

# SPREZZATURA

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# SEN

## November 2008

*Sprezzatura's Electronic Newsletter*

*For Revelation developers by Revelation developers*

**MAKING DATABASES HAPPEN**

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## Welcome

Welcome to a much delayed SENL. We're considering how we can provide more contemporary feedback to the Rev community because frankly the workload we deal with frequently prevents us spending the time in these free resources. We THINK we've got an ideal solution but we'll keep you posted as things evolve.

The MAIN focus of this SENL will be that of performing AREV32 conversions. We've done a large number of these over the past twelve months and for existing AREV houses it is a G-d send, providing an ideal halfway house between AREV and OpenInsight with great potential for incremental development. The development of AREV32 shows an increasing maturity in the new Revelation management's direction. Did I say new? They've been there for 8 years now but for some of us this still feels like yesterday! Some of the new features in 9.0 confirm this new found maturity – I was fortunate enough to be granted a preview and one particular feature just SCREAMED "we feel your pain and we're here to help". If you attend any of Rev's previews you'll get a chance to see what I'm talking about. See the comments about November 11<sup>th</sup> later in this piece.

One thing we've wanted to do for ages, is to get around to giving away our SMTP mail client. There are several solutions to email so we don't see this as being a commercially saleable solution but it works well for us so we figured we'd just make it available to the Rev community as freeware. Later in this document we provide details on how to use this software. To get the installation file just mail [sales@sprezzatura.com](mailto:sales@sprezzatura.com) with your name, address and the product and version you're using and we'll mail it right back to you. Well, depending on which time zone you're in there might be a slight delay but...

It has been a stupidly geographically diverse twelve months at Sprezz Towers. We've worked in the UK, Ireland, the US, Canada, Puerto Rico, Denmark, New Zealand, Malta and remotely in even more places. We've worked on Rev G systems, AREV from 1.16 to 3.12, 16 bit OI, AREV32, 32 bit OI, U2, Web based systems, OECGI, OECGI2, SWEB, XML, FTPS and SOAP. Once again we've been privileged to work closely with the developers at Revelation Software on some pretty cool low level additions to the product which will see the light of day in 9.0. At the opposite end of the scale in one of our more retro jobs we moved an AREV 2.1 Novell based system with a mixed LH/SQL Server 6.5 backend to Universal Driver 4.5 on Windows, removing Novell from the mix. DBMSSPX vs DBNMPIPE anyone? US work is currently looking like really good value given the dollar exchange rates so if you need anything doing book now before rates change again!

One of the highlights of all of the travel was the Revelation Conference in Las Vegas. Whilst there was a lot of good technical information being disseminated I know I'm biased but I can't believe just how thorough Carl's dissertation on the many security loopholes that exist in OI based web apps was. It should be noted that most of these issues exist in ALL web apps it's just that as Rev developers we can sometimes neglect the wider picture as it is outside our comfort zone.

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Following on from the conference our Web Audits have proven to be popular with the Rev community. For a fixed price a senior Sprezz consultant will review your web application for the most common vulnerabilities and make recommendations on what changes you can make to ensure that you're protecting your site from hackers and script kiddies. Interestingly we were reviewing the web logs at one of our clients recently (the one featured later on in our "show and tell") and we were fascinated to see just how many exploit attacks there seemed to be!

In an effort to improve our Customer Service we've implemented a new case tracking service. If you wish to open a support case with Sprezzatura all you need to do now is email [cases@sprezzatura.fogbugz.com](mailto:cases@sprezzatura.fogbugz.com) and you'll automatically be assigned a new case number for tracking support incidents. Over 90% of our Pay As You Go support calls are resolved with 2 or less support units so this makes for a remarkably cost effective way of sorting out your OI or AREV issues. Support units are billed at a fixed price per unit which generally makes for a cost effective solution.

We're pleased to also include a piece on a system we wrote for a client that integrates a truly diverse mix of technologies. It really is the sort of mixed environment in which OpenInsight excels. Essentially, the software is for controlling Pay As You Go IP Phone Systems in a large London based hotel style building. We're very proud of what we've achieved here and we hope that the article below will give you some ideas as to the sort of things that can be achieved with OpenInsight and some imagination.

November 11<sup>th</sup> sees Revelation presenting their annual all day conference in London. I would encourage you to attend, but following the success of similar days in Australia and New Zealand, I suspect that by the time you read this the event will already be oversubscribed. The biggest portion of the day is given over to Mike Ruane who'll be showing large swathes of the cool stuff that's coming down the line in 9.0. This is honestly one of the most ground breaking releases we've seen from Revelation since the introduction of the 32 bit version. There is something for everyone and you'll really want to get a look at what others are raving about.

The feedback from the shows in the Antipodes has been nothing short of hagiographic! Web 2.0 integration through OpenInsight's brand new WebOI, a brand new IDE, a brand new system editor, new network capabilities, enhanced .Net integration, a brand new print engine, integration of Sierra Bravo's Dashboard technology, enhanced localisation – date, time, currency and modifiable LND settings, ability to create a SETUP.EXE from the RDK, rich text support in OIPI ADDTABLE, edit table enhancements, enhancements to the OI4U2 configuration module plus much, much more. Yes, the list is long and it continues to grow.

A smaller section of the day will be provided by Andrew McAuley who'll be talking about trouble shooting and achieving performance gains within your OpenInsight based applications – one of the things Sprezz gets called upon to do quite a bit of the time.

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In addition, Revelation will be holding a special OI4U2 Developer's Briefing on the following day, 12<sup>th</sup> November. This technical day, will look at the reasons for OI4U2, how to configure the U2 connection object for use with IBM's Universe database. They'll then go on to look at how Universe and Unidata developers can very quickly and easily create Windows GUI desktop and browser based applications without changes to their existing Universe backend. As with the previous day, looking at the registration list today, I expect that places for this day will be taken by the time your read this article. However, please contact Martyn on 0208 912 1003 if you are interested in learning more about either of these two one-day events.

And finally a huge apology. In the last issue the Author names became magically detached from the articles – so credit where credit is due :-

- ☑ RTP65- Making a hash of it – Carl Pates
- ☑ Advanced Universal Driver Heavy Configuration – Aaron Kaplan

**Regards – Your friends at Sprezzatura**

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## **Trials and tribulations – Universal Driver 4.5 and 3.1**

We've been working quite a bit with various incarnations of the Universal Driver Heavy of late and we've discovered some interesting facts both by dint of sheer sleuthing and by some incredibly helpful post installation support from Revelation Software. This article is an attempt to distil some of that gleaned wisdom into a form that is usable by the community at large.

### **DEP – Delapsus Resurgam**

Well the really bad news is that as of Windows 2003 Service Pack 2, DEP issues are well and truly back. Attempts to run the Universal Driver Manager on the server just failed completely. Copying the Manager local to a workstation ensured that it would launch every time but as the UDH does not have a remote interface this only proved that the software was not in and of itself at fault.

At first this was assumed to be a permissions issue and much setting and unsetting of various flags was undertaken but this got us nowhere. Once again we broke out the old standard tool of FileMon.exe, but this just showed that OpenInsight was actually starting to load but was being abruptly terminated. Hours of head scratching was resolved by changing the DEP settings to be for essential Windows services only. Note that you can't get away with including OpenInsight and OpenEngine in the allowed list as this no longer works and OpenInsight continues not to run.

### **Using UDH with AREV prior to 3.12**

One of the clients for whom we wished to install the UDH was running Advanced Revelation 2.12. The UDH documentation clearly states that the product can only be used with AREV 3.12 or OpenInsight. This puzzled us as you can use the Universal Driver with anything after 2.03, so feeling smug in the infallibility of our own logic we installed the UDH onto the server and configured it appropriately. Mirroring worked instantly and all was well. Of course at this stage we'd still not resolved the DEP issue so we couldn't actually toggle mirroring but we were able to show that it worked by the simple expedient of changing something on the Primary Server, noting the DOS name of the REV file and checking the date time stamp on the corresponding REV file on the Secondary Server.

Over the next few days we began to experience unusual network errors with workstations crashing to the debugger in ! code. This was ascribed to a number of things, but the one consistent factor was that logging out and in again fixed the problem. Just as we were beginning to tear our hair out, some eagle eyed debugging noticed the ! code version number change in real time. That was the moment that realisation dawned. Of course – when AREV/OI open a ! file they check the object code version and if it isn't the "correct" version they recompile the code. So the UDH Manager was recompiling the ! code and the workstations were attempting to run object code that they considered to be invalid. This led to workstations crashing in the middle of file updates.

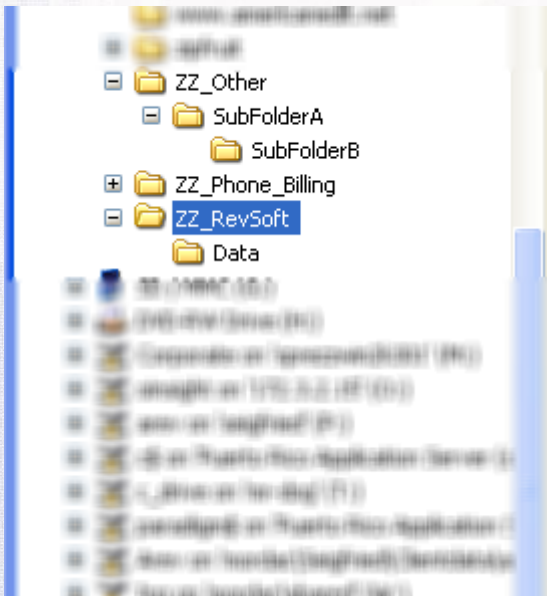
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Of course this was doubly frustrating because the UDH Manager doesn't even USE the indexes, so it was essentially cutting off its nose to spite its face. Some additional sleuthing established that the routine that does the recompilation is SI.MFS – so we installed a "blank" SI.MFS in the UDH Manager – effectively writing our own routine that did nothing, and overwriting the system SI.MFS - and magically recompilation ceased and we were able to use the UDH Manager with the AREV 2.12 data! This seems to be a significant result – perhaps future versions of the UDH will incorporate this patch? All of our testing indicated that this is a reliable platform so if you've been wanting to use the UDH but didn't want to move your old AREV App to 3.12 then this may work for you.

## REVPARAM funnies

As part of our investigation we were able to establish that the UDH is a little more disk intensive with regards to REVPARAM files than we'd expected it to be. We'd naively assumed that it would check the REVPARAM at startup and that would be it. If it found a REVPARAM it'd stop looking in future. In fact, this doesn't happen at all. The UD is constantly checking for REVPARAM files.

Imagine you have a directory structure such as the one below :-



Having data in \ZZ\_Other\SubFolderA\SubFolderB and in \ZZ\_RevSoft\Data. The application is launched from \ZZ\_RevSoft.

We had formerly assumed that putting a RevParam file in \ZZ\_RevSoft would be all that was required. However, investigation proved this to be incorrect. When accessing files in the SubFolderB the UD looks for a RevParam in that subdirectory. If it fails to find one there it looks back to SubFolderA.

Failing here it moves back to ZZ\_Other and failing here it tries the root directory. Note though that in this scenario it never finds a REVPARAM as it does

not traverse down to \ZZ\_RevSoft. As a side point it actually tries to read the REVPARAM twice at each level. The reason for this is unclear – it seems unlikely that the Operating System lied the first time!

This has obvious implications if you're storing files off the root of your drive. It also argues for placing an identical REVPARAM in every subdirectory having a REVMEDIA to cut down on the amount of directory traversals that the UD has to do. This does present a maintenance headache however.



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## Speed Issues (applies to all versions of UDH)

When the UDH is mirroring it is writing to both boxes on the same processor thread. So firstly the primary server is written to, then the secondary and then the write completes and control returns to the program that invoked the write. Thus the program will not regain control until both writes have completed – this way if there is a failure in the second write the program does not continue to do more work/harm. The implication of this is that if anything is slowing down writing on the second box (over zealous anti-virus activity for example) the programs running on the main server will crawl.

## Journaling/Mirroring Confusion in 3.1

The 3.1 UDH documentation is, regrettably a little lacking in detail when it comes to the internal operations of the product. This is something which has been addressed in a significantly better manner in the 4.5 documentation. However this lack of clarity has led to confusion at some of our client sites.

When the UDH is in mirroring mode (writing to both machines simultaneously) if it encounters an error on the second write it will throw a fatal error and switch to journaling mode. The most common causes of this are (again) anti virus/backup software running on the secondary server or the introduction of files on the primary server that do not yet exist on the secondary server. At this point the UDH will start to journal files to the Primary Server hard disk.

