KISTERS Australia News

December 2015

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From The GM's Desk

By Bill Steen, General Manager, KISTERS Pty Ltd

Season's greetings. It's that time of year again and only seems like yesterday that we celebrated last Christmas.

As you will read in this newsletter and from discussion at KISTERS user group meetings the cloud became a focal point for many clients in 2015. However from KISTERS perspective this is not a new technical arena. For example multiple KISTERS clients have been utilising SaaS (software as a service) with KISTERS for over 10 years.

KISTERS more recently saw the opportunity when moving to our new head office to improve the KISTERS European data centre. The newly ISO 27001 and planned TÜV TSI (data centre) certified KISTERS data centre now offers clients the highest security standards, IT-Outsourcing (fully or only as a supplement to customers IT), Data services, 24/7 availability for IaaS, PaaS and SaaS, plus 24/7 Key Account Support for critical business processes.

KISTERS ten plus years of experience is now being drawn upon as other global regions enter into the various aspects of cloud related services. The New South Wales Office of Water recently engaged KISTERS to assist in moving HYDSTRA and HydroTel systems to the cloud. Earlier this year Auckland Council also engaged KISTERS to move their HYDSTRA system to the cloud. Auckland Council is presently migrating the KISTERS air quality product, AquisNet, into the cloud.

Water quality and biological data management has also been a major focus in 2015. Within the Australasian region KISTERS existing and new clients have embraced the KISTERS solutions, KiWQM and KiECO. On a global basis the United Nations Global Environment Monitoring System (GEMS) Water Programme, Natural Resources Wales (NRW) United Kingdom and Federal Office for the Environment Switzerland have implemented KISTERS water quality solution KiWQM.

The above is just a small example of the areas in which KISTERS have been active in 2015. 2016 is already shaping up to be just as busy.

From all of us at KISTERS we wish you season's greetings and a safe and happy New Year

Bill Steen
General Manager

KISTERS Pty Ltd

KISTERS Group Meetings 2015

The 2015 KISTERS User Group meetings were held in Canberra on September 8 and 9, and in Folsom, California the following week on September 14 and 15. An interesting variety of presentations was given to the groups, which split into two sessions on the second day, one for WISKI and one for Hydstra. Many of the presentations were recorded using Camtasia, and the presentations and recordings are available on the Australian web site at http://kisters.com.au/user_groups_aus2015.html and http://kisters.com.au/user_groups_usa2015.html . Please contact support@kisters.com.au for a login to download the presentations and/or view the Camtasia recordings.

The topics presented included:

C101 - Welcome and Year in Review - Bill Steen - KISTERS
C102 - Kisters Global Update - Klaus Kisters Bill Steen - KISTERS
C103 - Journey to a National Hydrological Database - BOM
C104 - Web-and-Widgets - Chris Michl and Callum Ramage - KISTERS
C105 - Cloud Computing and Outsourcing - Damian Skinner - KISTERS
C106 - Trends in Computing 2015 - Peter Heweston - KISTERS
C107 - DPI Water to Amazon - Tony Caine - DPI Water
C108 - Migrating a Hydstra Client to the Cloud - Phil White - iQuestCloud Hosting Kisters UGM 2015 - Phil
H201 - What's New in Hydstra - Trevor Magnusson - KISTERS
H203 - Real Time Data System Checks - John Hayes - DPI Water
H204 - WEBTEST - Testing your Web Site - Peter Heweston - KISTERS
H205 - Distributed System Monitoring - Damian Skinner - KISTERS
H206 - HYDLOG V11 Log File Analysis - Peter Heweston - KISTERS
H207 - Web Services over Hydstra - Peter Heweston - KISTERS
H208 - Hydstra Migration at NOW - Peter Heweston - KISTERS
H209 - What Good Hydstra Managers Do Revisited - Peter Heweston - KISTERS
H210 - Big System Architecture - Damian Skinner - KISTERS
H211 - Whats New in Hydstra WEB - Denby Angus - KISTERS
U105 - National Flood Interoperability Expriment - Dr David Maidment - University of Texas
U202 - PG&E Update - Matt McPheeters - PGE
U203 - Support Update -Dylan Evans - KISTERS
U204 - Continuous Water Quality Monitoring - Tom Mirti - SRW
W201 - Whats New in WISKI - Chris Michl - KISTERS
W202 - Whats New in KiWQM - Vicky Isaac - KISTERS
W204 - Utilising Logviewer in Daily System Operation - Rob Faulkner - BOM
W205 - BoM WISKI Use Case – Seasonal Streamflow Forecasting - Nathan Campbell - BOM
W205 - Using WISKI Data in the Bureau (EHP and FLOOKSKI use cases) - Joanne Sullivan and Nathan Campell - BOM
W206 - Experiences with the WISKI Water Quality Module - Daniel Harris - NSW Office of Water
W207 - WISKI operation at Seqwater - Mark Tan - Seqwater
W208 - Functions and Re-design of the Alarming Module - Vicky Isaac - KISTERS
W209 - Examples using the Launchpad - Vicky Isaac - KISTERS
W210 - Field Visits - Product Update - Chris Michl and Vicky Isaac - KISTERS
W211 - Web workshop - Customising the WDO Frontend - Chris Michl and Callum Ramage -KISTERS.docx

KUG Canberra

KUG Canberra

KUG Folsom

KUG Folsom

DPI Water Migration to Amazon

By Peter Heweston

For the second time in nearly as many months, DPI Water (formerly the NSW Office of Water) was obliged to migrate its complex water systems, this time into the Amazon cloud. The migration was brought about by a government decision to move the water function into a different department, and we had very little time to complete the task as the existing service provider was about to turn off their infrastructure.

The migration team of Tony Caine and many others from DPI Water, and Peter Heweston, Damian Skinner and Denby Angus from KISTERS re-convened and put in a massive effort to get everything going in the Amazon world. From a technical perspective everything went fairly smoothly under the circumstances, and given the right IT support we can recommend migrating to Amazon. We don't doubt that the move to other cloud providers such as Azure and Google would be equally successful.

The DPI Water system is very large and complex by our standards, comprising some 20 large servers involved in data acquisition, computation, database hosting, Citrix serving a large interactive user community, web publication, and much more besides.

