KISTERS Australia News

April 2014

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From The GM's Desk

By Bill Steen, General Manager, Kisters Pty Ltd

Welcome to the first newsletter for 2014. Is it just me or are the years flying by?

Earlier this year we saw several of the KISTERS staff from Australia attend the annual KISTERS technical and management meetings held in Germany. As in previous years it provides KISTERS staff from around the world the opportunity to get together to discuss both global industry trends and projects.

One interesting presentation was a recent web portal project in Europe where the government agency required the system to handle in excess of one million users per day during a flood event. Which supports the phrase coined in the 1989 movie Field of Dreams, "If you build it, he will come". And as we all know more and more people rely on technology and expect to see information in near real time and accessible in every known multimedia format. As soon as you start publishing data end users become reliant on it.

Behind the scenes the mechanics of actually getting data ready to be supplied in a variety of reports and plots, plus the ability to upload and download data on the web is a complex beast. For starters you need to acquire the data, possibly undertake some quality assurance, massage the data and then output it into the required format. Some of the larger KISTERS Australian, and international users have this mastered, with one authority managing 21 million water data files containing more than four billion time-series observations.

Yet as soon as a data point doesn't appear on a web site due to some act of God, communication issue or computer failure, the general public are on the phone asking why! If only the public knew about the complexity in producing a single or multiple time series report or plot. This type of client management has necessitated agencies to implement rigorous procedures and processes to ensure they meet the increase demand on currency of data on the web.

Interestingly in terms of internet usage per population between 2000 and 2012, Australia was ranked at 25 with a staggering 82.3% percentage of individuals using the Internet [NZ ranked 10 with 89.5%]. Which goes to show that our dependency on the internet, data and information rules our lifestyles.

How people are accessing the internet is also mind blowing. Statistics provided by John Hayes at last year's KISTERS User Group meeting indicated that 59% of adults aged 19 years and over go online wirelessly on a regular basis. In 2014 it is anticipated that the global number of active cell phones will reach 7.3 billion, currently there are approximately 6.8 billion active cell phones. The world's population is

approximately 7 Billion. Australia sits 38 on the list of mobile phone users with 133 mobiles per 100 people [NZ ranked 58 with 107 mobiles per 100 people].

So where does this leave us, the data providers who need to address and satisfy the ever increasing demand for instant data? As mentioned earlier KISTERS is addressing the user requirements to ensure systems don't crash when demand peaks during critical operation periods, KISTERS are providing ongoing R&D into better underlying technologies, whilst working with our clients to streamline the process to convert a single data point into information that the general public can understand and utilise.

Bill Steen
General Manager
Kisters Pty Ltd

KISTERS and International Standards

KISTERS are working with the OGC, BOM and CSIRO on an experiment to make ratings, gaugings and sections available via a web service over Hydstra, as part of trying to standardise the exchange of ratings, gaugings and sections via WaterML2. The development of the standard is occurring through the Open Geospatial Consortium Hydrology Domain Working Group.

When the initial experiment is complete the project should result in a web service available via Hydstra/WEB to make this additional information available in real time to interested parties.

You can find out more about the Hydrology Domain Working Group at http://external.opengis.org/twiki_public/HydrologyDWG/WebHome.

KISTERS' Award-Winning Paper On Hydropower System Optimisation

Best Technical Papers awards were given to the strongest technical papers presented during HydroVision International 2013 in Denver, Colorado. The paper "Optimization of the Hydro Power Generation System at TransAlta" by KISTERS took third place in the category "Project Management & Operations".

The article deals with the implementation of KISTERS' resource optimisation software BelVis ResOpt at TransAlta, a Canadian power supplier, for a hydropower case. The organisation utilises BelVis ResOpt to optimise its 800 MW hydro power plants.

The superior economic potential of deploying the software results in cost savings, increased profits, and minimised risk. The innovative software based on an advanced mathematical kernel finds the best possible decisions taking into account all boundary conditions (i.e. technical, legal, economic and other considerations). BelVis ResOpt calculates, analyses and assesses a series of scenarios each day, and delivers the best possible solutions including recommendations that allow TransAlta employees to make decisions quickly and with confidence. They no longer have to spend time with data analyses and assessments of Excel data output, and can instead concentrate on their individual areas of expertise.