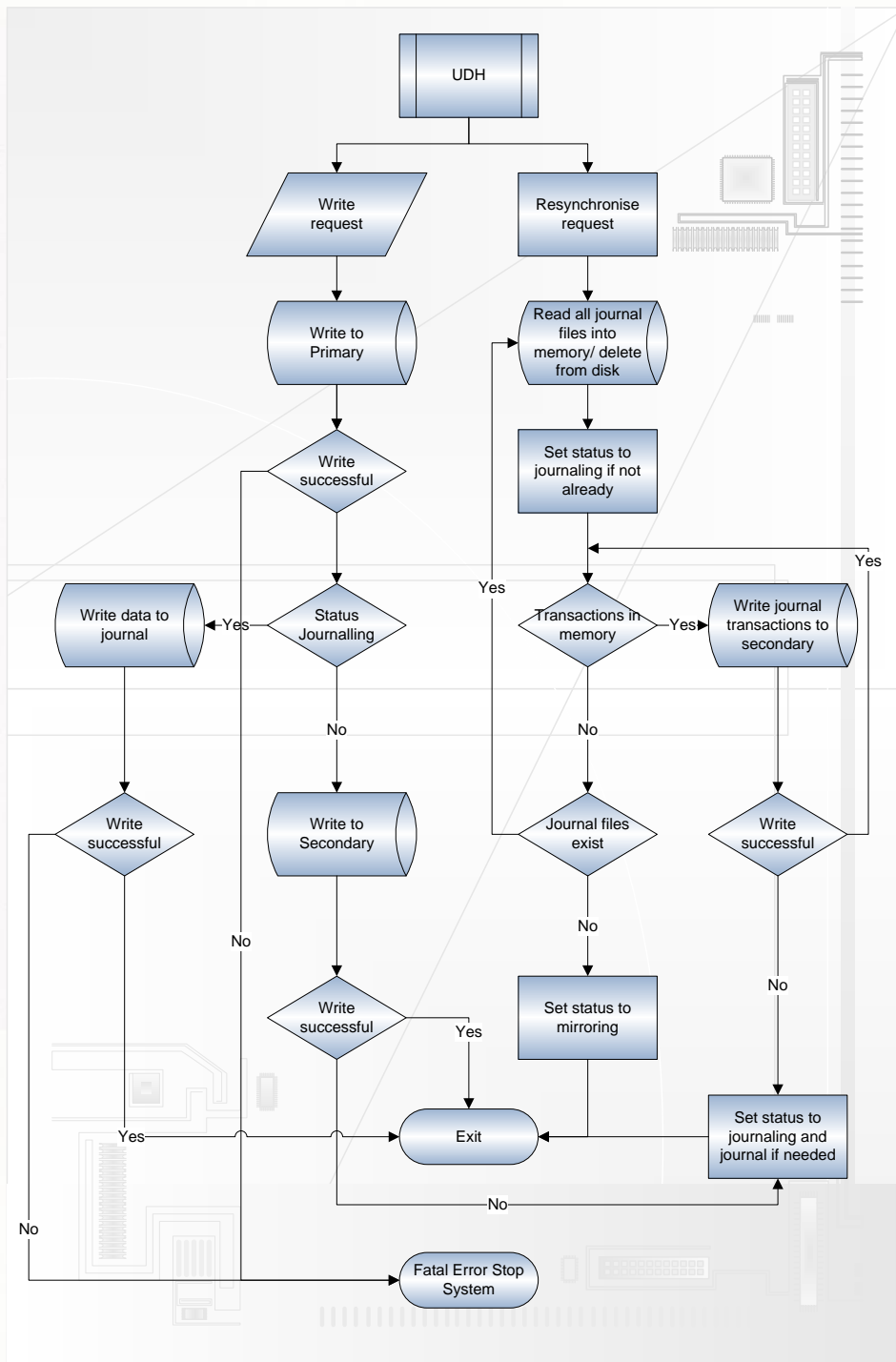
Once the problem has been rectified the user may choose to turn mirroring mode back on – in which case the journal files will replay until both boxes are back in synch. Now to achieve this the UDH has to continue creating NEW journals until the old journals have completely replayed. It will then replay these NEW journals whilst creating NEW NEW journals until the NEW journals have replayed... the consequence of this is that the Universal Driver Manager will switch back to "Journaling" status giving the impression that "as Mirroring cannot be turned" on there is a problem. To compound this impression, under the 3.1 UDH the act of turning replay on reads all of the transaction files into memory *and then deletes them from disk* to make way for the continued journaling whilst the transactions are replayed. So the unaware user would turn Mirroring on, see all of the transaction files disappear – and likely conclude that this meant they had been replayed – and then see Journaling restart and much smaller transaction files appear. They might legitimately come to the conclusion that there is obviously a problem with the UDH and decide to reinstall the UDH or worse still reboot the Primary Server – thereby losing all of the transaction files from memory and ensuring that the only way to resynch is to make a copy from the Primary to the Secondary again.

The lesson to learn from this is that once you've turned mirroring back on, leave the system well alone for several hours before you conclude that there is a problem. There is another indicator that replaying is currently taking place too and this is the existence of the UDHCRT.LOG file. This is a flag file that tells the system that it is currently replaying journal files and until this process is complete this file will exist on disk.

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We're pleased to be able to report that this process has been made a lot safer and more interruptible in 4.5 and this is explained in depth in the manuals so we look forward to a patched version of this shortly

The above process might perhaps be more easily expressed as a flowchart (with grateful thanks to Revelation's Bryan Shumsky who proofed this diagram and provided several useful clarifications on the operation of the UDH).



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## Working through an AREV32 Conversion – Warts ‘n All

### Let's start at the very beginning (it's a very good place to start)

#### CTO

A couple of years ago Revelation realised that there was potentially a market for people who had existing PICK<sup>1</sup> style applications who wished to move them into a PC environment to future proof them. So they came up with the concept of the CTO – “Character to OpenInsight” – a way of running green screen style applications in an OpenInsight environment. Traditionally green screen applications are terminal based using VT100 style terminals. So if they could somehow make OpenInsight respond to a terminal they could start to move towards a green screen/OpenInsight hybrid.

Now before we go any further we have a confession to make – we're talking about a green screen/OpenInsight hybrid but the reality is slightly different. You see what we view as being OpenInsight is *actually* two elements. The original architects of OpenInsight had designed it to work as “middleware” where the user interface speaks to the back end database engine. That's why we have OpenInsight (OInsight.exe (the user interface component)) and OpenEngine (Oengine.exe (the back end database engine)). Regretfully when OpenInsight was first introduced people couldn't get their head around this concept, so the early releases took a while to be accepted by the development community. But, with the passage of time concepts which once seemed alien became more acceptable. So Oinsight.exe is the code that is responsible for interacting with Windows and listening to messages and responding to them. It receives notifications from Windows that something has happened and it translates these notifications into more pragmatic instructions like “Oh I've got to tell oengine.exe to run that button's click event”. If you like it's the interpreter between our programming efforts and the Windows Operating system. Now if we don't *want* to talk to Windows then Oinsight.exe becomes superfluous requirements. If we're wanting to write a terminal based application then we *don't* want to talk to Windows – we only want to run Basic+ programs, so what we want is a way to speak from a terminal to the oengine.exe to allow it to run programs. In the light of the foregoing from hereon in, if we say we're interfacing to OpenInsight we're actually interfacing to OpenEngine – capice?

So the socket server was born. This was a generic routine for handling TCP/IP communications between the OpenEngine and any client that was developed to speak to it. This opened up the door to allowing the use of terminal emulation software to speak to the server to speak to the engine and thus the CTO came into being.

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<sup>11</sup> On the off chance that you weren't around in IT in the late 70s and early 80s we ought to explain that PICK is an operating system upon which the Revelation filing system and programming language is based. It shares the data structures and programming syntax but traditionally it is a mini computer OS not a PC OS.

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OpenEngines' precompilation technology was adapted to allow existing "Pick" style code to be recompiled and run under OpenEngine. You see Windows is a little protective of input and output methods. As a developer you're not allowed to just write to the screen – after all, for all you know the current window you want to write to is minimised. So wherever the old code would attempt to INPUT X,3 a routine to emulate this would have to be called. Wherever the old code would attempt to PRINT @(4,4) a routine to emulate this would have to be called. So routines to emulate these functions were developed and the precompiler modified to do the replacements as required. With this in place we're now well placed to be able to use terminal based applications against OpenEngine. The terminal emulator displays the "green screen" and the emulations allow the application to behave as though it were a green screen application.

## AREV32

Now that the ground work is covered we can see that the next logical evolutionary stage is to allow the same technology to be used to allow Advanced Revelation applications to be converted over and run against OpenEngine. We're not actually running AREV applications, we're running recompiled routines from a terminal emulator designed to look like AREV, that calls into OpenEngine routines that have emulations built in to allow input, printing to screen and printer and all the other things that as AREV programmers we just took for granted.

So knowing this hopefully we won't now just expect an AREV to AREV32 conversion to be a cake walk? That said, with each recent release of OpenInsight, the AREV32 conversion wizard has improved in scope and effectiveness. Here at Sprezz Towers we've been looking for a chance to document a conversion process but regretfully most of the projects we've undertaken so far have been too large in scope or of a confidential nature to allow us to document it "soup to nuts". So we've been keeping our eye out for an opportunity to convert a medium sized application.

## The Conversion Project

One of our South African VARs, Klaus Bumann, recently provided just such an opportunity. Many years ago, he ported his PICK application to Advanced Revelation and has been happily providing it to his clients since. However, like everybody in the PC market, Klaus saw the need to move to a true 32 bit environment and so some synergy was born. With Klaus' permission we hereby document the conversion of his system from AREV 3.12 to AREV32 in OpenInsight 8.0.7.

At this stage it is only fair to provide one caveat. This conversion went *very* smoothly. They don't always go that way, so feel free to try this at home but

- 1) Make sure you have a good backup
- 2) Don't be surprised if things don't work quite as we document here

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Whilst the AREV32 Wizard does a lot of the grunt work, in most cases some consultancy will be required from somebody having an intimate knowledge of the AREV32 process to make the resultant system fly.

So without further ado we move onto the conversion of the PROPADM system...

## An AREV32 Conversion – from start to finish

As you can doubtless imagine given the previous caveats, performing an AREV32 conversion is not just a case of plugging and playing. It is generally a good idea to convert the pre-existing data into OpenInsight tables – this ensures that we don't have any unknowns hanging around to bite us. Note that this doesn't mean that we CAN'T leave the data as is and share between AREV32 and AREV but there are some very specific caveats if we wish to do this, namely :-

The data must be at version 3.12 of AREV<sup>2</sup>

The data must all be in ASCII 127 and below (this precludes coexisting with data containing accented characters. When the move from DOS to Windows was made all characters below 128 were left the same, so an A remained an A and a Z remained a Z. However characters above 127 were seen as fair game which is why the <sup>2</sup> we're used to seeing for multivalued becomes ý in OpenInsight and AREV32)

Index updating ought to be carried out by one system (preferably the AREV32 system) as the algorithms for updating are much more efficient in AREV32/OI.

We need to perform some initial setup work using OpenInsight because even though, as pointed out earlier, we're ultimately going to be using terminal emulation to talk to the OpenEngine the tools to convert the data over and to automatically recompile the routines and convert over users and such exist in the OpenInsight environment.

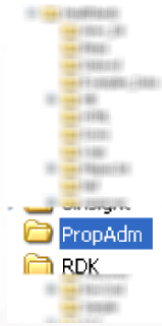
So let's look at the steps required to perform the conversion. We'll document this as though you're an AREV user who has never used OpenInsight before, so if you're an experienced OpenInsight user please bear with us – we were all beginners once.

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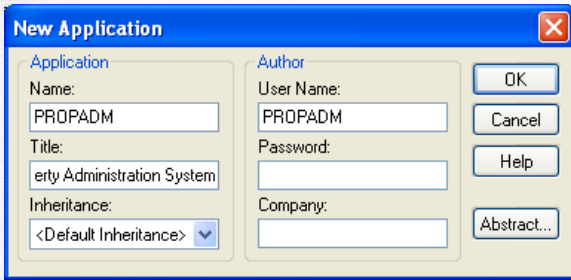
<sup>222</sup> When AREV and OENGINE attach tables they look at the version of the index code in any ! tables and dictionaries and if it is established that the tables are from a different version the ! code and the dictionaries are recompiled to match the current version. OpenEngine uses ! code and dictionaries that are compatible with AREV 3.12 structures, so if your data tables are in AREV 2.0 for example, when AREV 2.0 attaches the files it will recompile the ! code for 2.0 and do the same with the dictionary items. When AREV32 attaches it will see 2.0 code and recompile for 3.12. This will keep happening backwards and forwards with unpredictable results.

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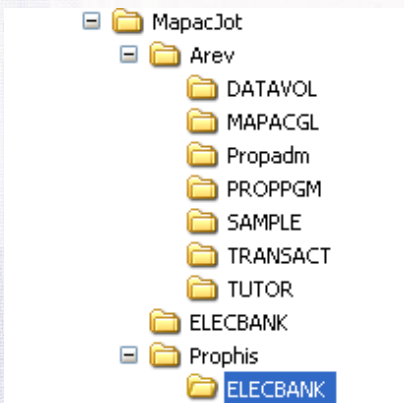
## Step 1 - Create an application with the same name as the existing account



Log into SYSPROG in OpenInsight by launching Oinsight.exe and providing a user name and application of SYSPROG.



Once in OpenInsight choose File, New Application to create a new application with the same name as the application in AREV. In the conversion we're doing the Application is called PROPADM so we'll use these details. We fill them in, then OK this and OpenInsight will create the application and open it for us.



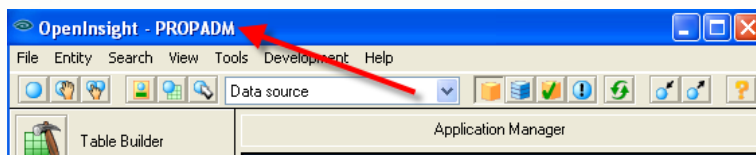
The existing directory structure is as shown:-

Note that the AREV directory and the ELEC BANK and PROPHIS directories are at the same level. To make this easier to copy around we'll create a subdirectory under OpenInsight to contain these three directories.

