SIR REPORTER

The Newsletter for SIR UK Users

Contents

Editorial

Welcome to the first 2006 issue of Reporter – and a belated Happy New Year to all our readers. This issue launches the 2006 International User Conference which will take place in Stratford-upon-Avon in June. The conference is a real must for all SIR users and we are hoping to see as many of you as possible. It's also a wonderful central location for theatre, sight-seeing and shopping – so bring your partner and stay for the weekend! Lots of detail in this issue and more on the sug website.

By the time you read this SIR/XS will be released for Beta testing. Some intrepid users have been using an Alpha version for live running for some time – so the Beta promises to be pretty good. If you get the chance do try it: it's the only way to iron out the wrinkles. There are brief details of the new features in this issue with more detail on the SIR Oz website – and downloads available for trials.

Elsewhere in this issue we have a write-up of the conference in New York last year. A big thank you goes to Adrian Hodgson for gathering this together – like most of our readers, I missed the conference and this is the best way to catch up.

Kathy Brooks
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SIR is at http://www.sir.com.au
UK SIR Users Group is at http://www.soton.ac.uk/~sug

Chairman's Chat

Happy New Year to you all.

This is the year when we see SIR/XS released. I've been testing an early version for a while and it's got some really great new features. There's a short list of them in this issue but you really need to try them out yourself if you can.

We did not have a UK conference last year – instead we concentrated our efforts on the International Conference in New York which was a great success. But this year we want to make up for that with a really good International Conference here in the UK. We've picked Startford-upon-Avon which seems to be greeted with equal enthusiasm by both the UK and international users – and we've picked a particularly historical and central venue for the conference. With XS released by then, Tony Reardon from Australia offering training, and a social programme that includes a visit to see the RSC performing Romeo and Juliet – what more can you want? BOOK NOW!!

Don't forget to visit the user group website or the SIR website at *http://www.sir.com.au* to get details of new releases.

Dave Doulton

Upi Patel
5th December 1949 – 1st February 2006

It is with great sadness that we have to announce the death of Upi Patel.

In 1978 Upi, then a manager at SIA Ltd, bought the first license for SIR in the UK. SIA (now ORC International) is still using SIR to this day. Upi founded SIR (UK) Ltd in 1985 to market SIR in the UK and was Managing Director of the business, later trading as Forvus, for over 20 years. Under his leadership, Forvus has grown to be a strong and successful business.

Many Forvus staff and SIR users have known and worked with Upi for over 20 years, and he was highly regarded by all for his technical ability, generosity and sense of humour.

The news obviously comes as a great shock to all who knew him, and we offer our condolences to Upi's family and friends.

SIR Users Conference and Training 28-30 June 2006

The Shakespeare Hotel, Stratford-upon-Avon, UK

The SIR UK Users Group is organising the 2006 International conference and is now taking bookings and proposals for presentations. The conference will take place in the historic town of Stratford-upon-Avon and run from the afternoon of Wed, June 28 to the afternoon of Fri, June 30. Tony Reardon will be over from Australia to give us both training and insights into SIR/XS; if there's demand, we'll also organise some introductory training provided, once again, by our own, estimable John Lemon.

The Shakespeare Hotel, which will host the conference, is one of Stratford's oldest hotels, and is certainly one of the most pleasant and exciting to stay in. Located in the heart of the town, it blends 21st century comfort with 17th century architecture and ambience, and provides an excellent jumping-off point for anyone who wants to explore the Bard's backyard.

To help you get started, the social programme for this conference includes a performance of ***Romeo and Juliet*** by the ***Royal Shakespeare Company***, as well as a guided historical tour of the town.

The Shakespeare Hotel will also arrange pre- and/or post-conference accommodation for those of you who want to extend your stay.

We already have short abstracts from three of our speakers (see below), but there are still slots available. If you'd like to make a presentation to the conference, please contact John Lemon (j.s.lemon@abdn.ac.uk)

If you'd like to book for the conference, please visit http://www.soton.ac.uk/~sug/confbook.html.

If you'd like to know more about Stratford-upon-Avon, http://www.shakespeare-country.co.uk/ is a good place to start.