Contact Massimo Antinarelli for more information on ResOpt and its application to energy and water systems optimisation.

Annual Meetings in Aachen

In the middle of a German winter Bill Steen, Peter Heweston, Chris Michl and Trevor Magnusson ventured to Aachen in early February for various meetings traditionally held at that time of year. KISTERS runs three overlapping meeting streams – Marketing, Technical and Consultants - and each of us attended different streams, though there were some common sessions.

It's always a worthwhile experience getting together, both professionally and personally. It's vital for us in the Antipodes to spend quality time with our northern colleagues both in the conference room and in the pub – and a lot of both was duly carried out! Aachen even put on decent enough weather this year, with no snow and not much rain.

Hydstra Training in South Africa

By Damian Skinner

In February I spent two weeks in South Africa at the Department of Water Affairs delivering a range of Hydstra training courses. I presented courses on Administering Hydstra, Advanced Hydstra, MODSYN, and brief introductions to Hydstra/WQ and Hydstra/GW – it was a busy couple of weeks! Our African agent Gina Gaspar ably assisted me during the training courses, and I couldn't have coped without her, particularly while delivering Advanced Hydstra to 21 people. Gina originally worked for the Department, and was present when we first installed Hydstra there in 2002.

The training facilities at the Department's brand new purpose-built Training Centre at Roodeplaat were excellent, with modern computers and excellent catering.

Damian Skinner

Gina Gaspar and Edeline Mashabela

Training Facility at Roodeplaat

Lunch Break

Hydstra Product News

Backups and Data Loss

Yet again we need to emphasise the importance of good backups. Do not rely simply on the IT systems backup, as they are often unable to recover data from a long way back, or just one time-series file or a few database records. We strongly recommend that you regularly (weekly or monthly) take a permanent hard copy of your Hydstra system. Most systems will fit on a single DVD. If you are running a SQL Server system you can copy all your database tables to FoxPro tables with a single HYDBUTIL statement:

```
hydbutil copy * h:\hyd\dat\dbf\ s
```

Please read the Hydstra Help file topic Hydstra Backup and Recovery for more ideas on backup strategies.

Hydstra Patch News

A new Hydstra patch is released every Friday as a rule, and can be accessed via http://kisters.com.au/downloads.htm. You can read the Change Log document to see what patches have been made. You will need to contact us for the user login and password. Please include your HYACCESS.INI in your request email.

If you are planning to migrate your instruments system to 10.04 you should pick up a system dated after 1 Jan 2014 as the instrument migration scripts have had some serious work done on them.

Hydstra 10.04 Current Release

Hydstra 10.04 was released on August 16, 2012 and is now in production in most agencies. The main areas of change are a SQL Server version (at additional cost), the instruments system and the groundwater system, but there are hundreds of enhancements and features that should make 10.04 attractive to everyone.

We strongly recommend that you copy your production system to a test location, get it running there, and then do a trial upgrade. Only when you are happy that your local extensions and enhancements are working fine should you go ahead with a production system upgrade.

If you work closely with other agencies and trade Hydstra data with them you should liaise with them before upgrading. Time-series files have not changed between 10.03 and 10.04, but every database table has changed because they now carry additional auditing fields (DATECREATE, TIMECREATE, USERCREATE).

It is possible with care to downgrade most tables from 10.04 back to 10.03 using HYDBUTIL UPGRADE, but if you use instruments or groundwater there have been enough changes that HYDBUTIL UPGRADE cannot do the job.

If you use Hydstra/WEB you will need to liaise with Denby Angus about your 10.04 upgrade as he will need to be involved.

Hydstra V11 Beta Available

We have started loading a weekly beta release of Hydstra V11 onto the web. Please contact us if you wish to access it for evaluation and testing purposes. Initially we will limit access to the V11 beta to major clients who are able to set up a completely separate test system and who will provide us with feedback.