Probably the single biggest thing to consider when excising a large system from its context and moving it elsewhere is the connectivity of that system to other systems, and how can we make equivalent new connections. If you are considering such a move yourself some issues to consider include:

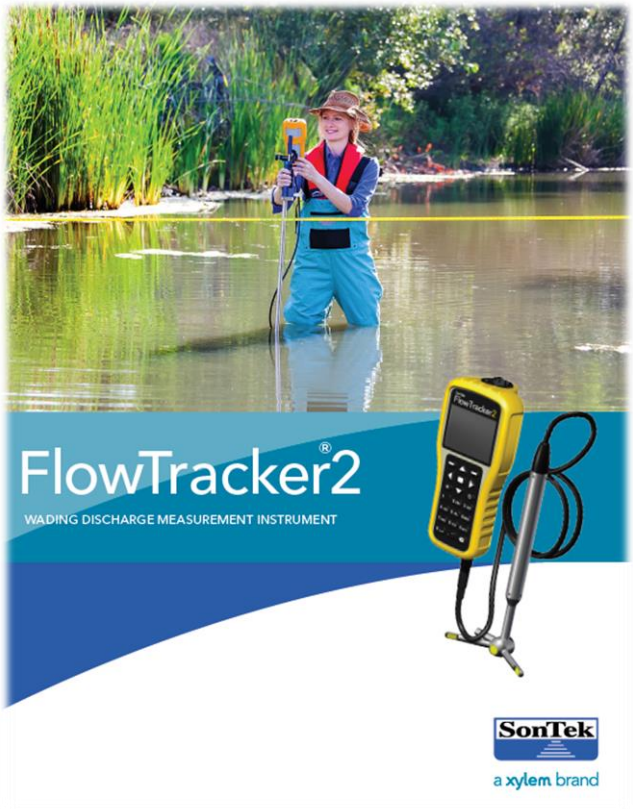
- Do we have the necessary software licences in the cloud for necessary supporting software like Microsoft Office, SQL Server, and utility tools like Beyond Compare, Syncovery, and many others?
- How do we manage links to other systems such as mapping services, water licensing and usage, asset management, HR systems, accounting systems etc?
- How do we migrate large volumes of data into and out of the cloud? Into the cloud for initial system setup, out of the cloud for physical backups, DVDs, laptop systems, etc?

- How do we back up large systems in the cloud? The DPI Water Hydstra system occupies some 250GB of space.
- How do we deal with real physical devices like SCADA systems, modems, SMS gateways, fax modems which may not exist in the cloud? How do you poll a logger from the cloud?
- How do users get day to day data such as logger files and printed reports in and out of the cloud?
- What security devices and mechanisms do we require to secure access to the cloud system?
- What are the procedures for disaster recovery in the cloud? (hint – it should be easier!)
- How do we handle the transition from computing being a capital expenditure to a recurrent expenditure?
- What are the real costs? Are they higher or lower than in-house hosting over a 5 to 10 year period?

We don't have all the answers yet, but the DPI Water system is up and running in production in the Amazon cloud – stay tuned!

SonTek FlowTracker2 Support in Hydstra and WISKI

KISTERS have been working closely with SonTek to support a standardised JSON output file format from their FlowTracker2 wading discharge gauging instrument. FlowTracker2 support has been incorporated into HYGAUGE and patched to Hydstra V11 dated 2015/11/. WISKI support will be available from WISKI 7.4.3 SR10, which will be released in Mid February 2016.



AquisNet News

By Edgar Wetzel, KISTRES AG

AquisNet is the KISTERS Air Quality Monitoring solution. Several new features have been added to AquisNet over the past 12 months.

Five Second Real-Time Data Analysis

Air quality analysers produce a new reading every 5 seconds. This high-resolution data is typically aggregated locally in the data acquisition system into 30 minutes or 1 hour averages. The original 5" data is of interest to both data validation/correction experts and scientists. The added-value of 5" real-time data in the data centre provides access to

the dynamics of the changes in the measurement. AquisNet periodically (up to 3 times a day) downloads the 5” data from all monitoring stations. The data is stored on a hard-disk in circular buffers – the autonomy depends on available hard-disk space and can be anything from a few days to several months. The standard web browser GUI AquisNet REP is used to analyse and process the data, including graphical and numerical analysis, export etc. AquisNet REP ensures a clear separation between 5” real-time data and regulatory AQM data stored in the AquisNet database.

AquisNet becoming more versatile

In addition to air quality and meteorological data, AquisNet is now able to handle other data types such as noise levels and traffic counts. In recent times several users have expanded traffic monitoring stations with additional sensors to monitor noise levels and to count traffic. AquisNet now supports energetic addition, subtraction and averaging as well as the calculation of typical noise indicators. Traffic counts can be split into typical traffic counting categories – here some customization comes into play as several standards exist and schemes can vary from one country to the next. Keeping traffic noise and traffic counts in the same database alongside the air quality and meteorological data provides a holistic view on environmental conditions.

KISTERS Alarm Manager

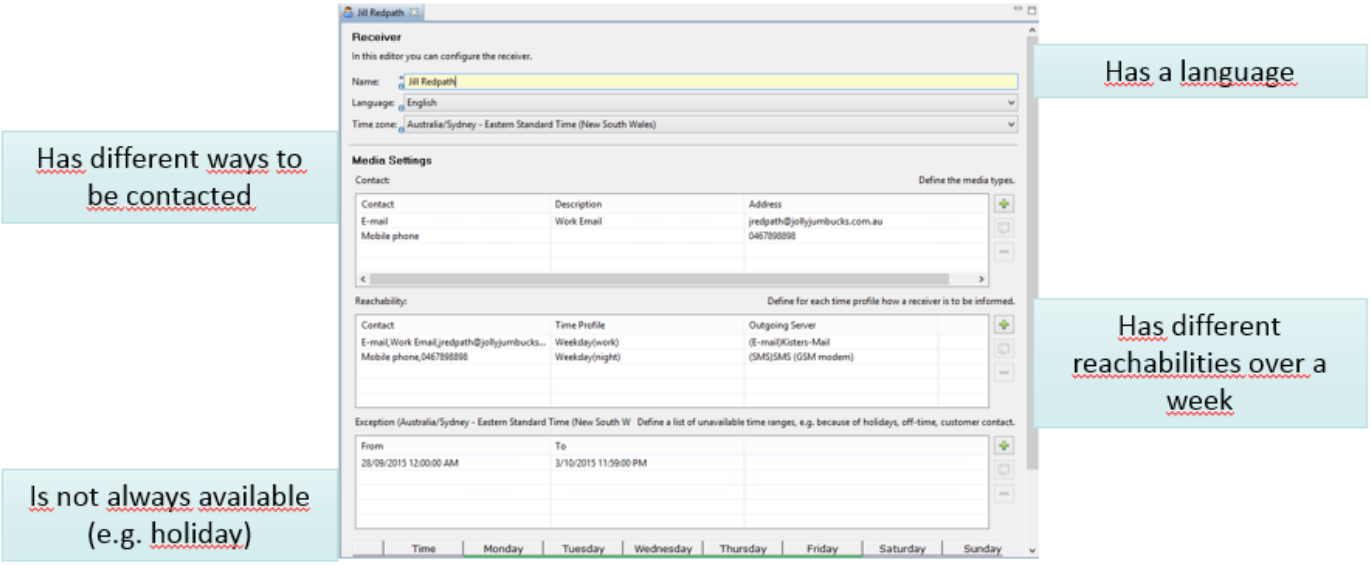
In 2014 KISTERS started on the re-design of the KISTERS alarming interface. The new development was driven by KISTERS move towards a truly modular architecture, where functionality is encapsulated in smaller modules and accessed through thin and stable interfaces. The Alarm Manager is designed in that way to open up a more stable development with lesser dependency problems.

