



## Technical FAQ for Dolphin Software's PQF forms suite

As desktop software, the PQF suite is immensely flexible, easy to deploy, and has a strong set of email-related features compared with other electronic survey or electronic forms tools. With PQF software you can-

- rapidly design and create electronic forms or questionnaires
- distribute forms to your audience
- automatically design and construct a database or spreadsheet based on each form's design
- automatically collate securely encrypted responses by email into that database
- your results are ready for reporting, analysis and decision making

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## 1. Why are PQF forms more reliable than browser systems ?

Because “the mail must get through”! Email is 100% reliable between any two points.

If it can't get through immediately, it will re-try.

The same cannot be said of a browser based session, whether across the public internet or a corporate intranet. Interruptions are more frequent on a public internet connections than on corporate intranet networks, but as any corporate user will testify, unreliability issues as detailed below occur on corporate intranet networks.

- The main cause is web server and proxy server time outs. If a user takes too long to fill in a page (ie is called away, answers a phone, etc), the servers will time out.
- And a browser uses a “stateless” connection, so if the user takes too long to fill in a page in a multi-page session then the session is lost, and the user is unable to recover and re-submit answered pages, and must start again.
- Add browser time outs into the mix. Unlike “off-line” sessions using email, the browser is very busy formulating each page. The construction of the page on the screen relies on multiple ‘objects’ (HTML code, GIFs, JPEGs, WAVs, Cookies, Java, ActiveX, etc) each being downloaded, and often local objects (plug-ins, etc) must be found on the local PC and linked in.
- This means a user's socket session is busy downloading these objects (often 20 or 30 per page), the local PC is busy caching these downloaded objects, searching the local PC to link in local objects, and formulating the page on the screen, while maintaining the link to the server.
- At this time if either the server, the network or the local PC take too long to do their parts (and they are all multi-tasking and serving other demands) the browser simply times out.
- Often run-time errors occur on ASP generated pages, or local objects cannot be found to enable page completion adding to the reasons for failure.
- Errors can also occur due to the stateless nature of the sessions; each page in a multi-page needs to carry a cookie backwards and forwards between the server and the browser for each page – the cookie identifies that each page is part of the same session- one more thing that can get lost and go wrong!
- To complete the picture, each page of the session is submitted separately to the server and is held by the server until the last page is received; at that point the server collects all the bits together and updates the database. This updating of the database is near perfect, but the “collecting all the bits together first” part can fail without the possibility of recovering the full data from the now closed session.

Compare the above to using PQF technology with its simple, inherent off line capability.

In an “off-line” session, all pages are read from a single document (a PQF file), and the final “Submit” causes a single PQF response file to be transferred via email in an integrated single process that reads the data in one chunk and issues a single update instruction to a data base.

This is why a PQF Viewer running a PQF document, and using email, leaves browser based competition for dead.



## 2. What's so great about being "off-line"?

Workflow analysis has indicated that fewer than 20% of all transactions need to be on-line / or real-time. The remaining 80+% could happily occur within the next few minutes or even the next few hours.

As more paper based forms and surveys translate into electronic format, this ratio is increasing rather than reducing, as many of these newer additions have no on-line / real-time requirement.

The rush to the web, and other thin-client technologies, has maintained the pressure to be on-line, while moving away from the earlier "n-tier" processing model (advocating sharing transaction tasks over a range of processing tiers) to now firmly place the complete load on the central server.

And as all the real processing is happening on servers, networks connecting client PCs to servers requires significant upgrading to cope.

While the cost of PCs is falling rapidly, the cost of servers and required network infrastructure is not falling at the same rate – they are regarded as more 'high-end' equipment. Thus this on-line / real-time trend comes with a high price.

Using PQF Viewers for an asynchronous survey and data forms capability, rather than the typical web-based equivalent, cost savings for an organisation can significantly add to the more obvious benefits of the product such as fast prototyping, no programming and no server set-up costs.

## 3. Why do I need a PQF Viewer?

The PQF Viewer, like the web-browser or Adobe's PDF (Acrobat) Reader, provides a uniform method of presenting data – specifically forms data.

Additionally the PQF Viewer supplies a uniform method of transmitting email responses from PCs running a range of heterogeneous email systems.

Corporate users on IBM Lotus Notes, Microsoft Outlook, and Novell Groupwise, run the same PQF Viewer program as small-business users on SMTP systems (like Outlook Express, Netscape Messenger, Eudora, etc). Dolphin Software's HTTP version even provides consistency to users of web-based email such as Yahoo and Hot-mail.

PQF Viewers are free and freely copy-able and, like Adobe's PDF Reader and the web browser, are installed once on user PCs.

## 4. What impact does the PQF Viewer have on PC workstations?

The PQF Viewer is designed to have the lowest possible impact on a target PC. With that in mind, the PQF Viewer keeps all its settings in a tiny configuration (INI) file, resident in the same directory as the PQF Viewer executable.

The only impact of the PQF Viewer on the PC's system registry is to register the **"\*.PQF"** file extension ,enabling the PQF Viewer to be activated by the user double-clicking on a received or desktop resident PQF file.