Hydstra V9 Unsupported Soon

If you are still running Hydstra Version 9 please redouble your efforts to upgrade to V10.04, as V9 will become unsupported when V11 is released. It is worth noting that Hydstra V9 will not run under Windows 7 or Windows 8, nor will it run under 64 bit Windows.

HYWDTF_OUT and AWRIS 2

The Bureau of Meteorology are updating their internal database AWRIS to version 2, and during that process there has been a flurry of changes requested to the way Hydstra delivers WDTF to the BOM. Some of these patches are minor enhancements to the WDTF specification, and some are minor Hydstra bugs that have only recently been uncovered. These patches have been patched to 10.04, but cannot easily be patched back any further. All agencies delivering data to BOM are requested to upgrade to 10.04 if they have not, and to patch their Hydstra system with a recent 10.04 patch dated later than 21 March 2014.

Problems with KISTERS Forum

Sadly over the Christmas break the KISTERS Forum (forum.kisters.com.au) was attacked by spammers and hacked. During the recovery process we lost the registration of many users, for which we apologise. Please re-register, and this time you will be prompted to use a strong password and a CAPTCHA, which will reduce the intensity of the spamming. We have also introduced bans on various free email domains used by spammers, including hotmail.com, outlook.com, gmail.com and many others. Please register with your own name and a corporate email address so we can recognise you.

Minor Migration to SQL Server Bug

It has come to our attention that users who migrated to SQL Server might have a minor problem with escaped characters in memo fields. For example if you had a memo field with a tab in it, the SQL Server version will have \009 instead.

We have developed a script FIXSQLMEMOS.HSC to rectify the problem – please contact KISTERS

Support for a copy.

HYDBSQL Enhancements

HYDBSQL.HSC is a tool that allows you to run SQL retrievals across either the Foxpro or SQL Server version of Hydstra. It has the capability to use conditional code to cater for the differences between SQL dialects, and the ability to pop up a PSC parameter screen to collect parameters for the retrieval. With a little imagination and some saved jobs it can become a significant reporting tool for Hydstra metadata. The latest version has been patched to V10.04.

Running Low Priority Background Jobs

Sometimes you need to run a long processing job on your desktop, Hydstra server or web server, but you don't want it to interfere with other uses of the machine. Windows supports priorities on jobs, and the easiest way to start a task with low priority is to use the Windows START command with appropriate parameters:

```
start /low /wait hyifd @[myifd]
```

will start HYIFD with low priority. It shouldn't interfere with your interactive use and will only run when there's nothing better to do.

If you want a bit more hustle but still don't want to use up the entire CPU, try /BELOWNORMAL instead of /LOW. LOW only executes during otherwise idle time – of which there may not be much if any.

Don't forget that most Hydstra programs support the */hide* flag which keeps them from popping up and stealing focus.

You can also lower the priority of a job once it has started running using the Windows 7 Task Manager. From the Processes tab right click on the task and choose Set Priority:

Note that lowering the priority of a job has no effect on the priority of any child processes it spawns, they will all start with Normal priority. For example if you want a whole HYBATCH job to run in the background you will need to ensure that every job step in HYBATCH.INI runs in low priority.

HYAUDIT Groundwater Integrity Tests

We have developed a Perl HYAUDIT test that checks aspects of the groundwater data in Hydstra/GW. While the tests might be quite slow they check many details of your groundwater data, including the following:

- Location of each bore is registered and within the HYCONFIG bounding rectangle (MINLAT/MAXLAT, MINLONG/MAXLONG)
- Depth Completed missing

- DEPTHFROM<=DEPTHTO in a pipe or lithology segment
- Gaps in the depth interpretation in various logs and records
- Deepest log segment exceeds drilled depth
- No CASING records found
- Deepest CASING exceeds drilled depth
- Overlaps or gaps in the casing interpretation
- Bores with no perforated CASING segments
- HYDMEAS records with no HYDRLMP datum
- HYDMEAS records deeper than completed depth
- HYDMEAS records earlier than first HYDRLMP record
- Elevation of HYDRLMP too far above/below SITE elevation
- Open casing and no screen details
- Closed casing and screen details present