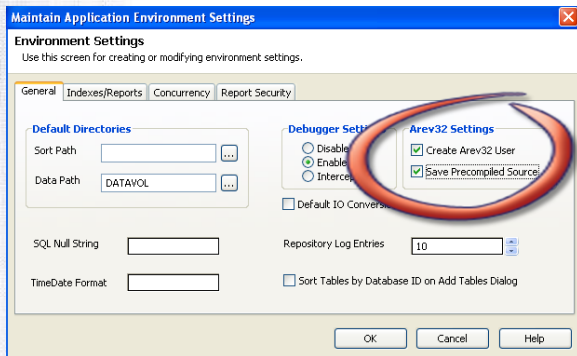
Note that if our application uses absolute pathing rather than relative this will require some changes as the conversion takes place to ensure that the correct directories are attached.

So we create our folder called, in this case, PropAdm. The blurring is purely to protect other client's confidentiality. Now we've got a placeholder folder location we can start the conversion procedure.

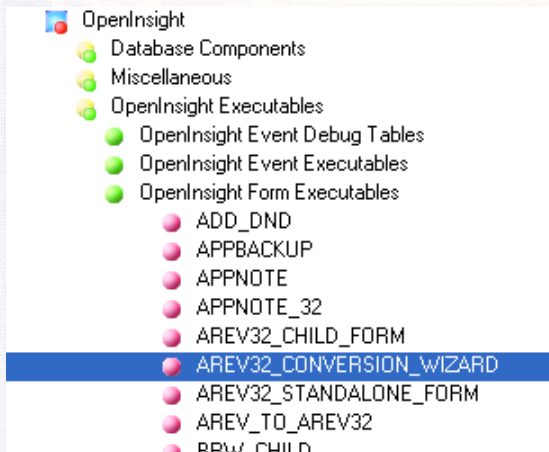
As indicated earlier we should at this stage already be in our PropAdm application. If for some reason we're not (like we've already logged out), we should open the application by launching Oinsight.exe and this time providing PROPADM as the application name and user name.



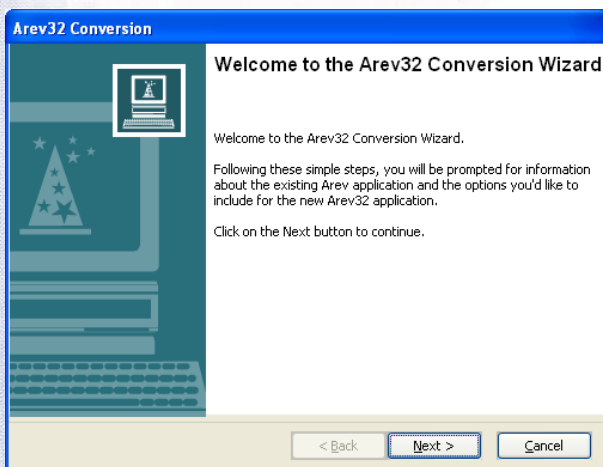
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Now that we're in our application we need firstly to ensure that the Database Manager Environment Settings are set to the AREV32 preferences we require. So from the Tools menu launch the Database Manager. Once in the Database Manager go to the Database menu and choose Environment Settings... – by default we set the following check boxes (this will convert over our AREV users and provide us with valuable insights into why code isn't compiling later) :-



Once this is done, we can OK the changes and launch the AREV32 Conversion Wizard by expanding the OpenInsight node in the application manager (double click it if it is not expanded), expanding the OpenInsight Executables node (double click if it is not expanded), expanding the OpenInsight Form Executables (double click if it is not expanded) and then Shift-Double-Clicking the appropriate entity in OpenInsight Form Executables (AREV32\_CONVERSION\_WIZARD) or EXECing the form from the System Monitor.



The welcome screen appears and we can just click straight through.

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**AreV32 Conversion**

**Existing Application Name**  
This screen is used to get the original Arev account name

Enter the name of the existing OpenInsight account or application name.

Account Name

Enter the name of the existing Arev account or application name.

Account Name

< Back   Next >   Cancel

The system now asks us for the name of the application we wish to convert into (which defaults to the current application) and then asks for the name of the AREV application to convert from.

It makes things easier if we leave these the same.

**AreV32 Conversion**

**SYSTEM Table Location**  
Enter the location of the SYSTEM or SYSENV table

Manually enter the path or choose the location of the SYSTEM table of your Arev application. This is usually the location of the AREV.EXE file from your original system.

Location

In later versions of Arev, the SYSTEM file was replaced with SYSENV. Enter that location instead.

< Back   Next >   Cancel

The system now asks for the location of the AREV SYSTEM or SYSENV file. If you use the browse button the system will fill in an absolute path. We'd recommend removing the drive specification and OpenInsight path and leaving the paths relative.

Relative paths create a lot less hassle for everyone in the long run.

**AreV32 Conversion**

**Application Tables**  
Enter Application File information

Enter the locations of existing Application data files that need to be converted. You'll need to enter both 'From' and 'To' locations.

From Locations	To Locations
mapacjot\arev	propadm\arev
mapacjot\arev\proppgm	propadm\proppgm
mapacjot\arev\propadm	propadm\propadm
mapacjot\elecbank	propadm\elecbank
mapacjot\prophis	propadm\prophis

Double-Click on a cell for options.

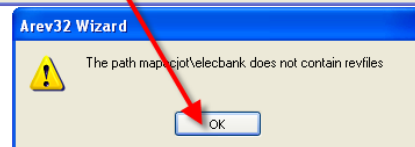
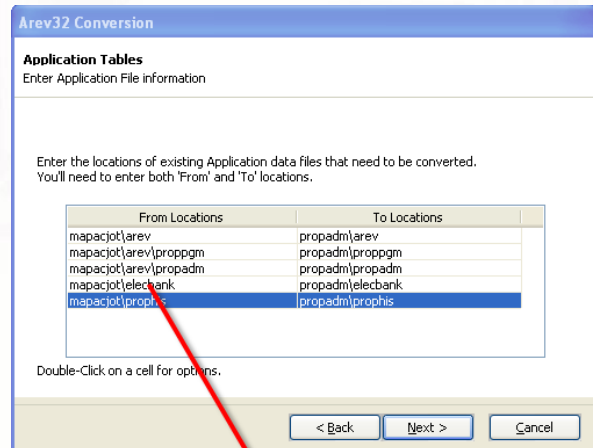
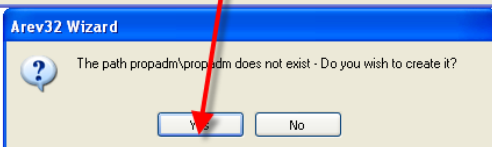
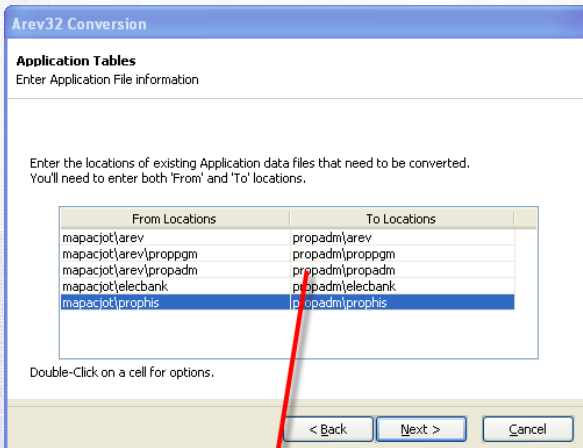
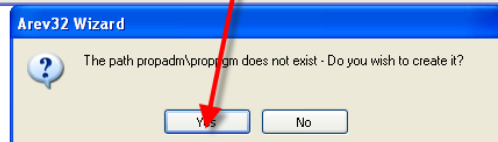
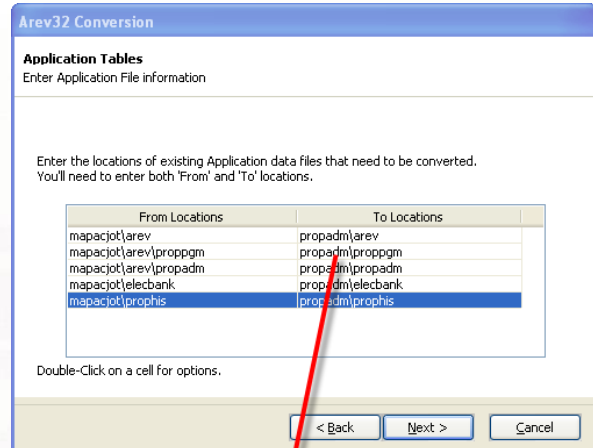
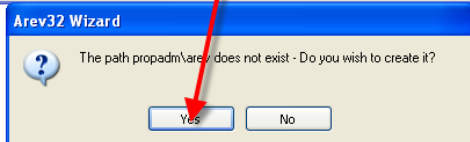
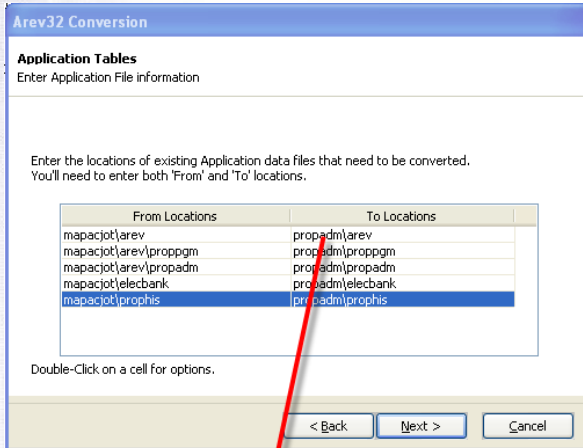
< Back   Next >   Cancel

Now we're asked for the location of any data tables. In the first instance we'll choose all of the folders we suspect contain AREV files, erring on the side of caution :-

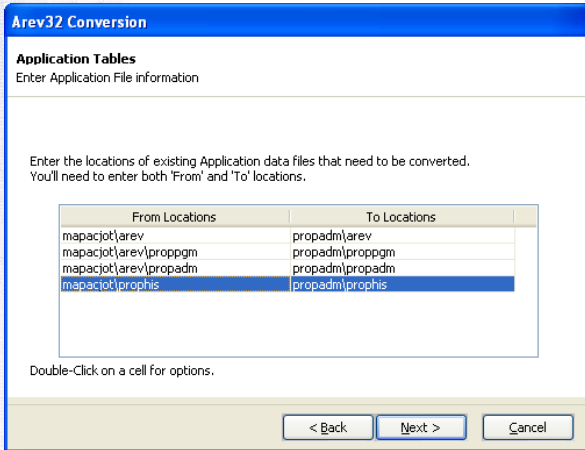


# SPREZZATURA

For each subdirectory that the system cannot find it prompts to ask us if we'd like to create it. Naturally we're going to indicate that we do wish for this.

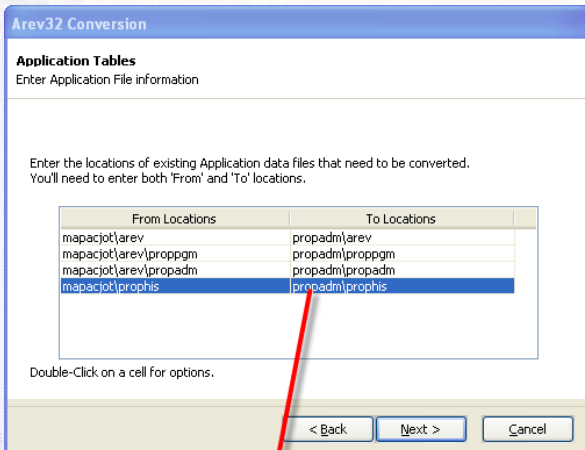


# SPREZZATURA

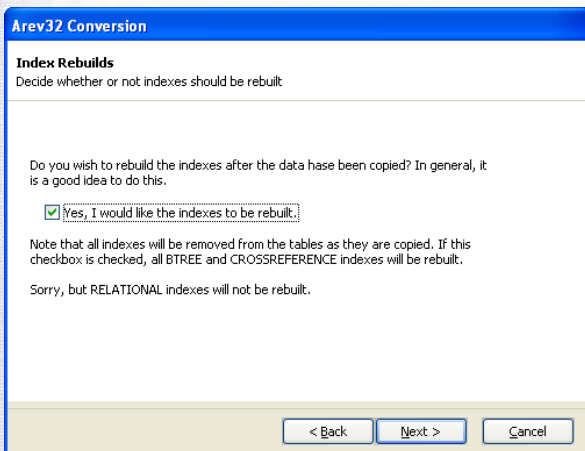
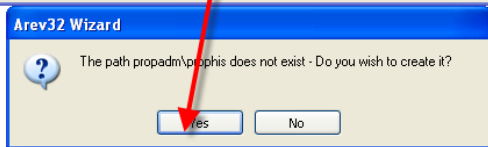


As it is doing this the system is actually checking to see if REV files exist in the locations we're asking to be converted. If they don't, there is nothing for the wizard to do, so the wizard displays an error message like the one above

If we OK this, bizarrely the wizard **stops processing!** So we have to go back to the original screen, remove the errant entry and go again. At least this time it has created the subdirectories where it is up to so doesn't re-prompt for these.

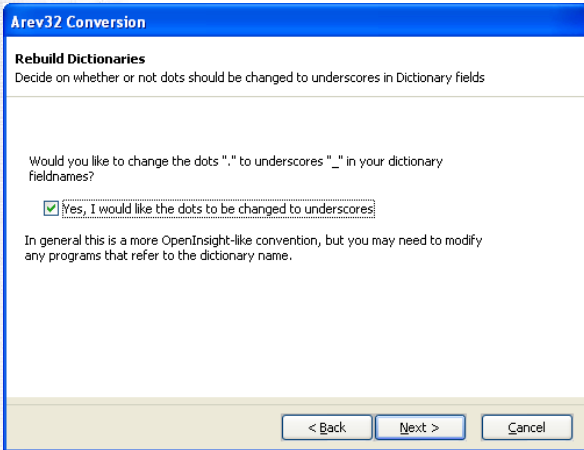


Just for the remaining uncreated subdirectory.



