRIMARY]
```

- **Party Table**

```
CREATE UNIQUE CLUSTERED
  INDEX [PK__Party__5224328E] ON [dbo].[Party] ([QuoteNo], [Number])
WITH
```

```
    DROP_EXISTING
ON [PRIMARY]
```

- **Quote Table**

```
CREATE UNIQUE CLUSTERED
  INDEX [PK__Quote__540C7B00] ON [dbo].[Quote] ([QuoteNo], [Variation])
WITH
    DROP_EXISTING
ON [PRIMARY]

CREATE
  INDEX [QuoteIndex1] ON [dbo].[Quote] ([CompanyID])
WITH
    DROP_EXISTING
ON [PRIMARY]

CREATE
  INDEX [QuoteIndex2] ON [dbo].[Quote] ([DealerID])
WITH
    DROP_EXISTING
ON [PRIMARY]

CREATE
  INDEX [QuoteIndex3] ON [dbo].[Quote] ([UserID])
WITH
    DROP_EXISTING
ON [PRIMARY]
```

Quote Number Format

The quote number format in AFQS is YMMDD-NNNNNN-V where

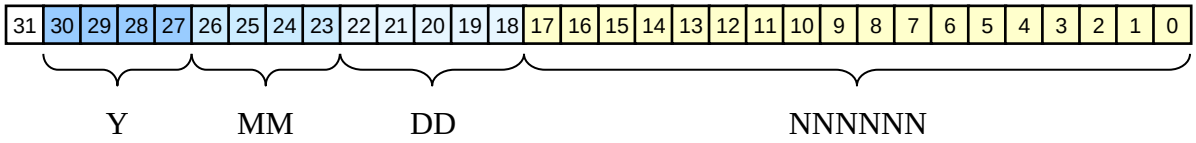
- YMMDD indicates the date when the quote was given:
  - Y is the last digit of the year;
  - MM is the month;
  - DD is the day;
- NNNNNN is the number of the quote on the day (1–262143); its size varies from 1 to 6 digits; and
- V is the variation (A–Z), if not a base quote.

This format is used externally, i.e. when the quote number is displayed on the screen or referenced in the quote documentation.

Internally, the quote number is stored in the Quote table of the database in two integer fields:

Field Name	SQL Data Type	Content
QuoteNo	int	Bits 0–17: NNNNNN Bits 18–22: DD Bits 23–26: MM Bits 27–30: Y Bit 31: always 0
Variation	smallint	- 1 – base quote 0 – variation A 1 – variation B … 25 – variation Z

Binary structure of the QuoteNo field:



The advantages of this quote number format are:

- Fast access by the quote number to individual quotes and ranges of quotes.

- The records of the Quote table are sorted by the quote number and in the chronological order at the same time.
- Quote numbers are short and, therefore, convenient to use as the NNNNNN part starts from 1 every day.

Quote Documentation

Generating quote documentation is an important part of the quoting process providing the customer with an extract of the transaction details in the form of a letter or application form complete with the company logo, terms and conditions and other necessary elements. The quote document can be downloaded and opened in the browser or saved as a file, sent electronically as a Word or PDF attachment (via email) or presented as a printed copy.

AFQS offers a flexible mechanism of creating any number of quote documents that can be easily customised to include the appropriate logo, text, disclaimers, etc. When the user selects a document, the system opens the corresponding .doc file and uses the *mail merge* mechanism of Microsoft Word to add the quote details to the body of the document. The user can choose to **download** the document, **email** it to the customer (with a copy also sent to the user, if necessary) or to **print** it on one of the network printers available on the system running AFQS. When the last (print) option is not practical because the user has no access to any of the printers available to AFQS, the user can first download the document and then print it from Word on the local printer.

It takes much longer to generate a quote document than to process any other request because the process involves using Microsoft Word and Adobe PDF Printer. For example, on a system that can calculate a quote in a fraction of a second, it may take a few seconds to generate and send a Word document. It takes much longer to generate a PDF document. It is for these performance considerations that the quote documentation requests are queued and then processed one by one by AFQS Server (on the **application** server), leaving Web Quoter (on the **web** server) free to handle less resource demanding requests.

To set up a quote document:

(In AFQS Configuration)

1. Click on Companies/Branches.

2. Click on Documents. There is a link for each company and branch as they all have their own documents.

3. Press Add.

4. Type the description of the document, e.g. Indicative Letter of Offer; enter the file name of the document; select the quote status (Indicative, Firm, Accepted or Approved) the document can be used with; specify whether the document will contain a monthly payment schedule in addition to the repayment segments table.