The new Alarm Manager is an independent module which could be used in projects with either WISKI and Hydstra. It handles incoming event messages from the two applications and others, evaluates them and reacts accordingly, sending alarms to a receiver or to groups of receivers.

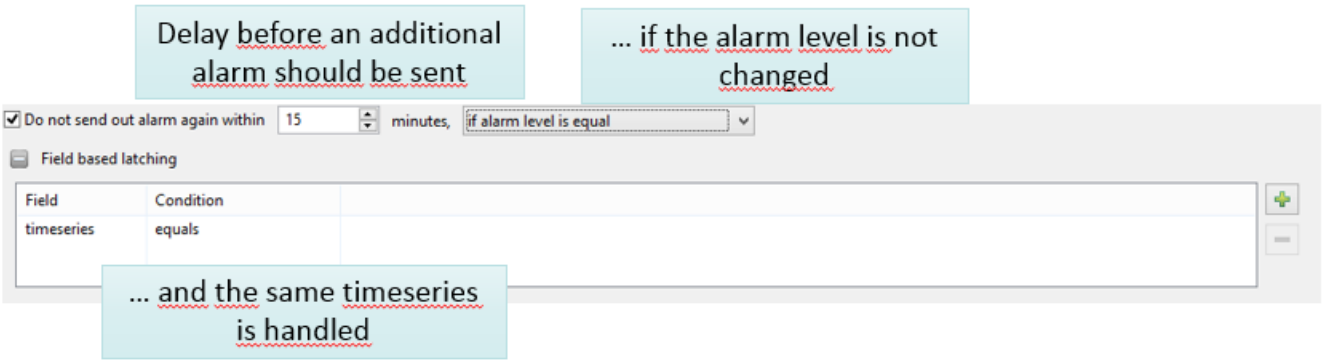
Some key features of Alarm Manager include:

- Alarms can be raised by any software and submitted to an Alarm Manager queue in XML
- Alarm Manager distributes the alarms to a list of people based on a grouping system
- It can distribute alarms by email, fax, phone, SMS etc, and use different technologies at different times of day and week, e.g. email during business hours, SMS in mornings and evenings, and save up the alarm until a decent hour if it occurs overnight.
- The system keeps track of holidays and job delegations, so when a person goes on leave their nominated deputy receives the alarm.
- Alarms can be acknowledged in the Alarm Manager GUI, or by email, phone, SMS etc
- Alarms will escalate if not acknowledged in time
- Alarms can be accumulated to avoid a flurry of similar alarms being delivered in succession
- Alarm messages can be created as parameterised templates in multiple languages, so that different people can receive alarms in different languages.

The following screens give a little insight into Alarm Manager setup. Please contact KISTERS for more information on Alarm Manager.



Setting up a user



Avoiding multiple alarms

KISTERS Software as a Service (SaaS)

For many years KISTERS has been offering its energy and water products as a service, run out of our computer centre in Aachen.

With the emergence of new cloud technologies it is clear that we could do the same thing with any of the major commercial cloud providers. We recently helped a New Zealand client migrate to a New Zealand cloud provider, and the NSW Office of Water to the Amazon Cloud.

From the perspective of KISTERS Australia the main issues we see are not technical but managerial. It is clear from our recent experiences that agencies big and small could move their Hydstra and WISKI operations to the cloud. The bigger questions revolve around the division of responsibilities, and the costs involved.

Difficult issues would need to be negotiated, including, but not limited to:

- Security and access control
- Hours of operation and response time to rectify outages
- System upgrades and patches
- Problem solving, and the difference between data related and system related problems

Please contact us if you wish to explore a SaaS solution involving KISTERS products.

Hydstra Product News

Hydstra V11 Release

Hydstra Version 11 is the current supported stable version of Hydstra, and is available for download from http://kisters.com.au/downloads.html . You will need to contact us at support@kisters.com.au for a V11 HYACCESS.INI before you upgrade to it. We suggest you do a trial upgrade on a copy of your 10.04 system first, before going live.

If you work closely with other agencies and trade Hydstra data with them you should liaise with them before upgrading. If you run Hydstra/WEB you should liaise with Denby Angus and set up a test V11 web server.

Patching Hydstra V11

A new patch is released every Friday, subject to release procedures completing successfully. An increasing amount of new development is now patched back to the current release, and is explicitly marked in the Change Log as having been patched. For example you might see an entry in the patch log as follows:

> **KiWIS available over Hydstra (2015/06/26)**
>
> The KISTERS product KiWIS (**KI**STERS **W**eb **I**nteroperability **S**olution) is now available for installation over Hydstra. KiWIS provides standard publication formats to the outside world including WaterML2, SOS etc. Please contact KISTERS Pty Ltd for KiWIS information and pricing. In order to use KiWIS over Hydstra you will need a Hydstra /WEB or Hydstra/WSI (web services) licence as well as a replicated Hydstra system outside the firewall.
>
> *This feature has been patched to v11.00.*

As we slightly relax the rules about what we can and cannot patch it has become increasingly important that you run HYPATCHUP after installing a new patch. HYPATCHUP is configured to do whatever is necessary, but it may include restructuring and reindexing databases, and without running HYPATCHUP your system may be broken in some areas.

You can find out the date of your current patch by inspecting SYSDATE.INI in MISCPATH.