If you'd like some more information about the Shakespeare Hotel, see http://www.findmeaconference.com/scripts/venuedetails2.asp?venueID=19246, for a 'virtual tour' (which will definitely work only with Internet Explorer) and some excellent pictures, or its main web page (http://www.theshakespeare-hotel.co.uk/index.asp).

SIR Suduko
Dave Doulton

Suduko is gripping the nation and one SIR user in particular. After his success with polyomino puzzles, Dave Doulton has now turned his vPQL skills to this challenging problem. Find out how he both creates and solves Suduko and each of the new variants as they appear. Eg:

								O
		N					I	
M						C		
	C	I		P				
				N			U	I
	P		O		U			
	U					T		
	O				T	I		G
				G		O	P	

Fill in the missing letters so that each letter occurs in each row, each column and each highlighted 3 by 3 square. As an additional aid a single English word occurs in one of the rows or columns.

Viva Las Vegas, using SiR to convert data from SNAP to Access
John S. Lemon

John was asked to help a new user of SNAP (questionnaire design software) to take the data from thousands of scanned forms collected from conference seminars, verify it, merge it with data from three Excel spreadsheets and present it as yet another an Excel spreadsheet for input into an Access data base. This all had to be developed before flying to Las Vegas to process the data while the conference was being held. The whole process had to be finished within hours of the conference finishing. SiR/ vPQL, and John coped with the situation even when the 'goalposts' changed on an hourly basis !!!

SIR development using object-oriented techniques
Randy Banks

This presentation aims to show how object-oriented programming (OO) methods can be applied to, and benefit SIR applications development. Although PQL is not an OO language, OO methods are general enough to provide discipline during development, and documentation of the end-product. The presentation will introduce OO concepts and the Universal Modelling Language (UML), and use them to build an application to export SIR/DBMS data into XML. No vPQL will be demonstrated or required, and any gripping will be at the discretion of the audience

SIR/XS has many major new features including:

- Extended syntax allowing names up to 32 characters
- Non-standard names
- Enhanced standardised syntax
- STANDARD SCHEMA and STANDARD VARS
- New Common Vars definition
- New variable documentation
- New write schema options
- Upgraded record schema modification
- ADD VARS, DELETE VARS, MODIFY VARS
- Multiple Data Files
- New Batch Data Utility features including CSV Input/Output
- New Journaling and Recovery
- New XML Procedure
- New GUI Debugger
- New PQL Server
- Regular Expressions
- Extended syntax on PROCESS CASE
- PQLForms update
- Encryption
- New GUI Controls

More details on all these are available on the SIR website, space only permits me to pick two personal favourites for more detail here (Ed)

Multiple Data Files
In SIR/XS, you can specify that a database has multiple data files, that is the .sr3 file is split into a number of files that may be in different directories.

The new DATA FILES command defines either a single data file or multiple data files. The command can be used to create a data file that can be in a different directory from the other database files and named something other than the database name with a .sr3 extension.
The command can be used to create multiple data files based on key values. If the database is a case structured database, the files are primarily defined by case id values. If the database is a caseless database, the files are primarily defined by record types. For example:

```
DATA FILES  'company.s31'
        FROM (500)  'company.s32'
        FROM (1000) 'company.s33'
```

Batch Data Input - CSV
SIR/XS can process Comma Separated Variable (CSV) files as input to the batch data input utilities. There is a new keyword CSV on all five of the data input utilities READ INPUT DATA, ADD RECORDS, UPDATE RECORDS, REPLACE RECORDS and EVICT RECORDS.

The input file is a text file with values for each record in a valid CSV format. The fields must be in the correct sequence that matches the sequence of fields on the database record. A file may either contain records for a single record type, in which case, specify the record type on the utility command or may contain multiple record types, in which case the first field on each input record is the record type.

SIR FILE DUMP now also can write CSV files and there is a new keyword CSV to specify this.

SIR/XS accepts existing maintained SIR2000/SIR2002 licenses. If you are using any older version of SIR please contact us for license details.

File formats have changed significantly in SIR/XS from older versions of SIR and are not binary compatible. You need to export databases and tabfiles using your current version of SIR and import these using XS.

Tony Reardon
SIR Pty Ltd

Training and International Conference 9-11 May 2005, New York

Powerpoint presentations for most of the papers can be found at

http://www.soton.ac.uk/~sug/conf2005/

Getting the Most from SIR Support
David Baxter

David presented some tips about the things we can do to get a quick answer and get on with the job. He confirmed that we can ask us for any sort of SIR help; technical advice, bug reporting, feature requests or general reassurance and help with things like recovering old or corrupt databases.