5. Press Save.

6. Repeat the above procedure to add as many documents for each company and branch as required.

The above procedure will only create the references to the documents, not the documents themselves. Each document has to be created manually by using Word and saved in the `[ProgramData]\AFQS Server\Documents` folder on the application server. The file name of each document must be as specified in step 4 above.

The quote document must have *mail merge* fields added to its body where the required quote information is to be inserted. Please refer to the Microsoft Word documentation for information on how to add *mail merge* fields to a document. The following fields are currently supported:

Field Name	Comments
AccountName	From Payment section of Status page
AccountNumber	From Payment section of Status page
Address	Multi-line
AmountFinanced	*Customer* amount financed
Assets	Description of each equipment item separated with a line break
ANZSIC	Australian and New Zealand Standard Industrial Classification code
ASICFee	
Branch	Quoting branch name
BSB	Quoting branch No/BSB
BusinessDescription	Description of applicant's business
City	
CommencementDate	
Company	
Deposit	
DOB	Date of birth (individuals) or registration date (other entities)
DocumentFee	
DrawdownFee	Includes GST
Employer	
EquipmentCost	Includes GST
FirstRepayment	
GivenDate	
GivenName	
GSTFinanced	
GSTFree	GST free amount
InputTaxCredit	
Introducer	
LesseeRate	
LicenceNo	Driver's licence number (individuals only)
LuxuryCarTax	
MailAddress	
MailCity	
MailPostCode	
MailState	
MaintenanceFee	Payable with every rental/instalment
MiddleName	
OtherFees	Miscellaneous upfront fees, excluding stamp duty and document fee
PostCode	

Field Name	Comments
QuoteNumber	
Residual	Residual/balloon
ResidualDate	
ResidualPercent	
Security	Multi-line
StampDutyFinanced	Upfront stamp duty financed (Yes or No, equipment loan only)
State	
Supplier	
SupplierAddress	
SupplierCity	
SupplierPostCode	
SupplierState	
Surname	
Term	
TermsCharges	For hire purchase and equipment loan: total net repayments and balloon less customer amount financed; for lease: $0
Title	
TotalRepayment	Total term repayments including government charges
Transaction	E.g. Finance Lease or Hire Purchase – Disclosed
UpfrontStampDuty	
UserName	
Sections (Below merge fields must not be placed inside or adjacent to a table)	
AssetTable	Table of equipment items including description, brand/make, registration number, etc.
Customers	Table of customer contact details
Guarantors	Table of guarantor contact details
CustomerExecution	Execution section for signing by each customer
GuarantorExecution	Execution section for signing by each guarantor
Parties	Customer and guarantor details including business type, relationship manager, ANZSIC, customer number and risk rating
RepaymentSchedule	Table of repayment segments with a start date, number of repayments, frequency, net repayment, GST, stamp duty and total repayment for each segment, may be followed by a monthly repayment schedule if this option is selected for the document
Settlement	Payment, source and supplier details

The basic rules of using *merge fields* in the quote document are:

- The names of the fields added to the quote document must be spelled exactly as above.
- It is not necessary for the document to contain all the supported fields and some (but not all) fields can be omitted; for example, if the document applies to lease quotes only, the Deposit field is not required.

- *Merge fields* can occur in the document repeatedly.

- The quote document must not contain any *merge fields* other than in the list above.

The quote documents generated by AFQS are protected from modification: the recipient of the document cannot change any part of the document, copy and paste it into another document or modify a copy of the document saved under a different name. This restriction applies to both the documents emailed to the customer and the documents emailed to the user.

Resetting User Passwords

User passwords may need to be reset when the users have forgotten their passwords or have been locked out of AFQS after exceeding the allowed number of login attempts.

Resetting Individual Passwords

Individual user passwords can be reset by the administrator through the Configuration page of AFQS.