Now for a series of questions that will dictate how the conversion takes place. If you're going to want to parallel run with an existing AREV 3.12 system then you're not going to want to accept any of the coming prompts and if your system is pre AREV 3.1 you're not really going to be able to share data so you have little choice other than to accept the forthcoming prompts. Note the caveat relating to relational indexes.

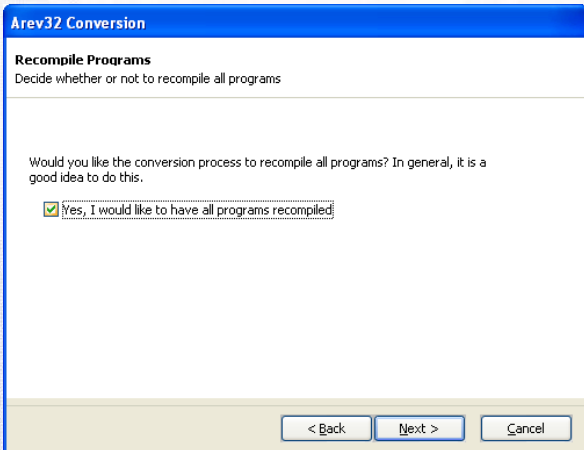
# SPREZZATURA



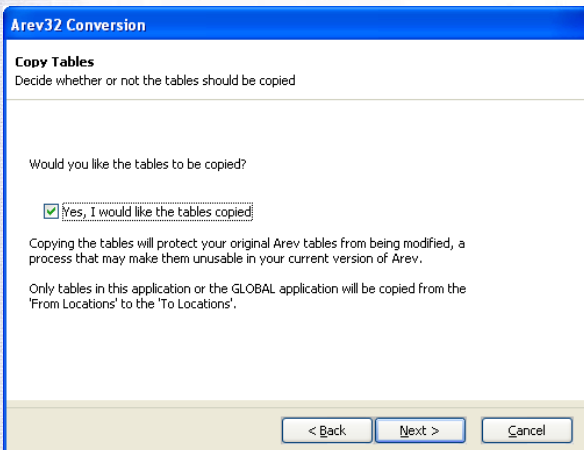
Now onto a "damned if you do, damned if you don't" question.

If you allow the system to convert periods to underscores then some of your programs will no longer work. The system will attach an MFS to the dictionary file which will try to return the \_ version when the version is asked for but this will not fix references in your entry screen to index lookups like FIRSTNAMES.XREF.

If you don't allow the system to make the change then things will continue to work BUT if you have a key field with a period in the column name, the OI form designer will become confused as it will see this as a Table.Column SQL reference and complain about missing join fields. To get round this you will have to identify all key columns and create synonyms without periods and use these in the entry forms.

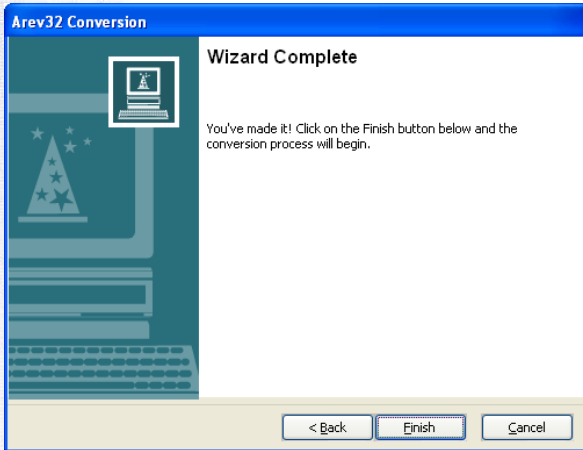


It's tough to see WHY you wouldn't want the programs recompiled because they won't work if you don't – but perhaps if all you're doing is a data conversion this might be relevant. The system will look through the VOC file to determine which tables actually contain source code when recommending tables to compile later.

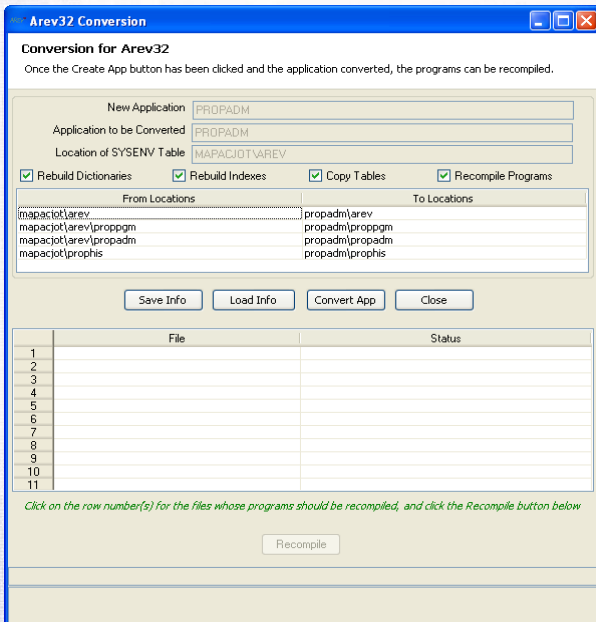


Finally whether we want to copy the tables.

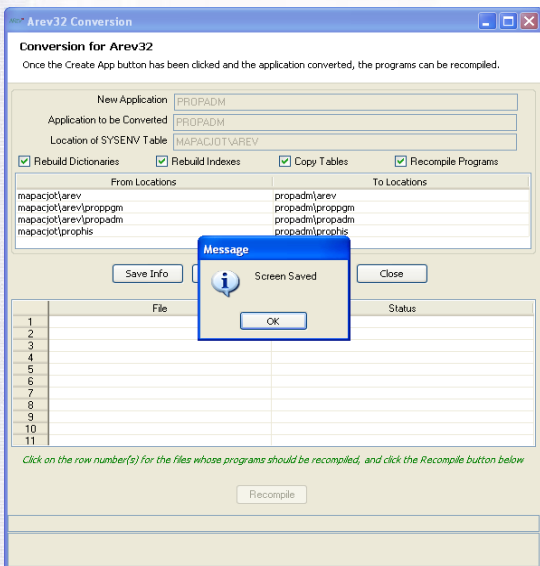
# SPREZZATURA



And the closing wizard screen, which again can be "Finished"



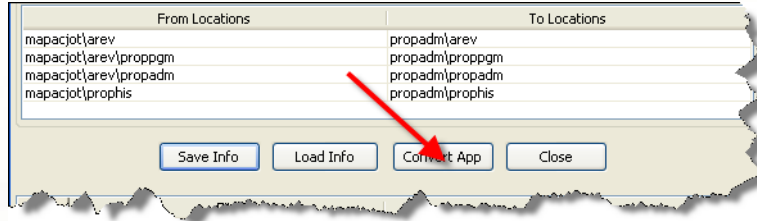
Now that we've provided all of the information required for the conversion we can pause for a moment and save off our definitions if we wish to by clicking the "Save Info" button.



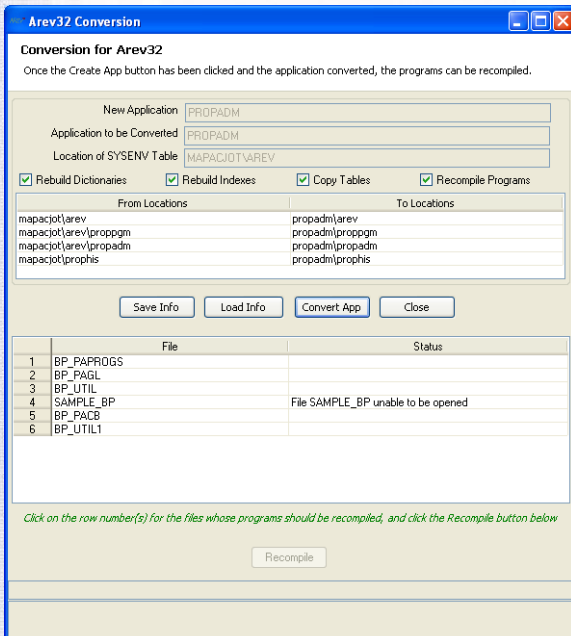
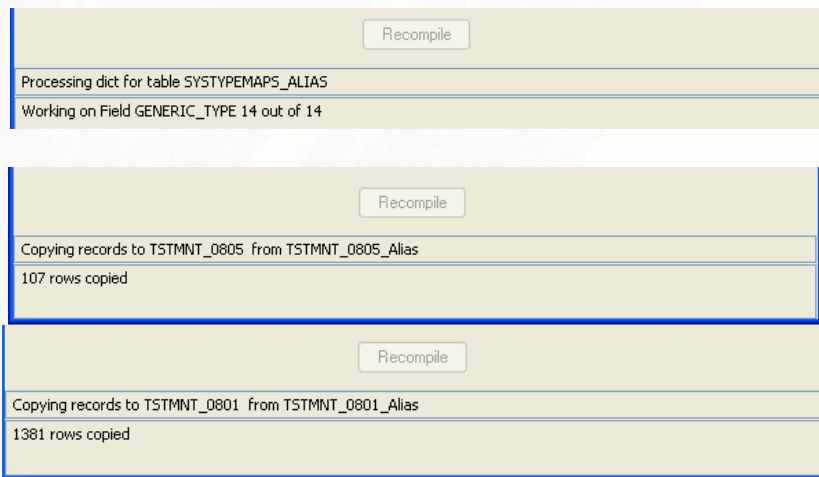
So hit the Save Info button. This stores off all of your answers in a row in SYSENV called AREV32\_SCREEN\_RECORD\_PROPADM.

# SPREZZATURA

If we wanted to, we could exit the screen at this point and return later by shift-dblclicking the AREV\_TO\_AREV32 form. However with a view to finishing this some time before Xmas we'll carry on and click on the Convert App button.



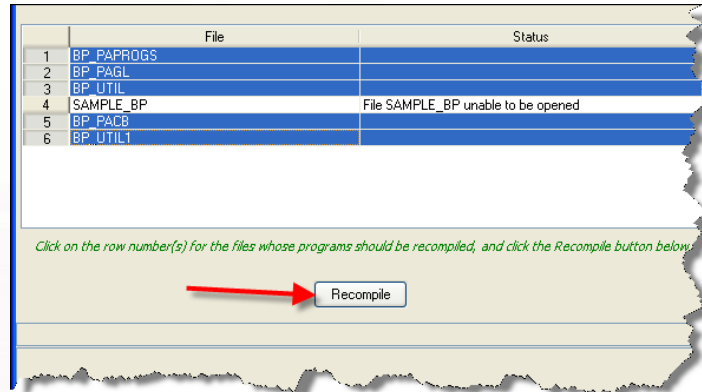
The system now works through all of the files following our instructions and displaying progress as it goes.



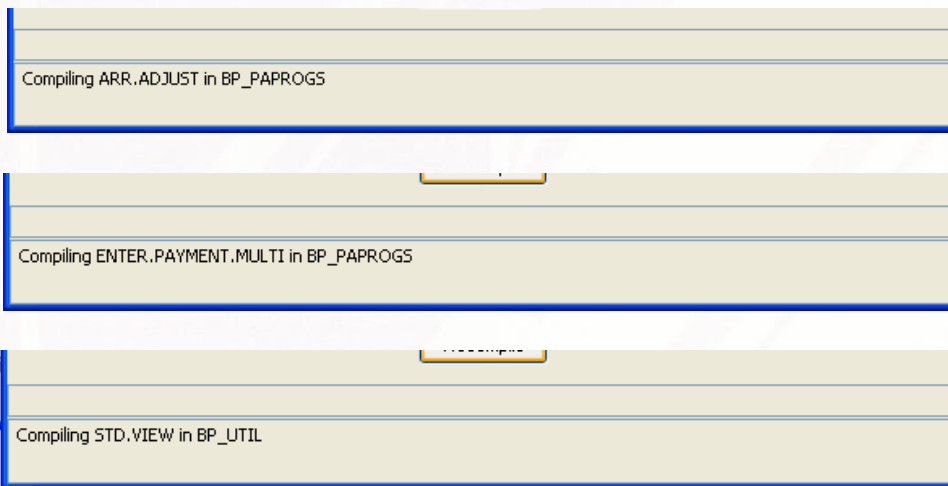
When this completes, the system knows where our programs are and displays the tables it intends to attempt to recompile.

# SPREZZATURA

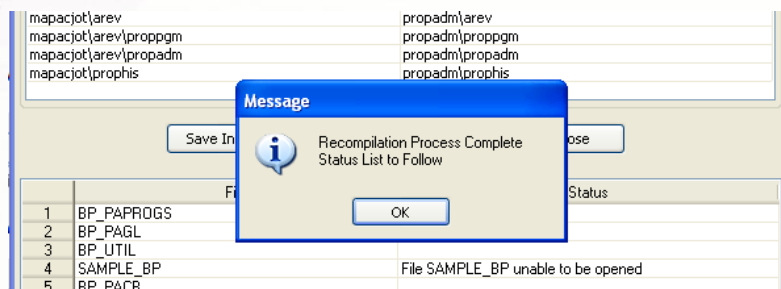
We can select just the tables we wish to process for recompilation and click the recompile button. Note that the system looks in VOC to work out which files contain programs so for historical reasons it might contain rogue pointers like this one to SAMPLE\_BP.