David and Tony like to know the full version number of SIR and the operating system e.g. SIR2002.20.37 WindowsXP Pro. The version number is available from the Help/About Sir… screen (or the startup message on master/sirsqls). You also need to be aware that sometimes because of paths, registered version, shortcuts etc. you may not be running the version you think.

It helps to specify if you are using command line options (e.g. from a shortcut, batch script etc)

An example program and output can help, as can some information about the database: a list stats, schema and verify may be enough but sometimes sample data will be required. If you have multiple questions consider splitting them into separate e-mails as one tricky question can sometimes delay responses.

One of the most important points to remember is that Dave and Tony need to be able to reproduce the problem in order to be able to provide a suitable workaround, and then to fix the problem and test the fix.

Timing
You can expect a support e-mail response around these times (SIR generally concentrate on USA in the morning and Europe in the evenings) with the more long-winded responses coming out in the 9:30-4:30 EST band. An instant response is not guaranteed but is more likely if timed well.

Last Sunday in March – Last Sunday in October

Sydney EST	UK (-9)	Western Europe (-8)	East USA (-14)	West Coast USA (-17)
06:00 – 08:00	21:00 – 23:00*	22:00 – 00:00*	16:00 – 18:00*	13:00 – 15:00*
09:30 – 16:30	00:30 – 07:30	01:30 – 08:30	19:30 – 02:30*	16:30 – 23:30*
21:00 – 22:30	12:00 – 13:30	13:00 – 14:30	07:00 – 08:30	04:00 – 05:30

Last Sunday in October – last Sunday in March

Sydney EST	UK (-11)	Western Europe (-10)	East USA (-16)	West Coast USA (-19)
06:00 – 08:00	23:00 – 01:00*	00:00 – 02:00	18:00 – 20:00*	15:00 – 17:00*
09:30 – 16:30	02:30 – 09:30	03:30 – 10:30	21:30 – 04:30*	18:30 – 01:30*
21:00 – 22:30	14:00 – 15:30	15:00 – 16:30	09:00 – 10:30	06:00 – 07:30

* Previous day (i.e. Sunday – Thursday)

If you need to have a dialogue on an issue you could use email, msn messenger or Skype during these times.
Support EMAIL: support@sir.com.au
Phone (9:30-16:30 EST) +612 9929 7466
David Baxter: david@sir.com.au
SKYPE: david_sircomau
Messenger: david@sir.com.au

Less Orthodox Uses of SIR

John Lemon

John presented six examples of what he described as less orthodox uses of SIR.

Creating multiple files from a single e-mail
There was a requirement to process the results of a web survey using SNAP that had been returned by e-mail. Initially John filtered multiple e-mails from multiple mailboxes into a single mailbox. The SIR PATTERN function was then used to detect the ** START SURVEY DATA ** and ** END SURVEY DATA ** and the OPEN command and date functions to redirect the survey responses to multiple response files.

Sir Schema and data from spss.sav
A visual PQL program was used to process output from the SPSS File Info and Descriptives commands, in order to automate the creation of SIR schemas. John had noticed a similar theme with other users (Michael Staley at ONS and Jon Johnston) and wondered if this was a hint for Tony.

Converting SPSS output to formatted data
A SIR program was created to convert SPSS output from multiple regression and correlation analysis into 30 input files of 20 rows by 15 columns. Two key advantages were a reduction in the errors which always occurred during manual retyping and also a saving in work as the application was required annually.

Analysing web access logs
John needed to determine the number of accesses to a particular web page retrospectively using a variety of web access logs in varied formats. The solution involved the use of a SIR PQL program and the use of the PATTERN function with a counter being updated, every time the web site URL was located in the web log.

Decoding XML for the Royal Society of Chemists (RSC) archives
The RSC had 195,000+ XML files to describe the contents of associated PDF files which were held in 56 folders with up to 70 subfolders. They had a requirement to create input files for a web based bibliographic package. The XML files contained strange symbols and phrases (e.g. ω) and some records contained multiple instances of these. John iterated towards a solution which involved a database, subroutines and visual PQL, via preliminary attempts using DO REPEAT and SUBPROCEDURES. The value of a programming approach was demonstrated when the target bibliographic software was changed part way through the requirement.