## **5. How reliable and stable is the PQF Viewer software?**

All Dolphin Software products are statically linted using Gimpel's PC-Lint. After static linting the software is dynamically tested for memory leaks and pointer overruns, by exercising it through white-box testing scripts while NuMega DevPartner is running.

The forms driver side of the software is driven through operating-system standard dialog technology for reliability and consistency with operating-system changes.

All modules are written in C++ using Microsoft's standard MFC OS wrappers, calls to all email systems are through the vendor's standard APIs (Application Program Interfaces), or through Windows standard WinSock layers for SMTP and HTTP communication. All database and spreadsheet access is through Microsoft's ODBC (Open Database Connect) API layer, or direct CSV file access.

PQF software has no dependence on external DLLs (apart from standard DLLs within the operating systems or the client email software). Dolphin Software owns the rights to all source code to enable complete control over the delivery of the product.

Dolphin Software's corporate PQF Viewers have been field tested across the broadest range of fat and thin PCs.

The PQF Viewer for IBM Lotus Notes is designed to tolerate multiple installs of different versions of IBM Lotus Notes, bad IBM Lotus Notes registry entries (usually resulting from multiple Notes installs), and numerous copies of the Notes.INI file present on systems.

Various Standard-Operating-Environment (SOE) entries in the PQF Viewer's configuration file can be set to control its behaviour for ease of SOE roll-out and deployment.

Dolphin Software's corporate PQF Viewers (IBM Lotus Notes and Microsoft MAPI) have been tested by the Northern Territory's Government's desktop outsourcer Fujitsu Australia, and are part of the Northern Territory's Government's CAT#1 SOE since November 2003.

Caltex Australia has also taken advantage of the SOE option, again for the IBM Lotus Notes environment.

## **6. Can the PQF Viewer code be accessed for security assurance?**

Access to the full source of the PQF Viewer code is under a Non-Disclosure contract. The only restriction to viewing the code is that the encryption and decryption routines will be removed or obscured.

## **7. How secure is Dolphin Software's PQF file format?**

Unlike HTML or XML transmissions the PQF file is secure in both directions – outgoing from the Author and incoming to the Collator.

The outgoing PQF file is encrypted to prevent question and collator addresses from being viewable. The first 8 characters of the file are unencrypted so that the PQF signature and document version can be freely ascertained through Notepad, WordPad etc.



The response document (SVR) is also encrypted, so that any program other than the Collator module cannot intercept answers to the questions.

PQF files contain no executable components and therefore are allowed through email firewalls such as MimeSweeper, MailMarshall, IronMail etc.

## **8. How does PQF Viewer technology fill the IT resource gap and reduce IT costs?**

In the many corporate IT environments, “decision support” software applications are often sidelined, take too long to be scheduled or implemented internally, are perceived (by IT) as being of relatively little value, or to come at too high a cost to be worthwhile. Core business functionality and network connectivity on the other hand, is well provided for and maintained - workstations work, network servers serve.

The PQF system provides an immediate cost effective solution as it:

- is in the province of the expert business user,
- requires no programming and no server set up, as it uses email, and
- rapidly creates forms and their associated databases (ready for automatic data collation) –

Therefore business units using the PQF system are self supporting and place minimal demand on the typically overstretched IT divisions, while achieving end results quickly and easily.

The only support an IT department may need to provide is in standards for maintaining integrated business intelligence across an organisation (common field names and field sizes for corporate data).

Standard features (requiring no programming), include -

- simple branching from option buttons,
- mandatory fields,
- creation of a data structure based on each form’s design (in the data base software of user choice),
- alignment of data base field names to corporate data warehouse requirements,
- multiple response collation points for partners / stake-holder databases,
- selection of unique or non unique responses per respondent,
- and if unique if to keep the first or last response,
- automatic email confirmations indicating receipt of response,
- setting respondents name and email address to be anonymous or not
- for end audiences, data choices can be simply selected by clicking a check box or selecting an entry in a drop down list, creating a very cost effective solution for survey and forms data capture needs.

## **9. What are the copyright and license restrictions?**

PQF Viewers are freely available and are freely distributable.

The PQF Author and PQF Collator modules require licensing to produce unrestricted PQF forms.



## **Addendum 1: How does the product work?**

The desktop application suite has three modules - PQF Author, PQF Collator and the PQF Viewer.

- The Author or design module produces the PQF files which are either distributed by email, obtained from the intranet or resident on the desktop as part of the SOE. It also produces the unpopulated structure of the data base designed according to each form in the correct location on a PC or LAN, waiting for automatic population with return responses
- When audiences or respondents double-click on PQF files the PQF Viewer is launched processing the PQF form. The audience's responses are captured and emailed to the embedded email return address of the PQF Collator module (or addresses, as multiple response collation points are supported).
- The PQF Collator module works with Microsoft Outlook (Professional) or IBM Lotus Notes, automatically reading the in-box and processing the results into the selected database or spreadsheet via Microsoft Office's ODBC interface.
- The PQF system operates with maximum security - in addition to using encrypted files via email, data reside at all stages on the PC or LAN, not on the internet or intranet.

For more details visit - [www.dolphinsoftware.com.au/index\\_software\\_howitworks.htm](http://www.dolphinsoftware.com.au/index_software_howitworks.htm)