Hydstra Training Course Videos

We are starting to build a library of Hydstra training course videos. They are generated by recording a training course using Camtasia, so you get the trainer's voice plus the Powerpoint slides. A two-day course can generate 12 hours of video, so it requires dedication to sit through them, but if you are unable to attend a course in person and wish to learn more about Hydstra these videos can be a great help.

The videos are hosted on the KISTERS North America web site. In order to gain access you need to register with us. Hydstra users in North America can register online at **http://www.kisters.net/portal.html** **,** other users should email a request to Peter Heweston (peter.heweston@kisters.com.au) with the following details: Name, email, company name, address, phone number. On approval we will send you a link to the videos.

At present we have two course online, MODSYN Modelling and Administering Hydstra. We will add new courses from time to time as they are recorded. We apologise for the fact that the videos are pretty raw, with little or no editing.

The videos are roughly an hour and half each, and the topics include:

- Hydstra Administration 1 - System configuration and patching.mp4
- Hydstra Administration 2 - Managing users, Configuring menus, Configuring tables.mp4
- Hydstra Administration 3 - Time series configuration, Running HYGIENE.mp4
- Hydstra Administration 4 - Bulk data handling.mp4
- Hydstra Administration 5 - Troubleshooting.mp4
- Hydstra Administration 6 - Routine administrator tasks.mp4
- Hydstra Administration 7 - Routine administrator tasks, HYTEST, What good administrators do.mp4

- MODSYN1 - Introduction to MODSYN.mp4
- MODSYN2 - MODSYN Functions, Integration with Hydstra.mp4

- MODSYN3 - Integration with Hydstra.mp4
- MODSYN4 - Incremental models and Optimisation.mp4
- MODSYN5 - Optimisation and MODSYN Examples.mp4

Backups Backups Backups

Yet again we have been involved with a user who potentially could have lost data due to a full disk while SVRIMP was running. Fortunately the raw data was available for reprocessing.

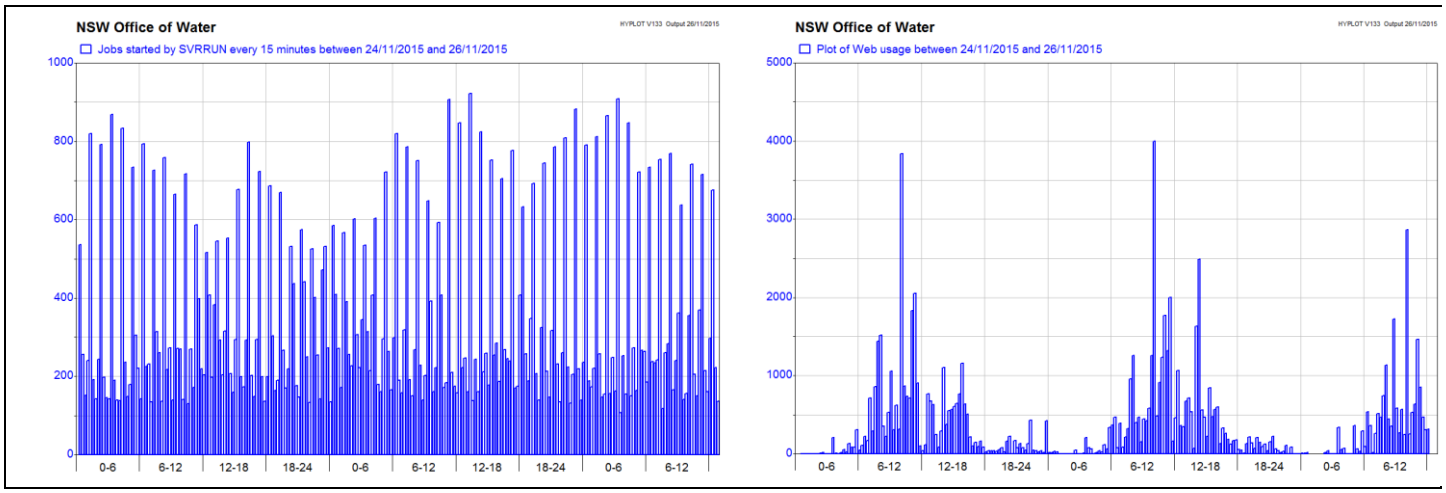
As a basic checklist for Hydstra users, please consider the following issues:

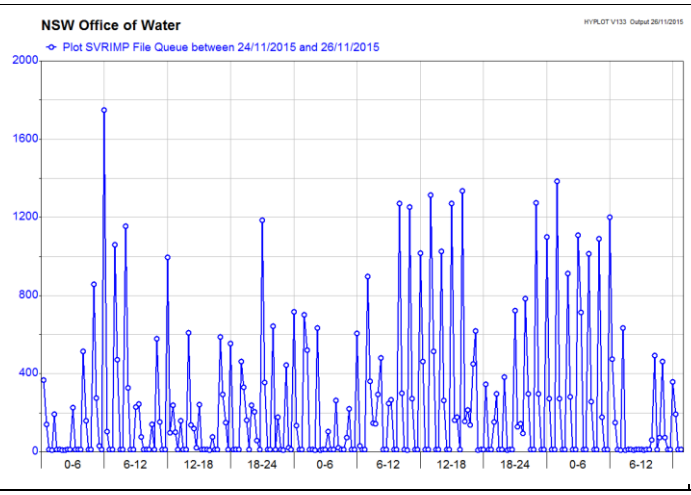
- All raw data should be kept forever as part of your Hydstra raw data tree under \HYD\LOG
- Consider how many backups you need on each datasource (specified in DATASRC.INI). This allows for immediate recovery from corrupt or damaged TS files. The answer should probably not be zero.
- DATASRC.INI has a setting to use the Windows recycle bin. Normally if you delete a network file it is not put to the recycle bin. If you set RECYCLEBIN=YES in DATASRC.INI Hydstra then all Hydstra processes will copy the file to your local C: drive first, then delete it, to ensure that a copy resides in your recycle bin. Of course the increasing prevalence of Citrix and RDP means you may no longer have access to a local drive, and hence a recycle bin.
- Don't rely just on the backups made by DATASRC.INI for telemetry data, as if new telemetry comes in fifteen minutes, three or five backups doesn't allow much time to discover a problem and recover from it. Use ROBOCOPY to keep once a day copies for several days – as many days as you can afford space.
- Make separate backups to a USB drive or NAS.
- Make backups to a DVD that never gets recycled, at least once a month
- Backup your SQL database regularly if using the SQL Server version of Hydstra.