Merging raw data to give MySQL update commands

Staff and student records are held in a MySQL database of 18000+ members, these can be updated by a GUI interface which is OK for small changes but is not efficient for larger volumes. For example every year 2,500 students need to be added and the same numbers also leave. John told us how he set up a SIR database application with the source data held in tables which was then pre-processed using visual PQL.
The source data is supplied in varied file formats with no consistency format for field definitions such as name. John manipulates all this information to create a “best record” set and then uses visual PQL to create mySQL commands which can be run first thing in the morning (06:30) after the nightly backups.

Key Lessons

It’s essential to have an initial plan but to be flexible and to think outside the box. The SIR Functions are extremely useful, especially PATTERN, SBST, SRST, FORMAT and

NUMBR. During the development phase expect to iterate towards a solution, using small samples for testing with appropriate use of the WRITE statement and /or DEBUG with FULL MONITOR to check the contents of fields. Finally be prepared to accept that the solution may only be 99% successful.

From MySQL to SIR via ODBC

John Lemon

or "Hoist by his own petard (potentially painful)!"

Management statistics had suggested that the time taken to answer questions raised in incoming calls to the central helpdesk was getting longer in some departments. The call details were being recorded in a SQL Support works database. However the existing charts and tables were misleading as they didn't take account of the fact that calls can enter at any point and migrate to any department. The only times recorded were 'Call open' and 'Call close' and this didn't take account of movement between sub-groups. An initial answer was needed in 24 hours for a management meeting. John started by using ODBC and SPSS but ran in to a few problems. He arrived at a crude but effective initial solution for the meeting by saving fixed ASCII files from SPSS and creating a simple database in SIR with cross record functions.
John then became the victim of his own success (hoist by his own petard), as the management team then wanted more detailed analysis and weekly updates. The initial method had been tailored for one division and couldn't easily be extended or automated so it was back to the drawing board.

The next iteration that was partly successful was to use ODBC to go direct from SQL to SIR. The main problem with this was "truncated" SQL records because embedded Line feeds were being recognized as end of record by SIR. Significant information such as call transfers to another division was often at the end of the record so this wouldn't do, Help was also needed from Dave Baxter in order to get the ODBC working. This was the ODBC connection code that worked.

```
CONNECT conid SERVER 'ODBC'
                 DATABASE 'Supportworks ODBC'
                 USER     'train01'
                 PASSWORD  'train01'
                 PREFIX    ''
                 ERROR     errid
```

A further iteration involved post processing the records in SIR using visual PQL. This was needed for example to be able to split fields into part fields (e.g. a combined department and user code in SQL into separate fields in SIR). There was also a need to manipulate SQL Date/Time fields within SIR to split the time and date components into separate fields, as in the following example: -

```
COMPUTE TEMP468= COLVALS ( conid, statid,
   ROWNUM, 4 );
   TEMP4D = CDATE ( ( SBST ( TEMP468,1, 10 )
   ), 'DDIMMIYYYY' );
   TEMP4T = CTIME ( ( SBST ( TEMP468,12, 8 )
   ), 'HHIMMISS' );
```

Final thoughts

John would use ODBC again, especially with what he knows now, but he would avoid trying to merge two SQL tables within the ODBC query, preferring to read the two tables separately into SIR and manipulate afterwards with visual PQL.

Migrating from SPSS to SIR

Jon Johnson

The Centre for Longitudinal Studies (CLS) is an ESRC Resource Centre based at the Institution of Education. It provides support and facilities for those using the three internationally-renowned birth cohort studies: the National Child Development Study (1958), the 1970 British Cohort Study and the Millennium Cohort Study (2000). The data is collected in various ways, paper, CAPI and administrative data. The data is fairly complex with 100,000 variables and 18,000 participants per study.

Capi data collection

CAPI data collection has a negative and positive side. On the positive side data is pre-punched and pre-checked. Unfortunately on the down side data is less understandable and more complicated. As an example the recent data supplied for one sweep consisted of over 100,000 variables.

The majority of the datasets are supplied in an SPSS format, but this is not an ideal environment to manage such data. SIR is an ideal environment to manage this data.