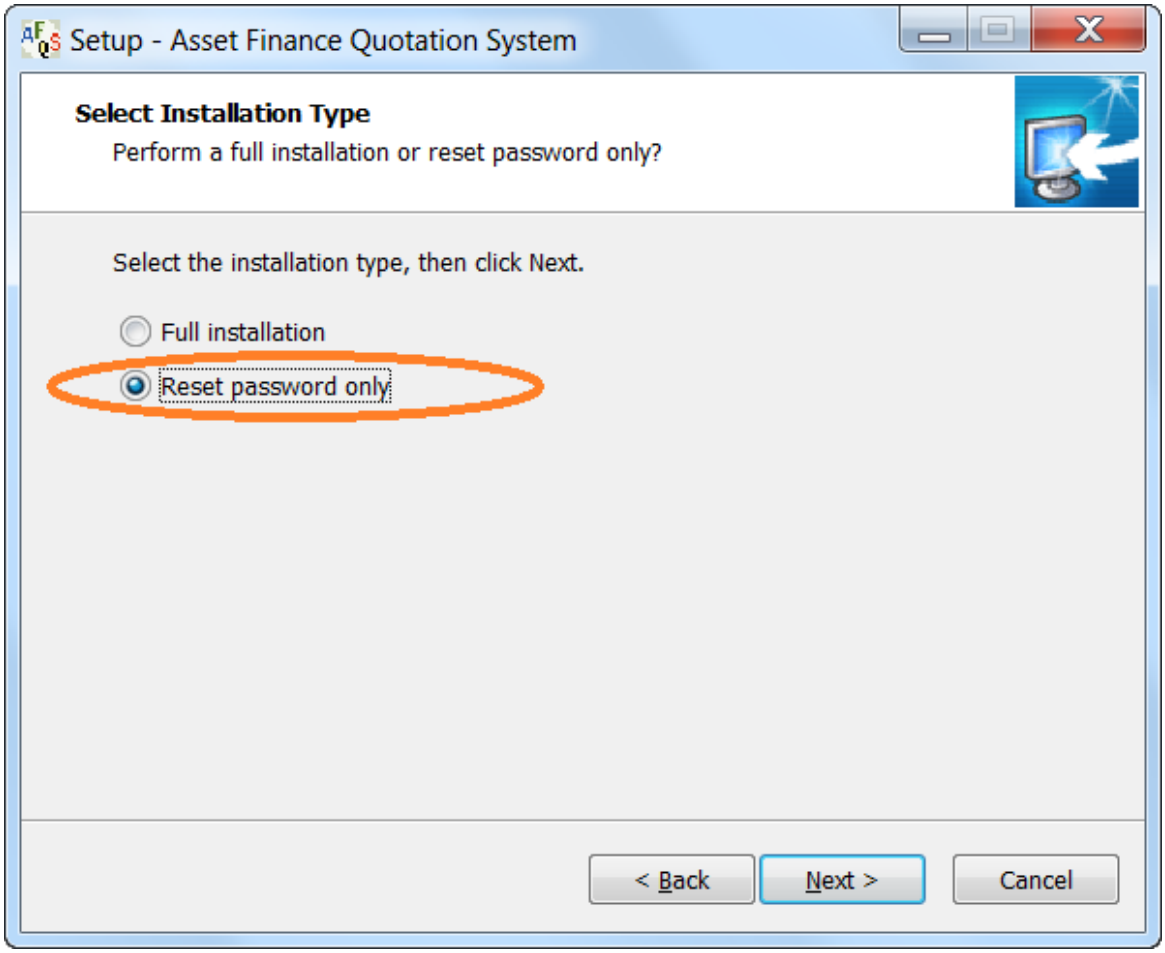
- Click on the Companies/Branches link on the Configuration page.
- Click on the Users link of the required company/branch.
- Select the required user to open a page with the user's details.
- Type a new password in the Password box and press Save. This password will expire immediately when the user logs in for the first time and the user will be asked to change it.

In addition, if the Password Reset option of the Security settings on the Configuration page of AFQS is selected, the user may be able to reset his password himself. In this case, a temporary password will be automatically sent to the user's email address specified in the Preferences and will expire on the first login.

Resetting Administrator Password

If the password cannot be reset as described in the previous section because none of the users has access to the Configuration page, there is an option to reset the password externally through AFQS Setup.

On the web server, select Start ⇨ All Programs ⇨ AFQS ⇨ AFQS Setup and scroll to the Installation Type screen. Select 'Reset password only' instead of 'Full installation' and follow the prompts to set a new password for a specified login ID. This password will expire on the first login and the user will be asked to change it.



Resetting All User Passwords

In the event that all the users have forgotten their login credentials at the same time, the user details have to be reset completely. This may be necessary when switching to a rarely used copy of the system, e.g. on the disaster recovery server, that hasn't been used for a long time.

- Restart IIS through Start ⇨ Run… ⇨ iisreset or by restarting World Wide Web Publishing Service in Service Manager.
- Delete User.dat and Session.dat files from the `[ProgramData]\AFQS\Data` folder on the web server. This will delete all the existing users.
- Open the Configuration page of AFQS (Default.htm) in the browser.
- Click on the Companies/Branches link.
- Click on the Users link of the required company/branch.
- Press Add to create a new user. Enter the user's login ID, name and other details. Leave the Password box blank or type a temporary password. This password will expire immediately on the first login.