HYDLOGEX Explores HYDLOG Files

As part of the DPI Water upgrade we did some further development work on HYDLOGEX, which is a script for analysing HYDLOG files. It is delivered with a bunch of example jobs in the Factory Defaults area which can easily be tailored to suit your environment. For best results ensure you install a patch after 2015-10-21. HYDLOGEX can generate printed reports and plots of a wide variety of things that can be extracted from log files, including:

- Job run times
- Error summaries
- Web usage
- Plots of jobs processed by SVRRUN and SVRIMP
- etc





Server Job Name	Total Time (secs)	Count	Mean (secs)
incoming_ts	357885	83863	4.27
hyperupd_prov_web	256981	58	4430.70
kpi_daily	39306	2	19653.22
hytelsum.hourlyreportsets	13183	122	108.06
hytelsum.catchments	11792	61	193.31
hytelsum.hydrotel.report	4647	122	38.09
daily_0900_telemetry	4255	3	1418.37
kpi_rollup.bat	4206	3	1402.02
calccoli	3293	211	15.61
calcbre	3152	197	16.00
daily_1500_telemetry	2836	2	1417.89
inst_export_lookups	2083	3	694.39
hyclone.standalone.hydts	2024	2	1012.06
change_a	1759	90	19.54
calcmenindee	1362	79	17.24
exports_sws_carms_last10	1014	61	16.62
calcwilc	953	59	16.16
hyclone.standalone.dbf	772	2	385.85
dwr2snowy_export_1	737	3	245.73
hybatch_web	581	31	18.73
hytelsum.hydro.clienttelemetry	550	3	183.48
hyrep.check.tsfiles	491	3	163.81
dwr2snowy_hourly	460	62	7.41
hymkhelp	142	2	71.18
hyimpexp_mdba_full	89	1	89.19
hyclone.daily.hyd_dat	80	2	40.04
gaugupd	80	47	1.70
dirrsync2winfo	67	61	1.10
dirrsync2rtd	56	61	0.91
hytelsum.dailyreportsets_0930	50	3	16.65
dwr2snowy_daily	27	3	8.94
hyextr.hunterwater.8am151	22	3	7.20
hytelsum.dailyreportsets_0730	20	3	6.81
hytelsum.dailyreportsets_0830	20	3	6.60
hytelsum.dailyreportsets_0630	19	3	6.48
hycsv.deltaelect.1200	19	3	6.24
hyclone.snowyhydro.incoming	18	3	5.85
hycsv.deltaelect.0930	17	3	5.83
webwidgets	2	2	1.11

Example HYDLOGEX Reports and Plots

SVRIMP Value Checking

In a recent patch to V11 SVRIMP we extended it to be able to check incoming data values are within specified limits as they are imported. To invoke this feature you need to set up IMPORTVALID.INI in INIPATH, as in the following example:

```
[Version]
Version=1

[Excessive Action]
Quality = 151
Comment = ERROR: Excessive value %VAL% out of expected range %MIN% .. %MAX%
Clip    = no
Delete  = no

[HighValue Action]
Quality = 111
Comment = Warning: High value %VAL% out of expected range %MIN% .. %MAX%
Clip    = yes
Delete  = no

[SVRIMP Validation]
;variable=STNINIKW,Action
100 = testexcessive,excessive
100 = testhighvalue,highvalue
140 = testflow,highvalue
```

Basically for each variable you have the choice of applying limit checking, which can come from STININI on a site by site basis, with site 0 applying a default if you like. When an out of range value is encountered you have a number of choices, some of which are mutually exclusive:

- Quality code the offending value
- Add a comment to the offending value
- Clip the offending value to the specified limit
- Delete the offending value completely

One of the benefits of the new system is that you can use the same STNINI keyword you have already set up for HYAUDIT screening purposes.

WEBTESTALL Tests Your Hydstra/WEB Site

We have developed a new web testing framework program WEBTESTALL.HSC, distributed in recent patches of Hydstra. Using WEBTESTALL you can test your own Hydstra/WEB site, or indeed any other web site. For a given list of URLs you can test:

- Does the URL respond?
- Does the return string exceed a minimum size?

- Is the returned file sufficiently recent (for static files)?
- For Hydstra/WEB installations, is any specific file in the Hydstra tree of appropriate age or size?
- For Hydstra/WEB installations, is any specific record in any table of appropriate age?

The output from WEBTESTALL is a report showing which calls succeeded and which failed:

WEBTESTALL - Run WEBTEST Jobs

Only tests matching 'dwr'
Run 2015/12/03 13:08:30

Row	Test	Errorlevel	Return Size	Expected Size	Age	Expected Age	Email
dwr.002	dwr.intro.content		238637				inigroup:webtest
dwr.003	dwr.sw_sites.content		285014				inigroup:webtest
dwr.004	dwr.dam_sites.content		11379				inigroup:webtest
dwr.006	dwr.gw_sites.content		90887				inigroup:webtest
dwr.007	dwr.daily_river_report.content		150	300			inigroup:webtest
dwr.007	dwr.daily_river_report.boolean	1	150	300	368		inigroup:webtest
dwr.008	dwr.hyconfig.content		843				inigroup:webtest
dwr.009	dwr.home_page.content		14351				inigroup:webtest
dwr.010	dwr.web_service_main.content		17732				inigroup:webtest
dwr.012	dwr.web_service_menu.content		1118				inigroup:webtest
dwr.013	dwr.web_service_help.content		1118				inigroup:webtest
dwr.014	dwr.web_service_intro.content		4464				inigroup:webtest
dwr.015	dwr.map.content		38586				inigroup:webtest
dwr.016	dwr.map_tweed.content		38586				inigroup:webtest
dwr.017	dwr.x1.content		3901				inigroup:webtest
dwr.018	dwr.x2.content		2409				inigroup:webtest
dwr.019	dwr.x3.content		2052				inigroup:webtest
dwr.020	dwr.x4.content		3446				inigroup:webtest
dwr.021	dwr.x5.content		3339				inigroup:webtest
dwr.022	dwr.widgets.content		26934				inigroup:webtest
dwr.023	dwr.410102_instval.content		3967				inigroup:webtest
dwr.024	dwr.410102_por.content		2309				inigroup:webtest
dwr.025	dwr.410102_download.content		3339				inigroup:webtest
dwr.026	dwr.410102_plot.content		6385				inigroup:webtest
dwr.027	dwr.border_rivers.content		77291				inigroup:webtest
dwr.028	dwr.201001_get_variable_list.content		1845				inigroup:webtest
dwr.029	dwr.json_cache.content		2751794				inigroup:webtest