Jon's approach

The source spss file is parsed and this grabs variable names, value labels, data values etc. Jon then looks up a configuration file for some batch data input settings, and checks if the job involved is setting up a database or just adding a new record. Field format conversions are covered where required for time, date, and scaled vars. The program writes out a warning if there are more than 3 missing values or a range of missing values. The final stage is to write out a SIR schema.

The command that Jon uses is as follows: -

```
python spss_parser.py -f <input filename> -s
   <sir config>
```

The SIR advantage

Once the data has been imported into SIR the data can be restructured. The next step is to extend to other datasets held in other statistical packages such as Stata or SAS going via StatTransfer -> SPSS portable format and go from there. The advantage of this approach is that it also creates XML to add to a data store – unfortunately (for Jon) this is in danger of being superseded by work being done by Tony on the new version of the software.

Heartbase – An evolution of SIR Functionality

Nick Gawrit

Nick Gawrit, President of Heartbase Inc., presented a paper on how changes in the SIR software functionality and industry requirements over the years have affected the *heartbase* application. *heartbase* has migrated across four versions of SIR over the last 12 years (SIR386, SIR40, SIR2000, SIR2002) starting out on a DeC Vax and currently on a Windows 2003 platform.

PQL Enhancements

PQL has received many enhancements over the last 12 years. Notable new commands that make a difference with *heartbase* are:

```
DISPLAY INFOBOX, DISPLAY YESNOBOX,  DISPLAY
   CANCELBOX
CURDIR(0), APPDIR(0)
DIALOGS, BUTTONS, check boxes, edit boxes,
   etc, Getitxt, etc
EDITFILE,  PQL ESCAPE
```

PQL has allowed the *heartbase* application to evolve from a character based screen design to a visually pleasing graphical user interface, without sacrificing the knowledge base built whilst learning the product. It has been particularly helpful that the core commands have remained constant throughout the product versions.

Secondary Indices

In the early versions of SIR, alternate lookups were only available when they were programmed by the user (using Case Zero). This caused many problems with synchronisation and locking of Case 0. Early versions of Secondary indices presented some problems with index corruption and concurrency. Today, *heartbase* uses secondary indices effectively with 5 record types replaced and a reduction of 25% in PQL event management code.

Nick's view about secondary indices is that "logical case structure, underlying relational structure, along with the new secondary indices gives SIR the ability to compete more effectively with other database software."

Datavisor's screen painter

Windows 3.11 started the migration from character based screen control to graphical interfaces. Tom Shriver developed the DVPainter program which has evolved as the graphical capabilities of the software have improved. The character based program had exit points and no mouse control. Today's GUI has exit points, mouse control and graphical buttons. Screen control is accessed via many trigger points, allowing developers to have total control over their screen appearance, feel, and behaviour.

Registry and Government requirements

Reporting registries (e.g. the American College of Cardiology, the Society of Thoracic Surgeons) and the U.S. government often dictate changes required in *heartbase*. Many registries require different logical views of the same data, and/or different subsets of the data and/or have multiple versions of their datasets active.

A recent requirement involved the migration of part of *heartbase* from version 2.0c to 3.04 whilst allowing the end users to access both versions. Three methods were considered: -

- Create a new database for each version
- Add all the new data points to the old application
- Create a way to logically see the data points for each version in one database.

The third of these methods has been adopted and is known as filter views. This requires more PQL programming than the other solutions, but has the following advantages: -

- Easy to present different models in effect
- Easy for users to comprehend
- Easy to enforce parent/child relationships
- Easy to move the same data from one view to the next
- Maintains all the longitudinal history

This works by combining an event manager with a screen painter. The Event Manager allows a way to navigate the relational database using folder concepts, links to various PQL subroutines, and Secondary Indices. The result is that all patient data can be managed from the event manager, including data collection, data changes and deleting data.

Impact on *heartbase* Data Model

There has been a need for the *heartbase* data model to evolve since 1992 with changing demands, the new features of SIR, regulatory changes, and user input. It has been important to design with the future in mind and to give particular attention to key fields (Case and SORTIDs), sorting out like types of information, speed issues, and whether to normalize the data (the types of users affect this).