Again we are kept informed of progress

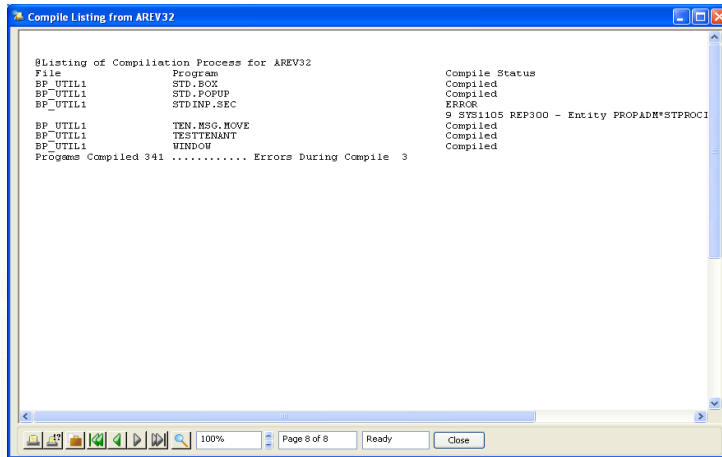


When complete, the system tells us what it is about to do – which is to display a printout of the progress of the recompilation exercise.

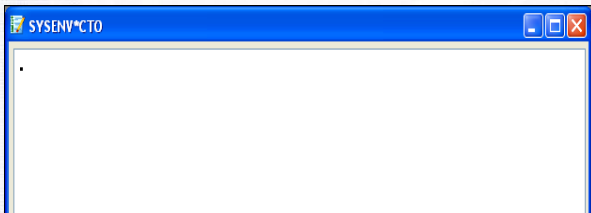


# SPREZZATURA

The list appears and at the end the errors are summarized.

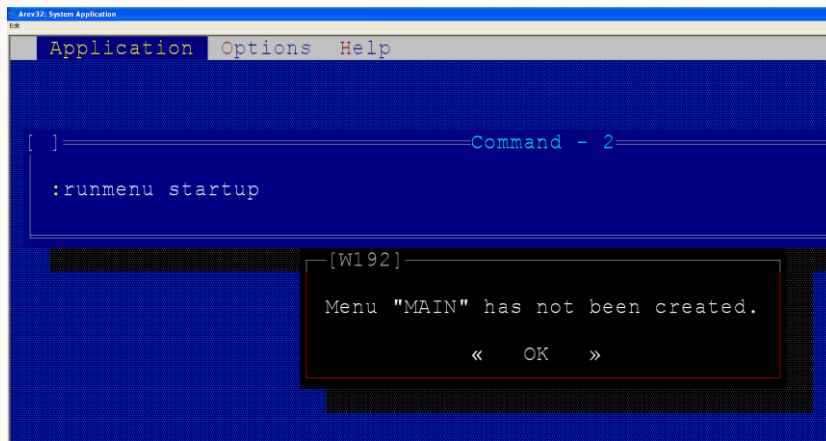


Note that in the case of this conversion there were very few errors and that these errors related to inserts not being found – a common error. So let's save the PDF for reference and log into AREV32 and look at what's happened.



For the most efficient processing we recommend using AREV32 configured to use a local engine. This provides optimum performance, but does mean that if we're running AREV32 from OI we will be consuming 2 licenses. To ensure that we are using a local engine, edit the CTO row in the SYSENV table and replace whatever is in there with a period.

Now that's done we can launch AREV32. We do this by Shift-Dblicking on the AREV32\_STANDALONE\_FORM. The system runs through the logon procedure and in the case of this conversion we receive a message that the Menu "MAIN" has not been created.

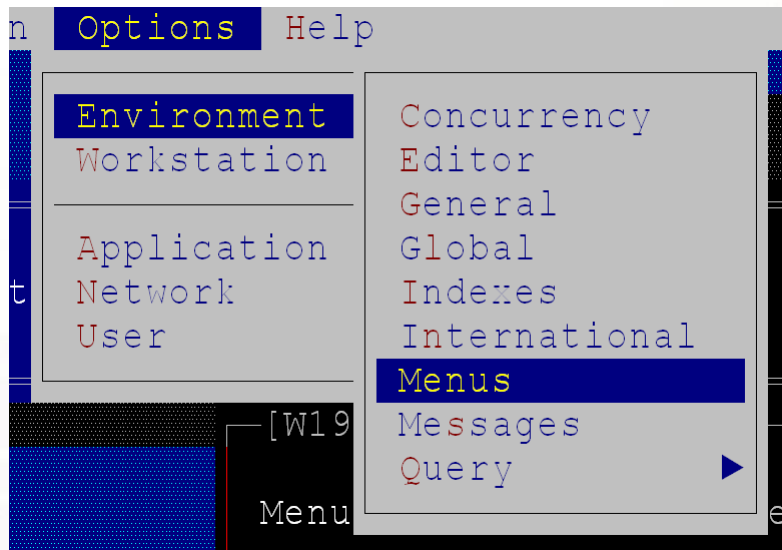


# SPREZZATURA

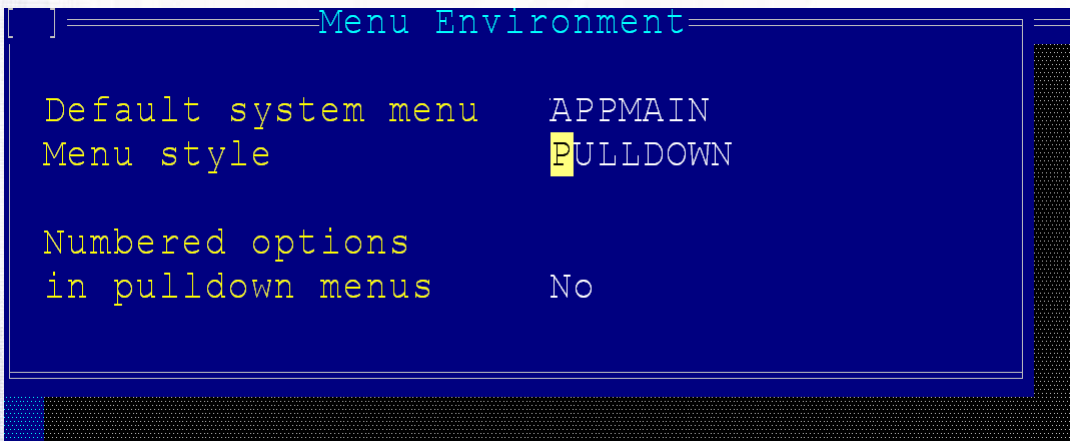
Stating the obvious, this is caused by the fact that menu MAIN has not been created.

The conversion assumes that the main entry point for the default application menu will be MAIN.

Naturally this isn't the case, so we have to rectify this. So just press F5 to get into TCL and type RUNMENU STARTUP. Choose Options/ Environment/ Menu



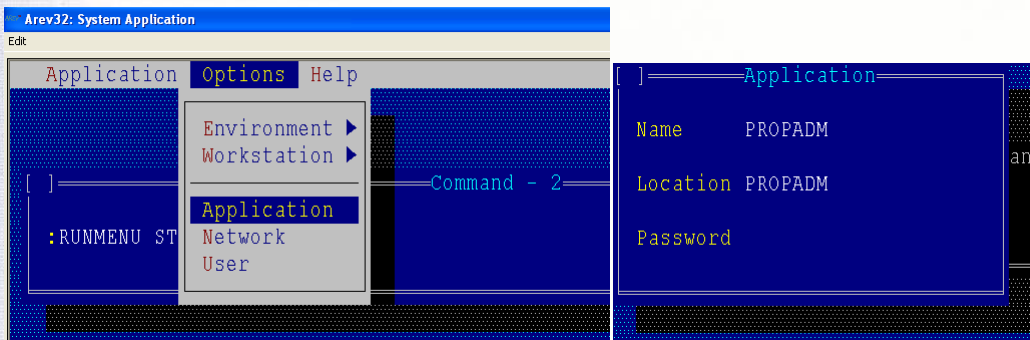
Modify the default system menu to be APPMAIN.



Save this, logout and try again.

This time we get a message that the system is unable to attach PROPADM – so let's see what's going on here.

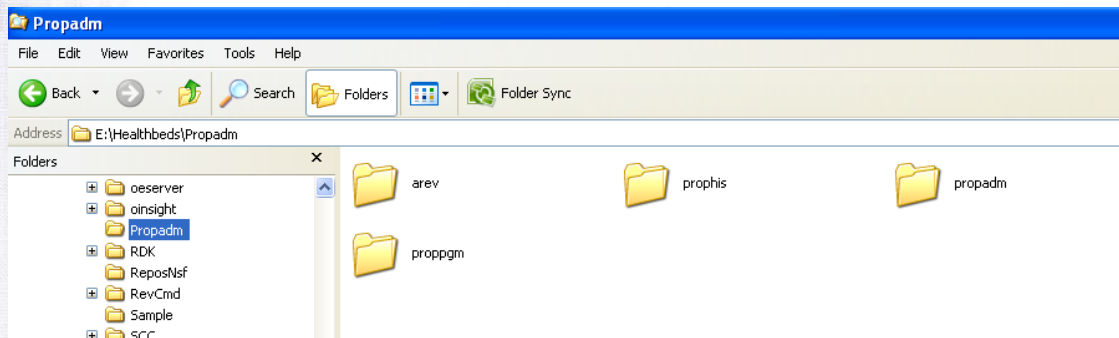
Press F5, RUNMENU STARTUP, Options and choose Application.



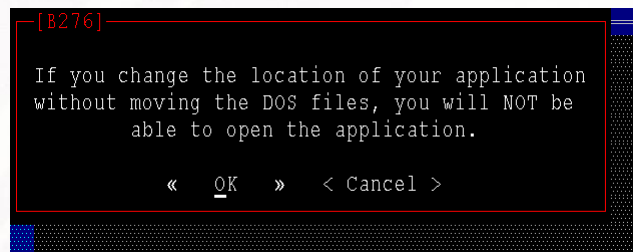
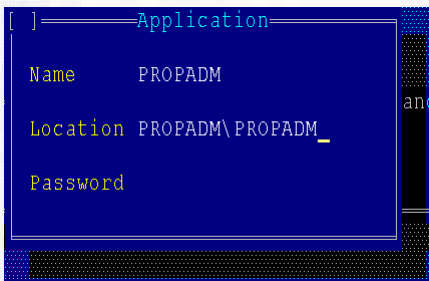


# SPREZZATURA

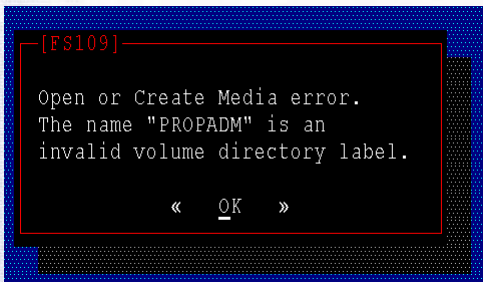
And there's the problem – our PROPADM is actually UNDER PROPADM not the default directory



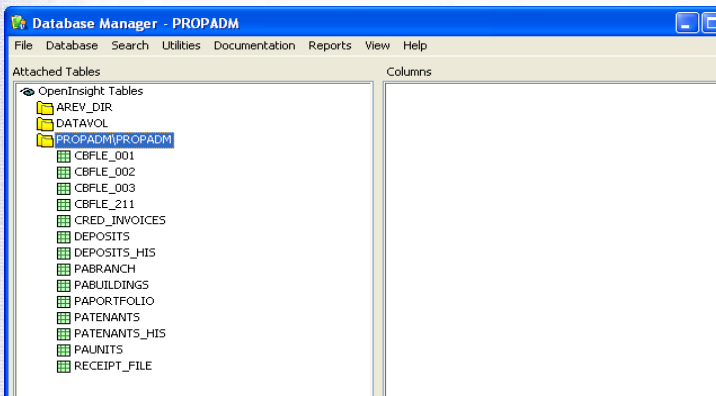
So let's change our definition



So we accept this, go back to our PROPADM application and retry the AREV32\_STANDALONE\_FORM, and this time...