The failures in red link to a details section in the report with more information:

```
----------dwr.daily_river_report.boolean----------
[top]

2015/12/03 13:08:45 Start webtest

Test name: dwr.daily_river_report
URL: http://realtimedata.water.nsw.gov.au/wgen/sites.dr.anon.xml
Test type: boolean
Minimum size: 300
Timeout: 0
Limit: 500
Advice: Content too small - maybe something broke?
Second line of stuff


Third line 'Peter'
Fourth line <br>


Result: *** ERROR - Content length 150 less than 300 bytes
Return Age: 368 minutes
Last Modified: 06:00:32_03/12/2015
URL contacted OK
Return Size: 150 bytes

*** ERROR - test failed

webtest Perl ended at 2015/12/03 13:08:45
```

WEBTESTALL is configured via a spreadsheet which specifies all the URLs you wish to test:

I2 | inigroup:webtest

	A	B	C	D	E
1	**Name**	**url**	**invariant?**	**minsize**	**maxage**
2	intro	http://realtimedata.water.nsw.gov.au/wgen/menu.anon.js	y		
3	sw_sites	http://realtimedata.water.nsw.gov.au/wgen/sites.rs.anon.xml	y		
4	dam_sites	http://realtimedata.water.nsw.gov.au/wgen/sites.da.anon.xml	y		
5					
6	gw_sites	http://realtimedata.water.nsw.gov.au/wgen/sites.gw.anon.xml	y		
7	daily_river_report	http://realtimedata.water.nsw.gov.au/wgen/sites.dr.anon.xml	y	300	
8	hyconfig	http://realtimedata.water.nsw.gov.au/wgen/hyconfig.anon.ini	y		
9	home_page	http://realtimedata.water.nsw.gov.au/water.stm	y		
10	web_service_main	http://realtimedata.water.nsw.gov.au/cgi/webhyd.pl?main	y		
11					
12	web_service_menu	http://realtimedata.water.nsw.gov.au/cgi/webhyd.pl?menu	y		
13	web_service_help	http://realtimedata.water.nsw.gov.au/cgi/webhyd.pl?help	y		
14	web_service_intro	http://realtimedata.water.nsw.gov.au/cgi/webhyd.pl?intro	y		
		http://realtimedata.water.nsw.gov.au/wsys/webmap.htm?tab=rskm_url&catid=rs&lvl=3&lg=1&lat=-			

dwr | hsy

READY | COUNT: 28 | 115%

WEBTESTALL can optionally email a list of people if any failure was encountered.

Delivering Hydstra Data via Web Services

Any organisation running Hydstra/WEB can already deliver data in real time to clients via REST web services which mimic the DLL JSON calls. Even if you don't run Hydstra/WEB you can licence Hydstra/WSI which provides just the web service interfaces.

We strongly recommend that both data providers and data consumers consider using Standard Hydstra calls for most of their data handling. Standard Hydstra is a configured series of REST calls that provide data in standardised units and parameter names which remain constant across all Hydstra providers. This means that consumers don't need to concern themselves with variable numbers, datasource, or the vagaries of whether flow is stored in megalitres per day or cubic metres per second. It allows consumers to gather data from multiple agencies in the same format using identical calls.

Standard Hydstra is discussed at length in the Hydstra Help File, under the topic Standard Hydstra Data Publication.

Data providers can further licence KiWIS, which is a KISTERS product that sits on top of Standard Hydstra and delivers a number of standard formats including WaterML2 as well as web mapping services WMS and WFS.

Withdrawing Ploticus?

For many years we have been delivering a command line plotting tool called Ploticus. We don't use it ourselves in anger, and we rather suspect that nobody else does either. Would anyone be offended if we dropped it? Please contact support@kisters.com.au if you still use Ploticus and want it to continue to be delivered with Hydstra.

A number of users who required a generic reporting and analysis tool have found the open source statistics package R to be of great benefit. You can read more about R at https://www.r-project.org/ .

Proposed Withdrawal of Rating RELEASE in V12?

Since the beginning of time we have supported release numbers associated with rating tables, with the highest release number for a given table number used in production to compute flow. This causes some considerable complexity in both code and in training.

We are considering a proposal in V12 to drop the support of RELEASE by folding it back into an extended numeric TABLE field. We would make the TABLE field numeric with two decimals and migrate existing ratings into with the release folded in, so table 3 release 2 would become table 3.02. RATEPER records would then simply link explicitly to the required table, other tables would remain for use by programs such as HYRATAB that can refer to unlinked tables, and the world becomes a simpler place.

One internal driver for this change is that some databases we are considering supporting in future don't allow for a mixture of ascending and descending keys in indexes, which is how RATEHED and RATEPTS are presently indexed. We are keen to remove the few remaining cases of this complexity before they become an intractable problem. We also want to simplify the way tables are referenced in RATEPER so the 'secret sauce' of using the highest release becomes explicit.

If you have any comments about this proposal please direct your discussions to support@kisters.com.au in the first instance.

Checking SQL code in Perl

We have started on some major system developments leading towards Hydstra V12, namely updating to the Delphi XE6 compiler and a new database access layer called FireDAC. The development is going well, and early indications are that FireDAC will be a good deal faster than using ADO to access database tables. A further promise of the move to FireDAC is that we may be able to more easily support Hydstra running over additional SQL databases such as SQLite and MySQL.

Over the last few years we have allowed some explicit SQL code to intrude into the Perl world for efficiency reasons. Unfortunately SQLs ain't SQLs, and any explicit SQL code needs to be tailored to match the vagaries of each new SQL syntax. This turns out to be a rather larger job than you might expect – you can read the HYDBSQL documentation for a discussion of some differences. Basically you may need quite different syntax depending on the target, and conditional code in your Perl to deal with each supported syntax. There is a call in hydlib.pl called SQLFlavour which returns the

name of the current SQL flavour – values returned include *foxfile* for SQL over Foxpro, *transactsql* for SQL Server, and potentially other possibilities in future.

As a safety measure any supported Perl code that uses explicit SQL has been enhanced to assert the SQL versions that it has been tested on. We use a statement of the form

```
SQLFlavourCheck('^foxfile$|^transactsql$');
```

which asserts that this code has been tested to run over Foxpro files and Microsoft SQL Server. Any other SQL variant will cause the program to abort.