We are happy to receive suggestions on further tests we should implement. The tests have been patched to 10.04. A sample HYAUDIT.INI entry might be as follows:

```
[GW Integrity Test]
Test Type = Perl Test
Return Type = Passfail
Short Name = GW Integrity Test
Script = hyaudit_perltest_gwintegrity.pl
cache outputs     = yes
cache output template =  &hyd-
logpath.filecache\gwintegrity\hyaudit_perltest_gwintegrity_%site%.txt
```

Mastering Perl Second Edition

The second edition of *Mastering Perl* by *brian d foy* has just been released by O'Reilly. It is a considerable revision of the original edition to bring it up to day using so-called Modern Perl constructs. Any serious Perl programmer could acquire this book and learn much from it. Beginners should start with *Learning Perl 5th Edition*, by *Randal L Schwartz*. You can purchase both of these books and many other Perl references in hard copy or electronic form from http://shop.oreilly.com/ or www.amazon.com or your local book seller. Other Perl books we can recommend include:

- *Programming Perl* by Tom Christiansen, brian d foy, Larry Wall and Jon Orwant
- *Mastering Perl* by brian d foy
- *Intermediate Perl* by Randal L. Schwartz, brian d foy and Tom Phoenix
- *Perl One-Liners: 130 Programs That Get Things Done* by Peteris Krumins
- *Perl Best Practices* by Damian Conway
- *Modern Perl* by chromatic
- *Mastering Regular Expressions* by Jeffrey E. F. Friedl

Overriding your Temporary Paths in HYCONFIG.INI

Hydstra uses a number of temporary paths for saving various bits of local information away. In V11 the paths include:

- TEMPPATH (C:\TEMP\) - the default destination for reports and plots sent to a file, etc
- JUNKPATH (C:\TEMP\TEMP\) – lots of short term jobs and files go here
- PRMPATH (C:\TEMP\PRM\) – last run parameters for all jobs are saved here
- PRIVPATH (C:\TEMP\PRIVATE\) – the location of private database work areas
- PRIVSLPPATH (C:\TEMP\PRIVSLP\) – private site list presets are saved here (new in V11)

Historically we recommended that you override these paths one at a time in HYCONFIG.INI through the

[Temporary Paths] section. However this is risky, as if you don't override them all you might get into trouble leaving some behind.

A much better approach is to use the [Path Prefixes] section to override all temporary folders with one line, as follows:

```
[Path Prefixes]
\hyd\=h:\hydstra\prod
\temp\=c:\temp
```

This guarantees that all existing and future temporary paths will be placed under the same root.

HYQUICKWEB – Free Static Web Site Generator

We have developed and patched to 10.04 a new program HYQUICKWEB, which is a technique for building a simple free static web site using a combination of HYBATCH, Dropbox and Google Maps. For modest numbers of sites and outputs HYQUICKWEB provides a free entry into the web world. Of course if you require dynamic outputs or complex requirements you should investigate Hydstra/WEB or some related technology.

HYQUICKWEB generates an HTML table listing sites and leading to HYBATCH outputs for those sites.

Alternatively HYQUICKWEB generates a KML that can be loaded into Google Maps:

Either way you can click on a site and see a list of HYBATCH outputs:

And these static outputs lead directly to HYBATCH outputs in text, HTML or PNG form:

Read the 10.04 Help file from a very recent patch (4 April 2014 or later) for more information on HYQUICKWEB.

Note that agencies with a Hydstra/TS or SVR licence are not permitted under their Hydstra licence to allow public web users to run Hydstra programs or obtain Hydstra data on demand by any mechanism. However publication of previously generated static output is licenced.

WISKI Product News

Support Email and Help Desk

Commencing in April the WISKI team at Kisters Pty Ltd (Vicky, Bruce and Chris) will provide specialised support for the KISTERS products WISKI, KiWQM, WISKIWeb and KiWIS. The phone number for support on these products is +61 2 6154-5200, and the email address is wiski-support@kisters.com.au. If you are engaging in particular dialog with Chris, Vicky or Bruce please cc the support box so a central register of issues can be maintained.