Report writing with *heartbase*

Nick Gawrit

Nick presented a paper on the various report writing tools that have been developed for *heartbase* users.

To speed up the running of reports, the system temporarily disconnects MASTER whilst the reports are running. Many of the report sources are placed in the SIR defined “Start in” directory.

Nick talked about four main types of report.

Query Tool

The Query tool allows users to pick fields by record type using an interface with the Datavisor screen painter.

Reporting elements are stored in a text file and are customizable. Report output can be directed to SPSS (by default), or to Excel or SAS using the familiar components of these packages, like statistics, summarization, and graphs. Queries are automatically created based on the date path the user wishes to utilize (procedure or discharge date). Queries can be saved to a PQL file so that they can be run again.

Ad-hoc reporter

The ad-hoc reporter allows users to specify any fields and any order of field navigation. The report output can be a report, tabulation, graph, or an export file and export options include SPSS, SAS, DIF, MINITAB, EXCEL, and CSV. The user can select all record types and fields or restrict the selection to those records/fields entered in a pre-defined “include” list. The basic list can be augmented by adding custom derived fields. The final dialogue screens are used to set parameters for output sorting and filtering.

Registry Retrievals for the Society of Thoracic Surgeons (STS) and American College of Cardiology (ACC) core datasets

These reports allow the entire registry data set to be output with a simple click of a button.

Users are given menu access to automatically generate frequency statistics for the registry core datasets or individually selected subsets from the user’s production databases. The user enters the date range desired, and the frequency reports for the STS and/or ACC core datasets are generated from the heartbase production database and displayed. Reports are available for the Catheter Laboratory Visit level, or broken down further to segment level and equipment level.

Category report

Category reports facilitate detailed report analysis by a category, like Length of Stay. One query produces standard report outputs and formats for packages like SPSS. Frequencies are produced for many of the data variables in the report. Many of these reports enable analysis by type of operation complication and comparisons can be run by network and hospital. Summary reports are available at consultant level.

Security and Firewall Issues

David Baxter

Dave talked about accessing your database through a network whilst keeping your data and computer secure.

Gateways and Firewalls

The gateway connects one or more computers on an internal network to the Internet. A gateway consists of a connection to the internet (e.g. a modem), or an integrated device for diverting messages to the appropriate computer (hub/switch/router). Most modern broadband modems are a gateway with integrated switch and firewall. WindowsXP service pack 2 has its own firewall as do other modern operating systems.

The following are some of the ways SIR can be used over the Internet:

TELNET

If you want to logon to a computer and enter commands using TELNET from your home computer through to your desktop at work then you need to set your firewall to forward messages from a port, say 3023, to your work computer’s TELNET port 23 (standard). This essentially unblocks port 3023 in your gateway's firewall. You may also need to unblock port 23 in your work computer's local firewall.

You will also need to start the TELNET server on your work computer. On WindowsXP professional this is done via Services in the Control Panel.

You will also need your Gateway's IP address (A quick way to do this is go to http://www.whatismyip.com/)

Back at home you can start TELNET and connect to this address using the port you mapped to 23
(telnet myexternalip 3023):

If you need to open several computers in your internal network to TELNET then you map different incoming ports to port 23 on each of the machines. You then need to remember which port goes where.

Once you have a TELNET session you can run batch jobs or data entry (using the terminal version of SIRForms - SIRFormsc). Dave Doulton's simple but effective SIRAPI creation sirdbmse is designed for use with TELNET.

TELNET operates through the same password system as the rest of the operating system. If you are using TELNET it is important not to have easily guessable passwords. You can tighten the security by not allowing certain users to have TELNET access.

SIRSQL Server

This lets you connect to a database remotely using ODBC. The default port for sql server is 3050.

The SIRSQL server runs with the permissions of the process owner. The passwords given to the server by incoming connections are not used for system security purposes, but to identify individual users when more than one user is connected. If you were opening the SIRSQLs port then you would want to ensure that all databases that the user that starts the server has access to have appropriate database password protection.

HTTP and its CGI

This lets you run programs remotely via a web browser. You can use SIRWEB.ISA or SIRWEB.CGI to build SIR applications to extract or update data through the web. The default port for HTTP web access is 80.