If you have code in INIPATH that makes direct SQL calls we suggest that after installing a recent V11 patch you add similar assertions to your own code. Unless you are already running under SQL Server the most common assertion is simply

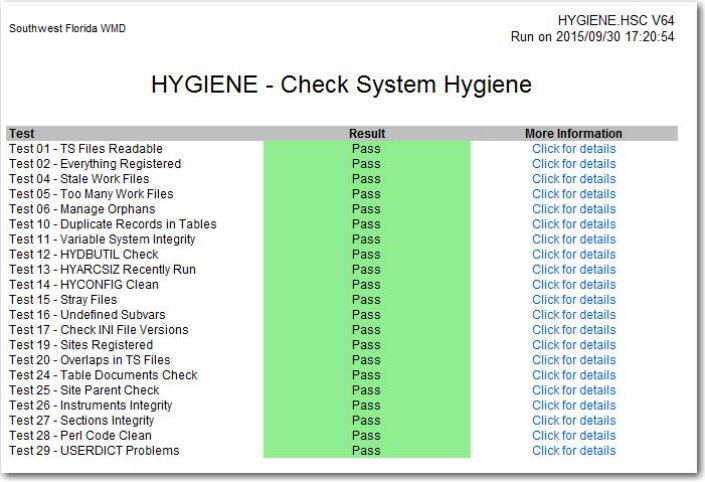
```
SQLFlavourCheck('^foxfile$');
```

First All-Green Hydstra HYGIENE Report

Congratulations to Asmita Shukla from Southwest Florida Water Management District, who claims the prize for the first agency to submit an all-green HYGIENE report! In lieu of the longstanding offer of a slab of beer KISTERS has offered Asmita a free place at next year's KISTERS User Group meeting in the USA.

HYGIENE runs a series of tests asserting that various aspects of a Hydstra system are being well managed. We recommend that every agency run it once a week and embark on a project to rectify the problems it reports. We will happily report on your HYGIENE success stories in the Newsletter. Of course we reserve the right to add new tests to HYGIENE to try and break it again!

Asmita Shukla



Southwest Florida WMD

HYGIENE.HSC V64
Run on 2015/09/30 17:20:54

HYGIENE - Check System Hygiene

Test	Result	More Information
Test 01 - TS Files Readable	Pass	Click for details
Test 02 - Everything Registered	Pass	Click for details
Test 04 - Stale Work Files	Pass	Click for details
Test 05 - Too Many Work Files	Pass	Click for details
Test 06 - Manage Orphans	Pass	Click for details
Test 10 - Duplicate Records in Tables	Pass	Click for details
Test 11 - Variable System Integrity	Pass	Click for details
Test 12 - HYDBUTIL Check	Pass	Click for details
Test 13 - HYARCSIZ Recently Run	Pass	Click for details
Test 14 - HYCONFIG Clean	Pass	Click for details
Test 15 - Stray Files	Pass	Click for details
Test 16 - Undefined Subvars	Pass	Click for details
Test 17 - Check INI File Versions	Pass	Click for details
Test 19 - Sites Registered	Pass	Click for details
Test 20 - Overlaps in TS Files	Pass	Click for details
Test 24 - Table Documents Check	Pass	Click for details
Test 25 - Site Parent Check	Pass	Click for details
Test 26 - Instruments Integrity	Pass	Click for details
Test 27 - Sections Integrity	Pass	Click for details
Test 28 - Perl Code Clean	Pass	Click for details
Test 29 - USERDICT Problems	Pass	Click for details

All green HYGIENE!

WISKI Product News

Release Management

All WISKI and KiWQM customers in Australia, NZ and South-East Asia (see new WISKI\KiWQM installation in Vietnam below) are using WISKI 7.4.1 or 7.4.3 in production.

Support Email, Help Desk and Bugzilla … just a reminder

The WISKI team at KISTERS Pty Ltd (Vicky, Chris and Callum for the web developments) offers specialised support for the KISTERS products WISKI, KiWQM, KiECO, KiDSM, KiALM, WISKI Web and KiWIS. The phone number for support is +61 2 6154-5200, and the email address is wiski-support@kisters.com.au. If you are engaging in a particular dialog with Chris, Vicky or Callum please cc the support box so a central register of issues can be maintained.

Clients can also formulate their own Bugzilla cases once it is agreed with WISKI support that the case is classified as a bugfix or enhancement. We can assist you to step through this process in the first instance. In addition Bugzilla can be a good way for customers to track the progress of all the outstanding and past cases of their organisation. Please contact us if you require a Bugzilla account to be created.