New Release Naming, Planning and Cycles

KISTERS is introducing a new release schedule in 2014 for the relevant KISTERS Water Products (WISKI7 and KiWQM). The main drivers behind the new release plan and schedule is to reduce the number of installed and delivered versions, to calm down the release and development process and to create more time for specifications and quality assurance. We would be very interested from the client perspective whether the change will ensure a higher quality of our products in the future.

This new release plan consist of three version trunks according to the distillation process of a good whisky:

- WISKI New Spirit … contains the hottest features and is used to integrate the newest platform distributions (like TSM, KiDSM). Also it introduces database update to the WISKI schema. The new spirit is not recommended for customers' live and production environments, however an installation on customers' test environment is possible and welcome. The anticipated release cycle is every 4 weeks.

- WISKI ... is the version installed in customers' live and production environments. It contains the regular bug fixes and feature extensions that require no database updates. It is the intended version to supply regular project deliveries. The anticipated release cycle is every 4 weeks.
- WISKI Vintage …is the version that can still be installed in customers' live and production environments. Customers who are not updated to a WISKI Version can receive regular bug fixes. The anticipated release cycle is every 8 weeks. The lifetime of the WISKI Vintage is at least 12 months. A new Vintage version is released on an annual basis in April.

The life cycle of the version above can be summarised as:

WISKI New spirit -> WISKI -> WISKI Vintage -> Decommissioned

From a customers' perspective KISTERS suggests:

- Customers with less requirement for new features shall update to the WISKI version and can continue on the WISKI Vintage stream until the second version shift is triggered. This procedure is good for customers who are planning to update once per year or less frequently.
- Customers with more frequent requirements for new features can stay on the current WISKI version and avoid the WISKI Vintage version stream.
- Customers/ Project which are closer to the cutting edge development (including the latest platform features) can receive an installation of the WISKI New Spirit on their test environment at any point in time.

Database Access Interfaces

WISKI offers various interfaces to allow external data access, while combining all the benefits of centralised data storage and decentralised post processing in one single product:

KiODBC: Access to WISKI time series data from any SQL-capable application

Export framework: Text format (e.g. .csv) exports of time series, tables, and reports

KiSCRIPT: An integrated script language for complete access to all stored data, allowing the creation of specialist export filters for proprietary data formats and more

WebServices: In conjunction with the expansion module KiWIS, data is called up from a locally or remotely hosted database via HTTP-based functions. Conversely, locally or remotely hosted WebService-capable databases can be imported to WISKI

JAVA API: A specialist interface for Java programmers, which allows access to Meta and time series data via pre-configured function calls.

Launchpad (Pad Functionality in WISKI and KiWQM)

Launchpad is a great new customisation tool that has been added to the WISKI and KiWQM user interface. Launchpad allows you to create very specific and targeted data access and functionality navigation for certain groups of end users. These user groups would typically be those that have a narrow focus or specific work flow within the system and therefore do not require access to all of the system's features. In fact the overwhelming number of options and data entry points within WISKI can at times be daunting. Launchpad can assist with user take up and acceptance when using WISKI for the first time, speed up work flow as well as reducing many potential support issues.

Launchpad turns the WISKI/KiWQM client into a series of push buttons with any given graphic that can be organised according to your needs. The functions behind the buttons can allow access to certain sets of data e.g. sites, stations, measuring programs, comparison lists, parameter types, taxa etc. or to trigger certain functions e.g. data import, export, analysis, reports etc. Data access can be further subdivided by different categories and functions can be started with predefined configurations.