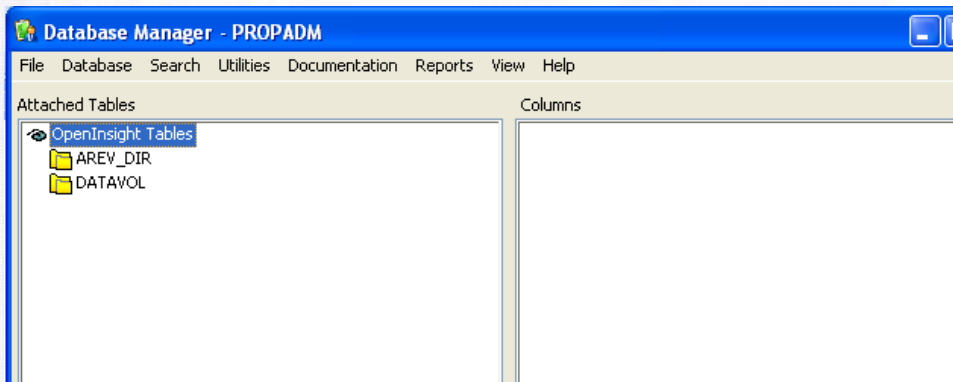
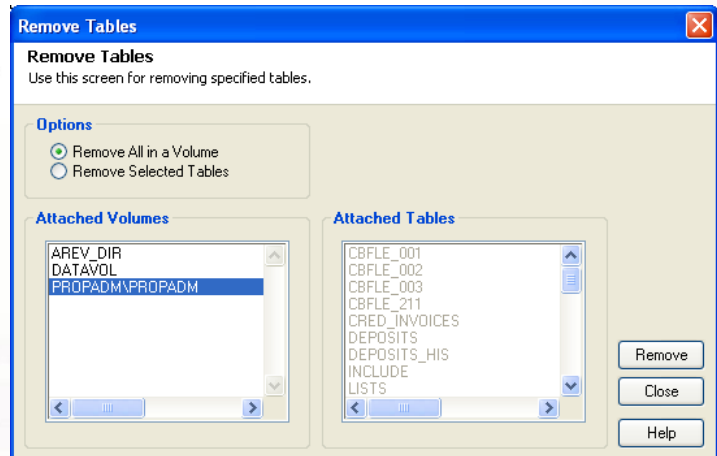


So let's take a look in the Database Manager :-

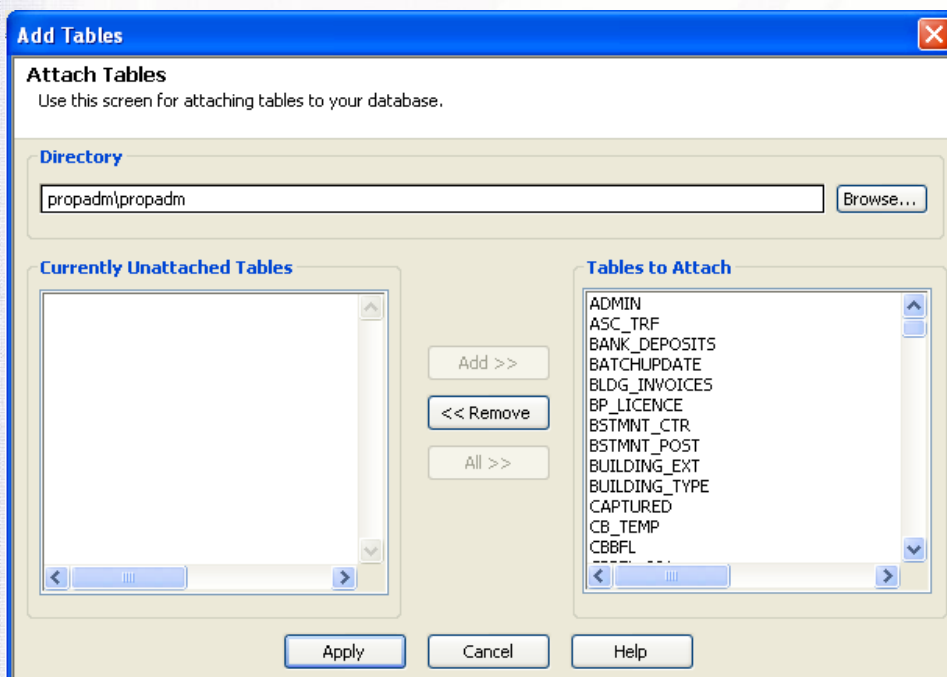


# SPREZZATURA

We're missing a LOT of files and none of them seem to have dictionaries. So let's detach them all.

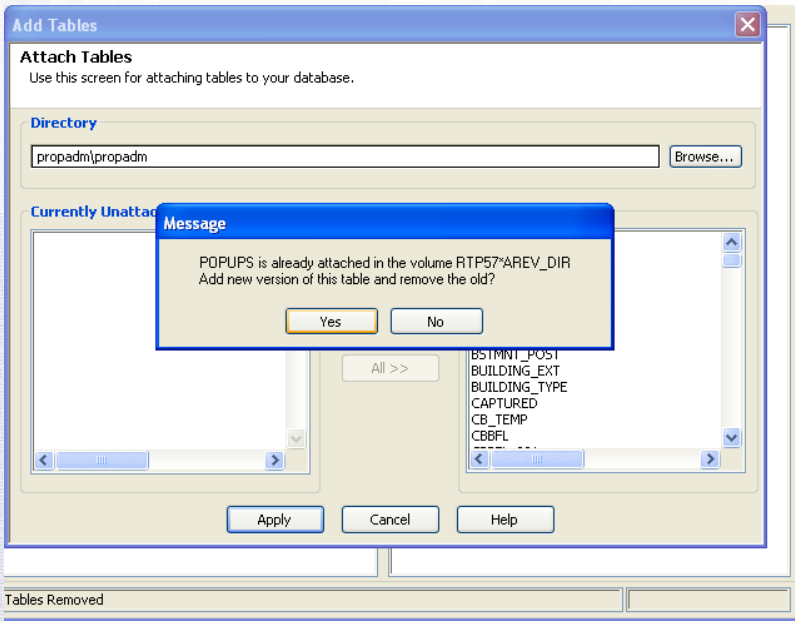
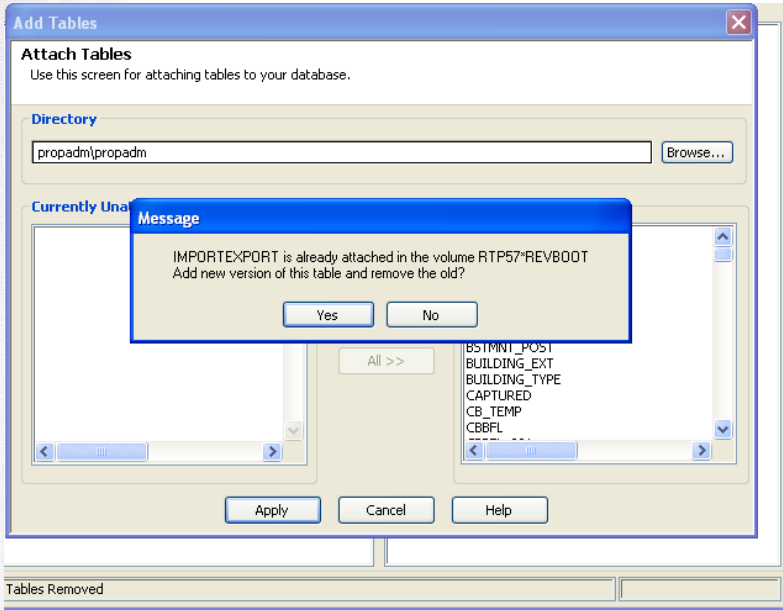


Save our database definition by using Database/Save in the Database Manager, and then use File/Add to put them all back :-

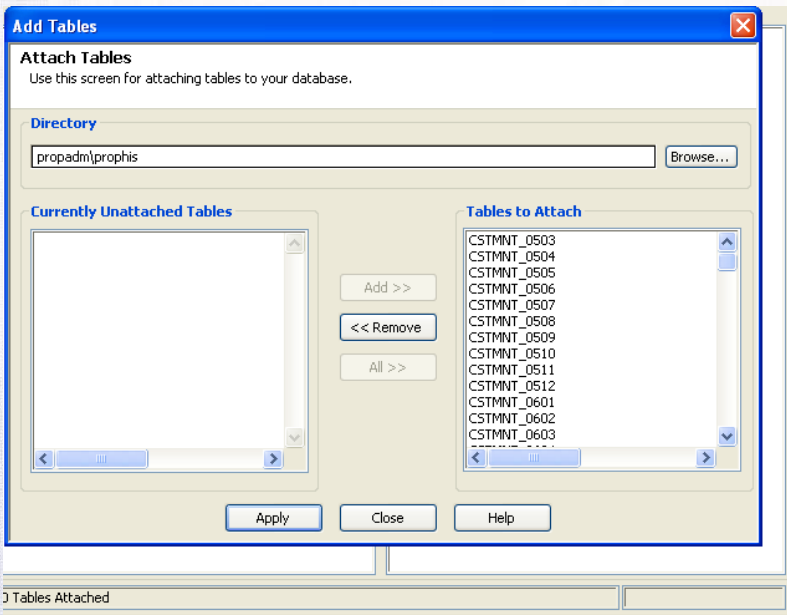
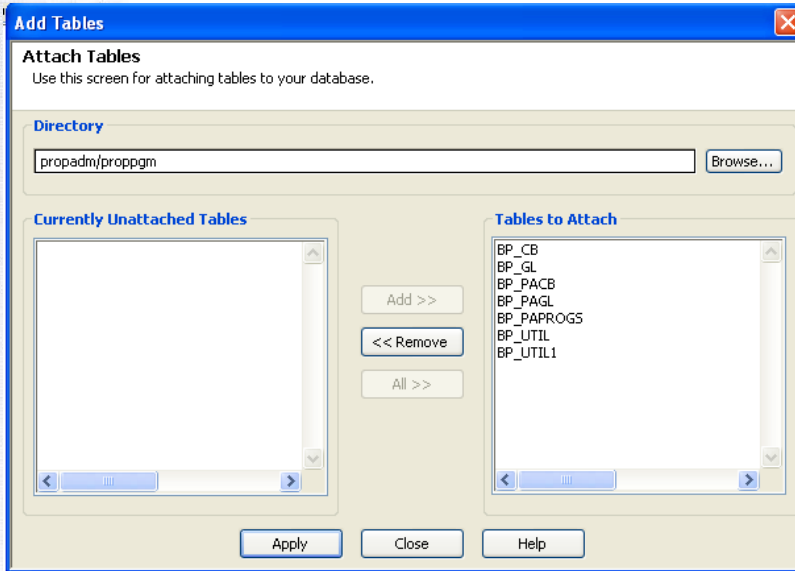


# SPREZZATURA

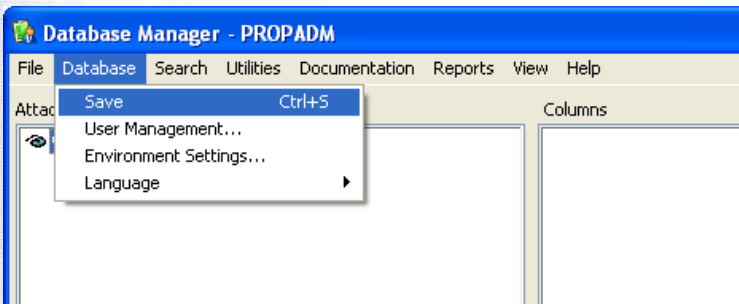
Some of the files will be duplicated. If they're duplicated in the AREV\_DIR then we DO add the new and remove the old. If they're duplicated elsewhere it's down to our preference.



# SPREZZATURA



And again save the database.

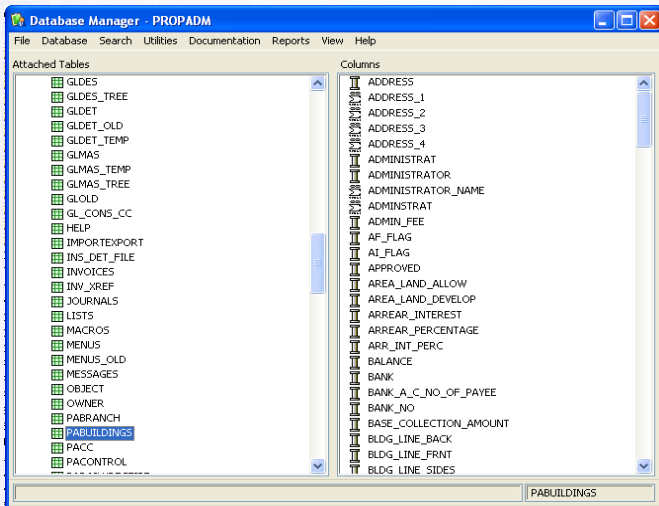


# SPREZZATURA

And time to once again try logging into AREV32. Sadly there's still no joy

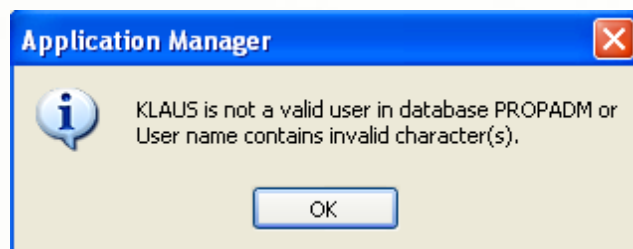
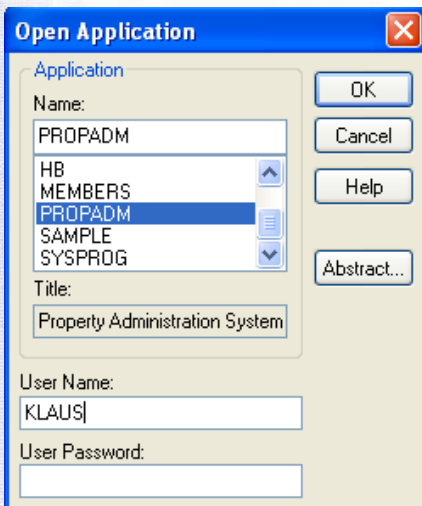


Firstly let's check - are the dictionaries there?