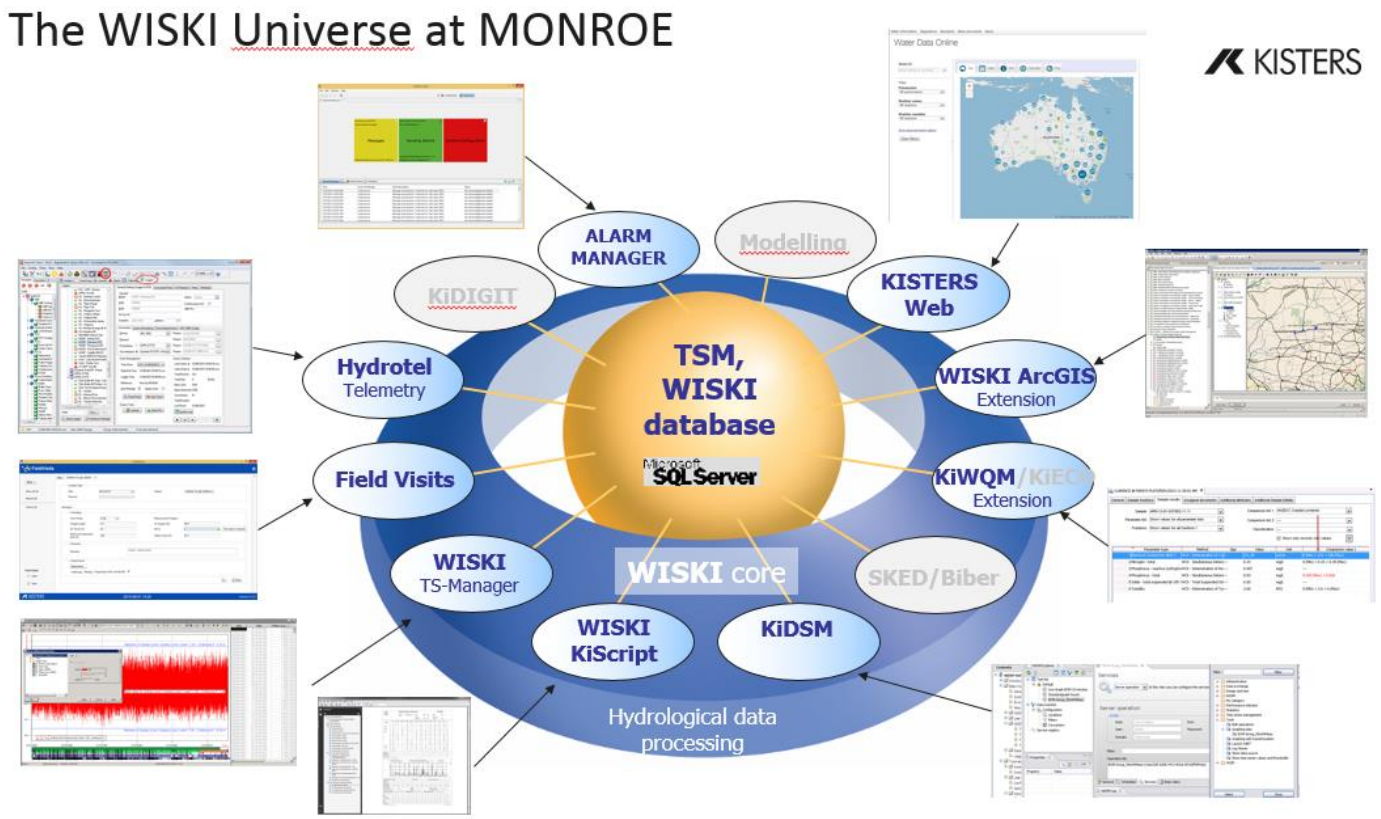
WISKI/KiWQM in Vietnam

In July 2015 the WISKI\KiWQM software solution was selected by the Ministry of Natural Resources and Environment (MONRE) and the Vietnam Environment Protection Fund (VEPF) in a World Bank funded project as software solution for the "Development of an information system for integrated management of industrial pollution in the 2 river basins of Nhue-Day and Dong Nai". The project is a joint venture between KISTERS and Harmony Soft, a Vietnam based software company.

The main objectives of the project are:

- Review current laws, regulations, circulars, policies that are related to environmental management, surface water's quality monitoring and industrial pollution management in Vietnam
- Review current IT infrastructure, data transfer capacity and IT applications which have been deployed to manage environmental information in general and manage the surface water environment in particular in Vietnam
- Show best practices in WQ monitoring in surface water environments from Australia
- Identify the technical and business requirements from which we recommend and proposed the method, concept, architecture, functional requirements and system design
- Develop and implement an information system to monitor and analyse water quality in two river system for four provinces

Beginning October 2015 a test system was set-up in Vietnam and a demo workshop presenting all system components was held over a week in Vietnam. The system will use many of the KISTERS software products as shown below.



At the moment Harmony Soft is finalising the analysis report to summarise the current environmental monitoring practise and defining the requirements for the system design specification. KISTERS is working on a design report to discuss the final solution design.

The project will run until mid 2016.

WISKI Support Job Opportunity with KISTERS

KISTERS has a position vacant for a Junior Support position in Canberra to assist in the support of WISKI in Australia and the region. Please see the job description that is distributed with this newsletter.

KISTERS Security Initiatives

KISTERS in Aachen is updating its physical and logical security policies in the light of emerging regulatory interest in Europe. KISTERS is working towards ISO 27001 certifications for its software development processes, see the attached brochure for more details.

KISTERS Training

Training Courses

We are happy to provide training courses on any aspect of KISTERS software 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 preparation days, travel and accommodation at cost. Courses we can offer include:

Basic Hydstra
Basic WISKI
Advanced Hydstra
Advanced WISKI
Hydstra Administration
WISKI Administration
Administering Hydstra/WEB
Hydstra Modelling with MODSYN
Hydstra/SVR Server
Ratings and Gaugings with Hydstra
Exporting data to the BOM using HYWDTF_OUT
Using Perl with Hydstra
Groundwater Data Management with Hydstra
Water Quality Data Management with Hydstra
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. We have yet to develop the training schedule for 2016, and we will notify you with the schedule once the schedule is finalised.

Worldwide KISTERS News

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

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

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

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.

KISTERS Canberra Phone Numbers

We have been using a VOIP-based phone system based on open source Asterisk software in Canberra for some years now, and we plan to terminate most of our analogue phone lines shortly. Please use the following phone numbers if you wish to contact someone in Canberra directly:

02 6154-5200	KISTERS Support
02 6154-5210	Bill Steen
02 6154-5211	Damian Skinner
02 8091 5212	Denby Angus
02 6154-5214	Rob Smith
02 6154-5215	Alain Remont
02 6154-5216	Chris Michl
02 6154-5217	Debbie Cockburn
02 6154-5218	Peter Heweston

The VOIP system emails voice messages directly to the recipient.

The only analogue phone number we will keep is the alternate support number 02 6288 2302. Our fax remains the same on 02 6288 9061. The following numbers will be terminated: 6288 2288, 6288 2356, 6288 2756, 6288 2024. Please update your internal phone directories accordingly.

Staff News

Welcome to Rob Smith

Rob Smith has recently commenced with KISTERS in the Canberra office. Rob is an accountant, and he will be working across all the Australian and New Zealand KISTERS entities to bring their financial reporting into line with KISTERS international standards. His time will be shared across KISTERS Pty Ltd, HyQuest Solutions Australia and HyQuest Solutions New Zealand.

Farewell to Bruce Young

Bruce Young has retired from KISTERS after a long career with KISTERS working initially on Time Studio and later WISKI. We wish Bruce well in his retirement as he messes about in boats.

Farewell to Massimo Antinarelli

Massimo has decided to relocate back to Italy, where he will continue to work for KISTERS AG on the development of its energy industry software portfolio. Massimo's energy and cheerful enthusiasm will be much missed in the Canberra office and we wish him well.

KISTERS Christmas Party

This year the KISTERS Australia Christmas party was held at Chris Michl's place, around a pizza oven and a smoker. An excess of delicious food was produced and a general good time was had by all. As usual Kris Kringle gifts were a source of much merriment!

Information

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