HTTP servers will sometimes allow you to set the user whose permissions are used to run CGI programs. The default is a user who has few rights beyond being able to execute programs in the CGI directory. You could use ISS to make you login before you can execute programs in a particular directory. Apache does this through suEXEC
(http://httpd.apache.org/docs/suexec.html).

If you are using the sirweb.cgi or sirweb.isa programs then you can also code some security in PQL by using the CGIVARSV functions to identify the user (and ask for a password) before executing the bulk of the program. See CGIMENU.LOGIN in the CGIMENU example.

CGIMENU

This example application demonstrates the need for security. When properly installed this sirweb.isa application can be used to control sir database and other files remotely via a web interface – it can also be used to maintain its own source code as you can edit and run procfile members with this system. This example will only work on windows http servers (as sirweb.isa is only available on windows).

- Install Internet Information Services (IIS).
- Don't map anything to port 80 on this machine from the gateway, which will ensure that only your internal network users will be able to access the application.
- Unzip CGIMENU.zip into c:\inetpub\wwwroot\ (You can obtain this by e-mailing david@sir.com.au)
- Configure the sir-cgi directory to be read and execute.
- Set the user to basic authorization or integrated windows (the latter won't work from non-windows clients).
- Start your Internet browser and go to **`http://localhost/sir-cgi/sirweb.isa?sirapp=sysproc.cgimenu.run`**

You will be prompted for a login from the server – use your windows login and password on the server machine. Then there is another prompt, this time from the sir code for a name and a password. The password is APPLE05.

SIR web based leave/ absence management system

Dave Doulton

The paper based system had been running for at least 26 years and was causing problems for everybody due to the time the paper took to circulate the several buildings at the University. An interim replacement system was needed for recording absence for annual leave, sickness, doctor's appointments etc. and who gave permission.

Other problems with the paper based system were: -

- If you wanted leave at short notice the permission could take several days if not weeks to return.
- People going off sick after a daily summary email were only known by the admin staff to be absent.
- Staff who did not usually receive the summary email had no way of knowing who was off sick.
- Booking leave from the next leave year caused all sorts of problems with how many days you had left.

Dave described his replacement web based system using sirweb.cgi. This is a multi-user system that does not use MASTER. As all writes to the database are quick each action tries to attach the database in write mode and waits if this fails for up to 30 seconds. The database is case-based with the day as the case id, with the cases for the next 2 years set up for all working days (excluding weekends, public holidays etc). Bookings are made for half days recording the person's username, who authorised it, what type of leave it is and when it was booked. Completing the form saves the details in the request record, displays the request to the user, sends an e-mail to the line manager with the request for approval or rejection, and finally, the decision is e-mailed back to the user.

Give the users what they want

As soon as it went live Dave was inundated with requests and suggestions for changes and he still is: -

- Can we have a calendar to choose the dates we want rather than having to type in dates
- Don't show other staff the number of days I have had off sick, or that I am on compassionate leave
- Let me confirm my request instead of sending straight to the line manager (because I make mistakes)
- Tell me if my line manager is going on leave soon so I can choose a different manager.
- Show me my outstanding requests/ include outstanding requests in totals of days left.
- Put a cancel button next to future leave bookings - so they can be cancelled without filling in all the information again.
- Attach a calendar event to the email so I can easily record the leave in my Outlook Calendar.
- Show me who on my staff is off from a given date/ group my staff on the display of who is off.
- Show me who on my staff is off around the dates requests are being made.
- Show me the outstanding requests I have still to process with a link to call up the request form.
- Let me forward a request to another manager if they are more appropriate or I have been chosen in error.
- Send out a list daily of who is absent to a list of managers and other interested parties.
- Automatically carry sick over to the next working day.
- Report quarterly on sick leave by person with number of occurrences and totals for the year.
- Add an optional information field / can we have real names not userids.
- Can we amend peoples starting entitlement and carry over.
- For salaried staff include non-working days (i.e. weekends) in the count of days off sick.
- Remind me of people who are part-time / handle part-timers leave/absence correctly!!!

Most of these have been implemented. The handling of part-timers correctly is still in progress and may never be fully satisfactory in the case of one person. The system now includes the three original records with some extra fields added, a record detailing who a manager is interested in and in which group they fall, a second database (MUD Master User Database) which can be attached to get real names, and an included file containing a recode to mark the few part-time staff.

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