- Save the user's details.

- Log out of AFQS and log back in using the specified login ID and password. On successful login, the system will ask you to change the password.

- Return to the Companies/Branches page and add other users as required. Their new passwords specified at this point will expire when they log in for the first time and the users will be asked to change them.

Troubleshooting

Information about any problems encountered by AFQS is either displayed directly in the browser or recorded in the application event log of the application server under a source reference 'AFQS' that can be used to filter the relevant messages.

It is recommended to check the application event log regularly as part of the normal monitoring process.

Problem	Solution
HTTP Error 404 – File not found (displayed by browser)	• Check that ISAPI Extensions are enabled in IIS configuration. • Set the Execute Permissions in the virtual directory properties to «Scripts and Executables». • For IIS 6 or later, an ISAPI extension has to be enabled under the Web service extensions node in IIS Manager.
Error AFQS is not registered on «host name» (displayed by browser)	AFQS needs to be registered on every web server it is installed on. This applies to all new installations as well as existing installations migrated to new servers and other cases when the host name may have changed. Contact the Vendor to register the server indicated by «host name».
Error «user» denied WRITE access to «path» (displayed by browser)	Make sure that the IUSR account and the IIS_IUSRS group both have MODIFY access to the physical directory referred to by «path» (using the directory security tab).
Error Cannot connect to server at «IP address», «port number» (displayed by browser or in application event log)	• If displayed by the browser, AFQS Server may not be running. Start Asset Finance Quotation System service on the application server. • Check if the AFQS Server parameter (AFQS Configuration ⇨ System Settings) is set to the IP address or computer name of the application server. • Check if the AFQS Server Port parameter (AFQS Configuration ⇨ System Settings) is set to the port number specified in AFQS Server Setup. • If a firewall is used, make sure it allows TCP traffic on the port numbers specified in AFQS Configuration ⇨ System Settings (AFQS Server Port and Asynchronous Content Port parameters); these port numbers have to be opened on the application server and on the web server respectively.
Access denied (displayed by browser)	The user has exceeded the maximum number of login attempts by repeatedly entering an incorrect password. Refer to the Resetting User Passwords section on page 44.
Incompatible TCP interface format (application event log error)	Run *matching* versions of AFQS Setup and AFQS Server Setup to ensure that all installed components are compatible.

Quote document is not generated.	• Check the application event log on the application server for error messages referenced 'AFQS'. • Check if the template used to generate the document conforms to the rules of using *merge fields* set out in the Quote Documentation section on page 40. • Turn off "Read Mode" in Word for the user profile used to generate documents.
Word cannot start the converter mswrd632.wpc (displayed by browser when opening a document)	On affected workstation, delete the following registry subkey: • For 32-bit versions of Windows: HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Shared Tools\Text Converters\Import\MSWord6.wpc • For 64-bit versions of Windows: HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Microsoft\Shared Tools\Text Converters\Import\MSWord6.wpc
Pop-up error messages do not close in Google Chrome.	Turn off hardware acceleration via Customize and Control Google Chrome ⇨ Settings ⇨ Show advanced settings.

Abbreviations

ABR	**A**ustralian **B**usiness **R**egister (abr.gov.au)
AFQS	**A**sset **F**inance **Q**uotation **S**ystem (afqs.com). Multi-user lease analysis software product used for quoting on hire purchase and lease types of finance, yield analysis, performing lease, loan, hire purchase and cash purchase comparisons and other related tasks.
DLL	**D**ynamic-**L**ink **L**ibrary. Program file implementing common functionality that can be shared by a number of applications.
HTTP	**H**yper**t**ext **T**ransfer **P**rotocol. Communication protocol used to transfer information between web servers and clients.
HTML	**H**yper**t**ext **M**arkup **L**anguage. Markup language used to define pages for the World Wide Web.
IIS	Microsoft **I**nternet **I**nformation **S**ervices.
ISAPI	Microsoft **I**nternet **S**erver **A**pplication **P**rogramming **I**nterface.
MIME	**M**ultipurpose **I**nternet **M**ail **E**xtensions. Internet standard that describes message content types.
PDF	**P**ortable **D**ocument **F**ormat by Adobe.
SMTP	**S**imple **M**ail **T**ransfer **P**rotocol.
SSL	**S**ecure **S**ocket **L**ayer. Mechanism of encrypting data sent via the Internet.
URL	**U**niform **R**esource **L**ocator. Addressing scheme used by the World Wide Web.
XML	E**x**tensible **M**arkup **L**anguage. Describes a class of data objects called XML documents which are stored on computers.