Here are some examples from a Launchpad configuration that can be supplied by KISTERS:

Existing Launchpad configurations can be imported using the standard XML importer or you can customise your own. Users can either switch to Launchpad mode, or they can have a shortcut created that starts the system in Launchpad mode exclusively. For example

WISKI.exe /launchpad:xxx

Where xxx = short name of Launchpad container

Command Line Parameters for WISKI.exe/KiWQM.exe (TCA)

The WISKI.exe (TCA) can be called with the following command line parameters:

/batch:xxx

xxx = batch file
The application is executing the batch file and will show no GUI (Batch_Mode)
Can be called also directly from Main Menu->File->Administration->Batch

/launchpad:xxx

xxx = short name of Launchpad container
The application is started as Launchpad without WISKI Explorer

/dbadmin

The application starts as dbadmin application. This application allows (after a login with a database user) to modfify passwords and accounts. This can be used for adaption of database dumps to a new environment or to reset passwords in general.

/csvimport:xxx

The TCA EXE starts as a CSV importer of type xxx

/brm

The application starts as BIBER replication machine

/view:xxx

xxx = name of WISKI 7 explorer view
The application is started with the specified view

/target:xxx

xxx = BIBER|DIPS|KiWQM
The WISKI EXE behaves like the selected target

New Filter in WISKI/KiWQM 7.4

The WISKI filter represents a filter tool on the one hand, but at the same time it is also a query tool with the ability to process the result set.
The upper toolbar reflects these different approaches. In the first part there are two buttons for executing

the filter to the WISKI explorer and to save the current query.
In a second block the result set can be shown in a table grid, as a temporary selection in the explorer and as a geo referenced view in a map.
In the right the requested object can be selected and the count of the result set is shown. The selected object is only imported for the actions of the second block. The filter functionality is independent of the object (a condition for a parameter object is indirectly also a condition for a station).
Below the toolbar there is the possibility to restore a saved query or a last used query (not yet implemented). With the help of the x button the complete filter will be reset.
In the middle there is an area for entering filter conditions. There is a simple and complex filter approach. Whereas the simple filter is defined by its filter condition short names in the system settings (section *explorersettings*, item *simpleglobalfilter*) and all conditions are connected by an "and" expression the complex filter consists of single filter lines with more options.

Simple Filter

The entries of the simple filter are defined by a comma separated list of filter query short names in the system settings (*system/explorersettings/simpleglobalfilter*).

Complex Filter

Each filter consists of several filter lines combined by a logical "and" or "or"

In the first column you can select the filter object or the saved query option

- Filter object to be queried or a
- Saved query

In the second column you can select a filter query
In the third column you can specify the comparison operator
In the fourth column you can specify the comparison value
In the last column you can select the connection operator ("and" or "or")

With this concept you can mix filters for any filter object and retrieve the corresponding records.

There is a modal version of the filter used in a workflow without the button toolbar.

KISTERS On the Web

KISTERS technology is at the heart of an increasing number of customer web sites, whether they be based on Hydstra or WISKI web technology or their own web developers. You can visit a selection of client web sites via the link page at http://kisters.com.au/webpublishing.html.
If your web site uses KISTERS software please contact us with the URL and we'll add it to the list.

Hydstra Training

Training Schedule for 2014

Upcoming training courses will now be published on the KISTERS website at http://kisters.com.au/training.html.

The following training courses are scheduled for 2014:

Course	Duration	Dates
Using Perl with Hydstra	5 days	5-9 May, 2014
Administering Hydstra	2 days	27/28 May, 2014
Basic Hydstra	2 days	17/18 June, 2014
Advanced Hydstra	2 days	12/13 August, 2014
Basic WISKI	2 days	09/10 September, 2014
KiWQM	2 days	16/17 September, 2014
Hydstra Modelling with MODSYN	1 day	14 October, 2014
Basic Hydstra	2 days	11/12 November, 2014
Advanced WISKI	2 days	18/19 November, 2014

Courses will be held at the KISTERS Canberra office. If you are interested in attending a course please contact us via support@kisters.com.au. Training Courses may need to be withdrawn or postponed if there is not enough interest.