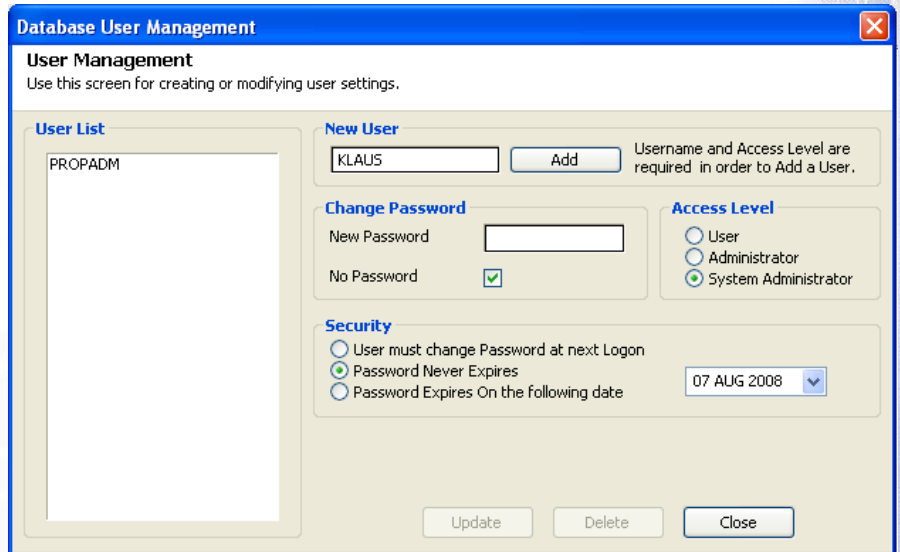
Yes – so guess we'll have to look elsewhere for our problems...

Let's try logging in as one of our converted AREV32 users and see if that makes a difference. We know that we asked the conversion process to convert over our users – so user KLAUS must exist. So we'll log out and then try to log in again as KLAUS.



# SPREZZATURA

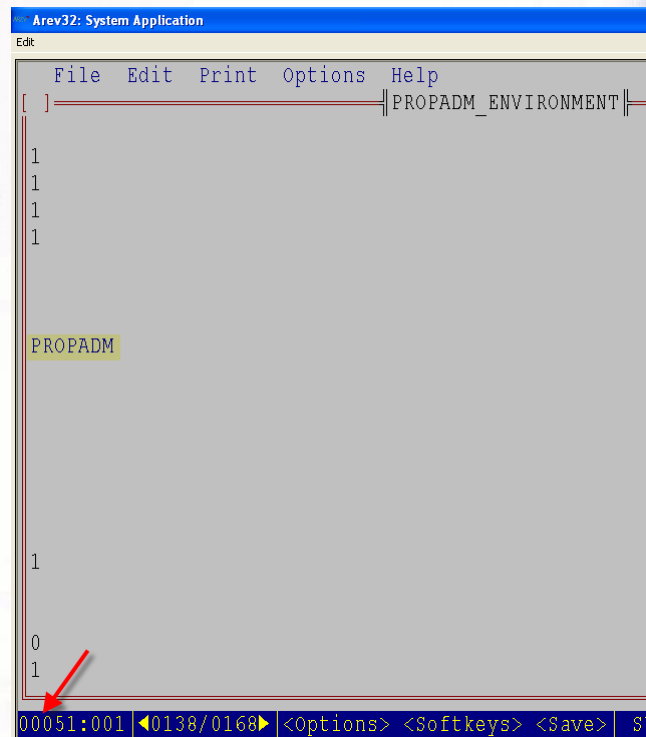
No joy. Klaus exists as an AREV32 user but not as an OpenInsight user. So let's use the User Management screen in the Database Manager to add this user.



Still no joy – we get the same error message. So let's look more closely at the login commands in SYSPROG's SYSENV table where the environment for PROPADM is stored as row PROPADM\_ENVIRONMENT.

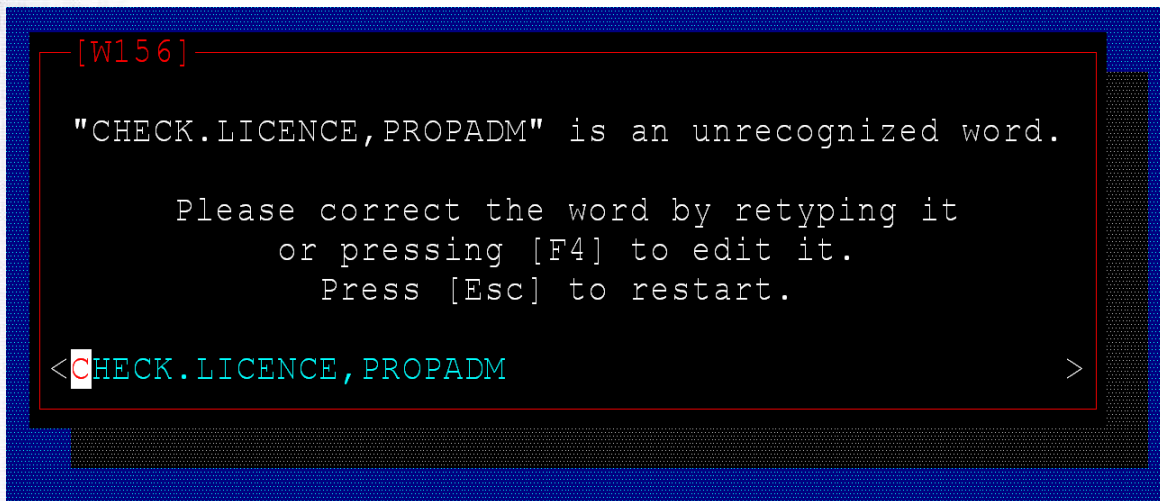
Column 51 contains the name of the default directory where the application's VOC file is deemed to exist. We can see that in this case AREV32 is looking for the VOC table in the PROPADM subdirectory BUT we know that we've actually created it in the PROPADM\PROPADM subdirectory. So we modify field 51 and save the row again.

PROPADM/PROPADM\_

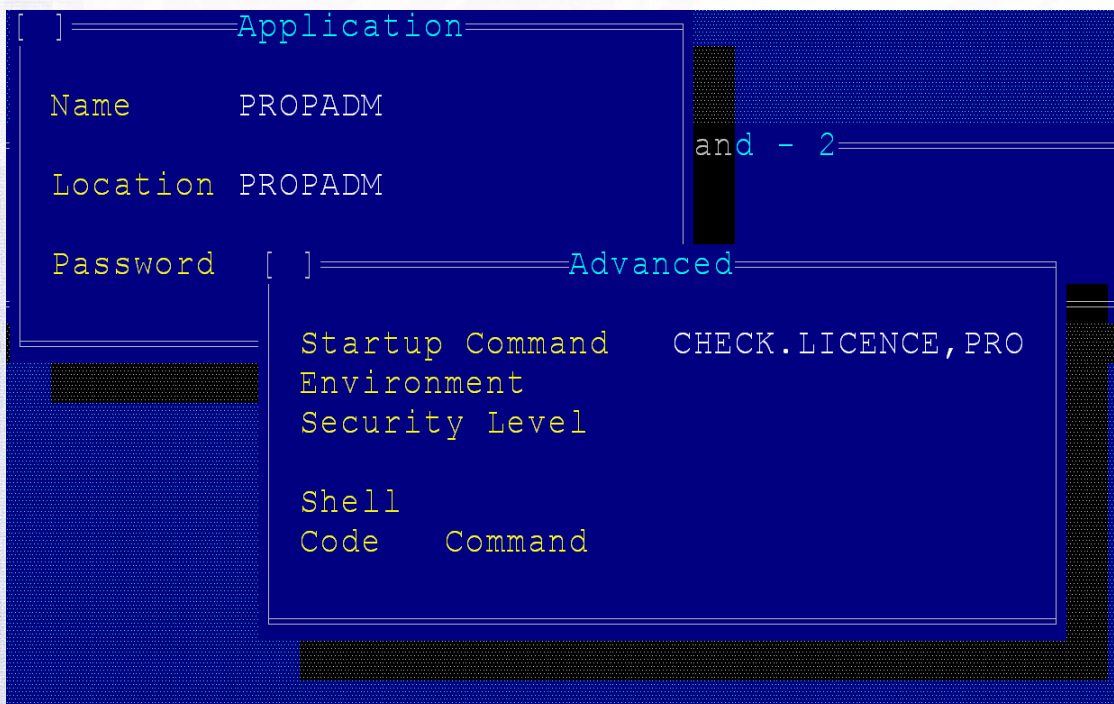


# SPREZZATURA

Once again we logIn as Klaus – and a result a different error message!

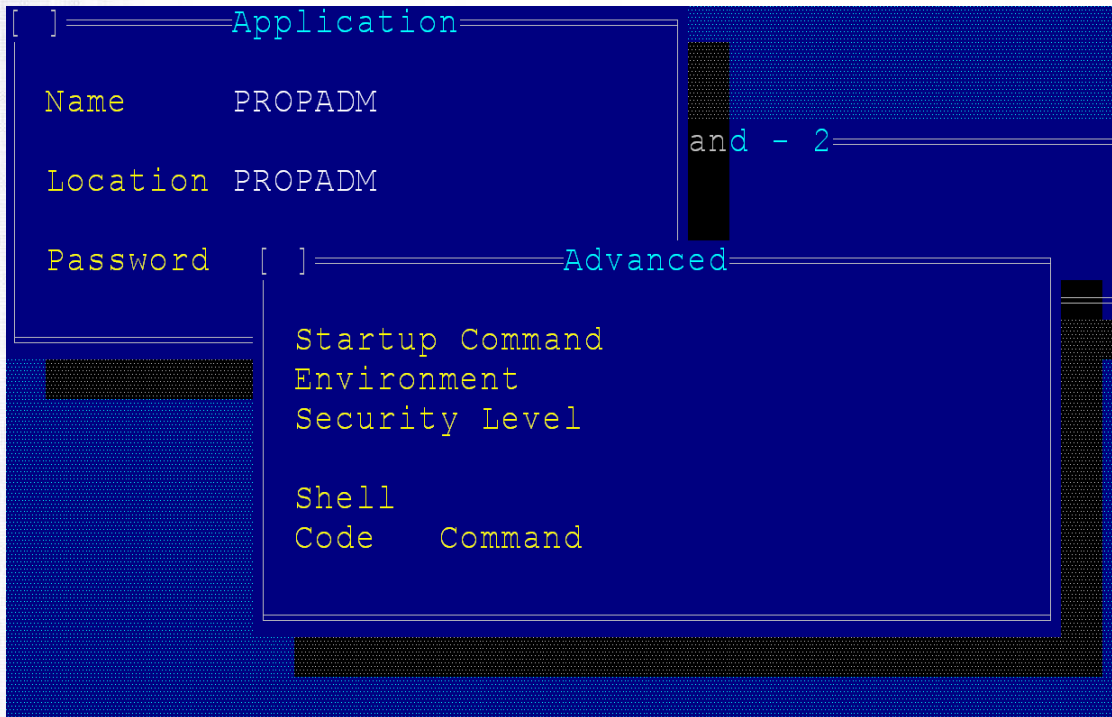


This is actually straightforward – it must mean that the startup command is wrong in the environment. So we log into SYSPROG (by opening SYSPROG in OpenInsight and running the AREV32\_STANDALONE\_WINDOW and we RUNMENU STARTUP and access the Application menu and look at the Advanced window.

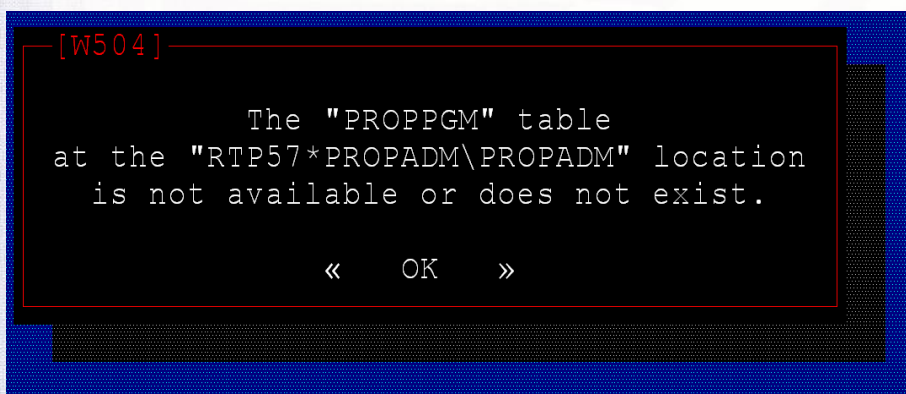


# SPREZZATURA

And we blank this down. Note we're only able to do this because we're no longer interested in running this test. If we wanted to run the test there would still be additional investigation required at this point.



Finally we're able to try logging in again – and we do – only to be presented with another error message.