Administering Hydstra Training Course

On 27/28 May 2014 we have scheduled a 2-day '*Administering Hydstra*' training course at our office in Canberra. The course will cost $1500 (inc GST) per person. It is aimed at new Hydstra administrators or experienced administrators who want to keep up-to-date with the latest techniques. The topic list will include:

- General System Configuration
- Patches & Upgrades
- Managing Hydstra Users
- Configuring HYXPLORE Menus

- Database Configuration
- Time-Series Configuration
- HYGIENE
- Utilities for Bulk Data Updates
- Troubleshooting
- Routine Administrator Tasks
- Automating Routine Administrator Tasks
- Security
- HYTEST

Trainees will be expected to have experience using Hydstra at an advanced level. Please contact support@kisters.com.au to secure a place on this course.

Using Perl with Hydstra

On 5-9 May 2014 we hope to run an intensive five day training course on *'Using Perl with Hydstra*' at our office in Canberra, provided we get enough takers. The course will cover all aspects of integrating Perl into Hydstra, and will cost $3850 per person. It is aimed at Hydstra administrators who wish to raise their skill levels in working with Hydstra. The topic list will include:

- Hydstra Perl libraries
- CMD Scripting
- Perl batch jobs
- Perl pre-processors
- Perl post-processors
- Perl datasources
- HYSCRIPT
- HYDLLP and JSonCall
- Dealing with databases in Perl
- Dealing with time series in Perl
- Perl and XML
- Perl and MODSYN
- HYXPLORE dynamic menus
- OLE Automation

The course material is available in the Hydstra Help file under 'Using Perl with Hydstra', though it will be updated before the next course.

The prerequisites for attending this course are:

- Experience in programming another language, such as VBA, Fortran or C. We cannot teach you to become a programmer in a week, and if you have not programmed already in some other language this course will be beyond you.
- Completion of the four-day Programming Perl course run by Perl Training Australia. Perl Training Australia can be found at perltraining.com.au, and they regularly run basic Perl courses in Sydney, Melbourne and Canberra. Demonstrated equivalent prior knowledge of Perl will be accepted as a pre-requisite.
- Familiarity with Hydstra at the advanced user or system administrator level.

What we hope to teach you is how Perl can be hooked into Hydstra to extend its power and reach. What we will not be teaching in this course, except incidentally, is how to use Hydstra, how to program, or how to program in Perl.

Please contact support@kisters.com.au to secure a place on this course.

Training Courses

We are happy to provide training courses on any aspect of Hydstra provided there are sufficient people interested in attending. Please contact us at *support@kisters.com.au* with expressions of interest for any training requirements you have. We can provide training at your office or here in Canberra. Training in Canberra is based on a per-person per-day cost, provided we have sufficient people attending. Training at your office will be charged at our standard consulting rates per day for the trainer, plus a preparation day, plus travel and accommodation at cost. Courses we can offer include:

- Basic Hydstra
- Basic WISKI
- Advanced Hydstra
- Advanced WISKI
- Administering Hydstra
- WISKI Administration
- Administering Hydstra/WEB
- Hydstra Modelling with MODSYN
- Hydstra/SVR Server
- Ratings and Gaugings
- Exporting data to the BOM using HYWDTF_OUT
- Using Perl with Hydstra
- Groundwater Data Management
- Water Quality Data Management
- KiWQM (WISKI Water Quality Module)

Please contact us via support@kisters.com.au if you wish to attend. We will register you interest and notify you when the next course is planned.

Staff News

Bill Steen will be away for several weeks from 2 April recovering from hip replacement surgery. He will be back in the office once he can climb stairs on crutches, and hopes to be cruising on his Harley Davidson a few weeks later, all going well. We wish him a speedy recovery.

Vicky Isaac is back at work after having taken longer than she hoped to recover from a sporting injury. It's good to have her back in the office as part of the team!

Bill touring through the Dubai desert in 2013

The Hobart team of Vicky Isaacs, Trevor Magnusson and Callum Ramage. (Bruce Young was on leave)

Worldwide KISTERS News

You can keep up to date with all the news from KISTERS worldwide through the following links:

http://www.kistersnews.com/au/index.html

http://www.kisters.net/news.html

Information

This newsletter is published by Kisters Pty Ltd and edited by Peter Heweston. It is distributed using MailChimp (www.mailchimp.com)

Homepage: http://www.kisters.com.au

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