This is coming out of the PROPADM VOC logon row self title PROPADM. So we edit that





# SPREZZATURA

And we see that the attaches expect the tables to be directly under AREV32. As we've previously explained, in our conversion they aren't, they're under directory PROPADM.

```
File Edit Print Options Help
[ ] _____|| PROPADM ||_____
TCL
ATTACHTABLE PROPPGM
ATTACHTABLE PROPHIS
```

So we modify the VOC entry to include the new directory and save.

```
[ ] _____
TCL
ATTACHTABLE PROPADM\PROPPGM
ATTACHTABLE PROPADM\PROPHIS
```

And FINALLY we can now log in OK.

```
Arev32: Property Administration System
Edit
Define Run Utilities DB Admin Exit Help
```

But the moment we press F5 to invoke the TCL Window we crash straight to the debugger...

```
Arev32: Property Administration System
Edit
Line 72 broke because a run time error was encountered.
!_
```

This is bizarre – linemarked breaks – as a general rule of thumb system routines are compiled without linemarks so what are we doing at line 72? Well if there are linemarks perhaps there is code? So let's G1 and L20

# SPREZZATURA

```

Arev32: Property Administration System
Edit
0002: *#ADDED 1,2,3,4,5,6
0003: *#ORIGNAME WINDOW
0004: *#FLAVOR AREV32
0005: *#SOURCE BP_UTIL1
0006: *#CTO
0007: *#Precompile
0008: Call DO_PROMPT(')
0009: *PRECISION 0
0010: COM INPUT.DATA, PASS$, SENDCHAR, KBLOCK, KBREL, SLIST(50), PORT, CON, COF, BBBD, BBB
I, BBBU, BBBDBI, BBBDBU, BBBDBIBU, BBBIBU, BDBI, BDBU, BDBIBU, BIBU, CURS.POS, EB, FILE$(50)
, RW$, RW, PASS, TIME, CS, NL, CR, BB, RB, FF, BD, ED, BS, CU, PON, POF, BI, EI, BU, EU, SB, SF, CF, CA,
NULL$, DAY, INN, INP$, INPUT$, IN$, ERR, SX, LP, SP, LNN, LNO, LAST.KEY(50), LAST.SEQ, FILE.NA
ME, IN.KEY, KEY.LEN, FILENAME, FILE.NO, KEY$
0011: *****
0012: ***** WINDOW can draw a box from the cursor position *****
0013: ***** stored in CURS.POS. e.g. CURS.POS=0609 indicates*****
0014: ***** the box must be drawn with the top lefthand *****
0015: ***** corner on line 9, tab 6. *****
0016: ***** *****
0017: ***** In user pgm enter as: *****
0018: ***** CURS.POS=3005;SX=35;SENDCHAR=3;CALL WINDOW *****
0019: ***** this draws a box 35 chars wide & 3 lines *****
0020: ***** deep from (30,5) *****

```

Now there's a turnup for the books – the client has their own (deprecated) routine called WINDOW which was never compiled in their system but which obviously still had a VOC pointer hanging around pointing to it. So to make this work we must delete the VOC pointer for WINDOW so that the system will once again use the “proper” version. We'll do this from OI as it is easier.

```

System Monitor
run delete_row "VOC","WINDOW"

```

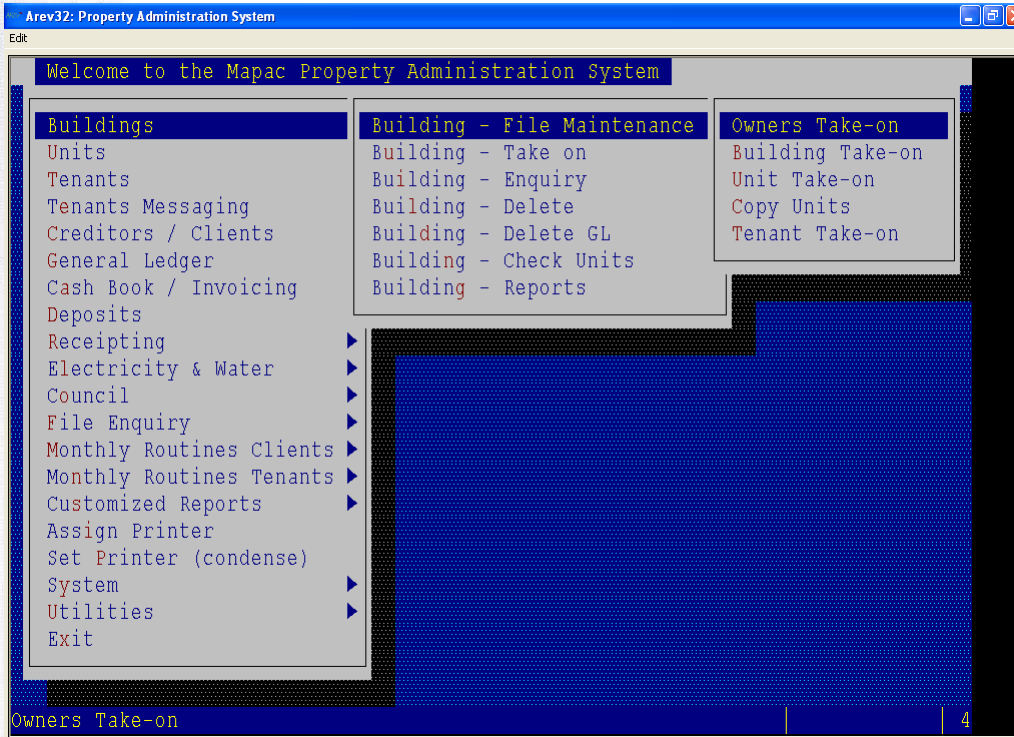
and finally we have TCL access and working menus!

```

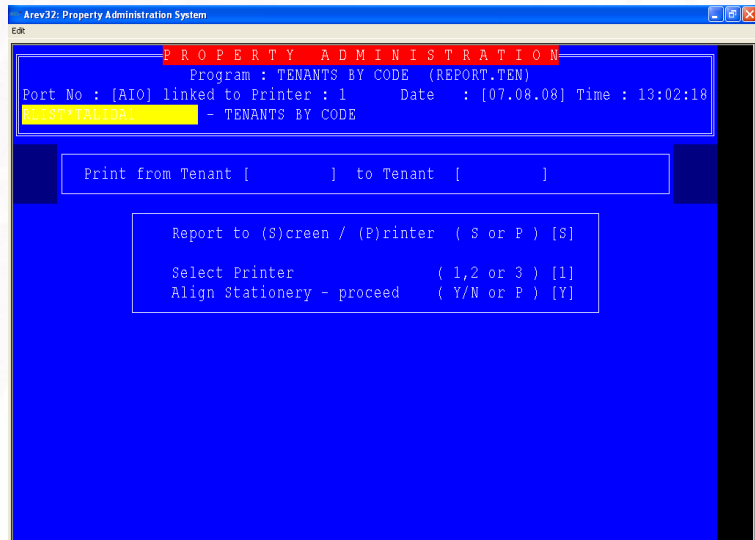
Arev32: Property Administration System
Edit
Define Run Utilities DB Admin Exit Help
[ ]-----Command - PROPADM-----
:
_

```

# SPREZZATURA

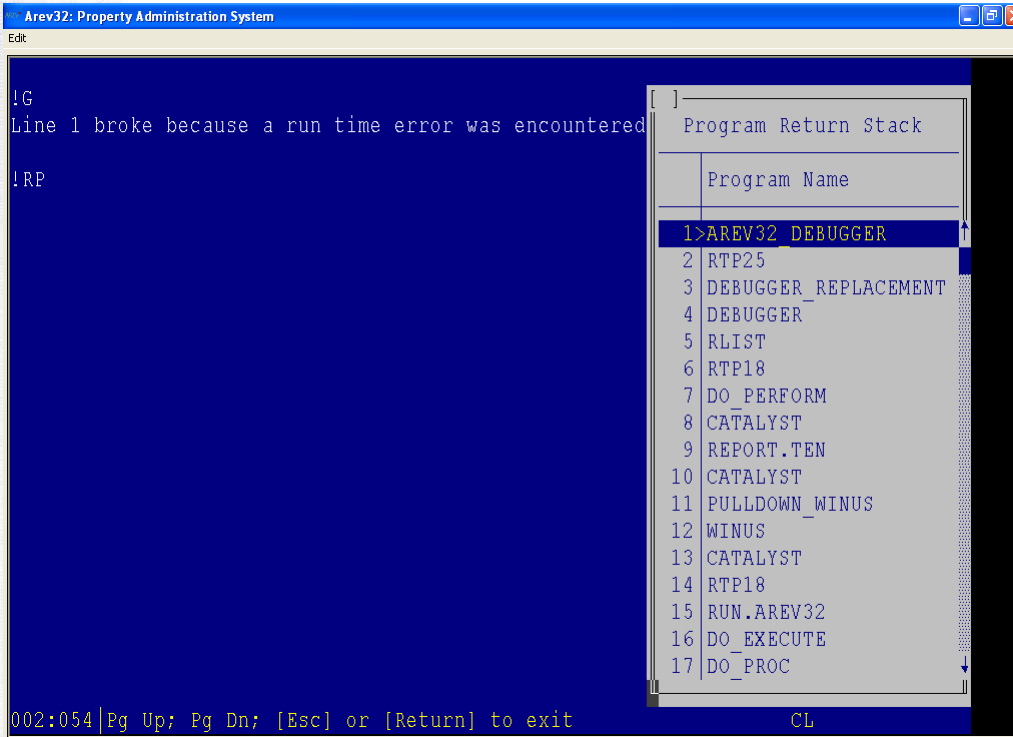


So let's try running some of the custom screens. This particular one prompts for a series of parameters and then performs a straightforward list report. It doesn't get much easier than that so why...

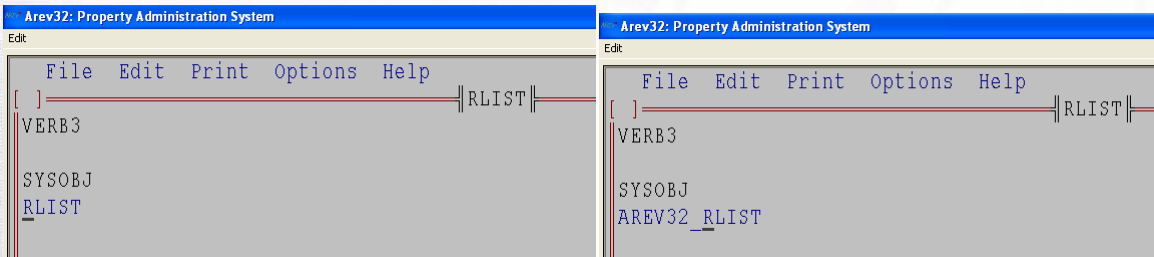


Do we drop to the debugger? Let's see how we got here – so RP <enter> tp get the return stack in a popup. Counting from 11 we can see that we came out of the menu into a program called REPORT.TEN. This obviously tried to perform a LIST statement so the thing that caused the debugger to be invoked was RLIST.

# SPREZZATURA



This is a Revelation "Gotcha". For AREV32 we don't want to call the OpenInsight version of RLIST we want to call an AREV32 specific version. So we need to modify the VOC entry for RLIST to point to AREV32\_RLIST.



And once that has been done, the report works as expected. Well NEARLY as expected. One of the cool things about AREV32 is that you can choose whether your output should go directly to the default printer with standard escape codes, whether it should go to a specific network or local printer or whether it should go to OIPI so that it can be previewed or saved to file.

To invoke these features we need to run up the Printer Environment Window and on Printer Name press F2 – thereby invoking another Revelation "gotcha" :-

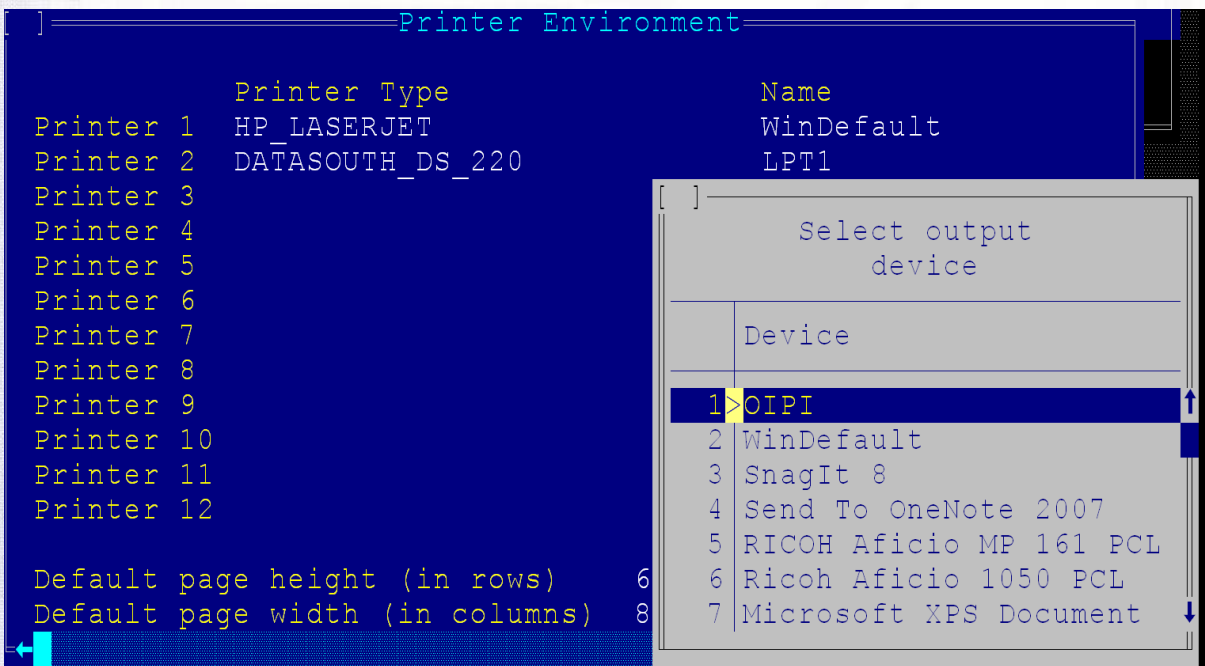
# SPREZZATURA



For some reason the version we were working with here shipped with a dud VOC pointer for POPUP\_PRINTERS that referenced a table called JEFF – so let’s just delete that VOC entry and let the system fall back to default behavior.



And now we can choose the printer we want.



# SPREZZATURA

In addition, AREV32 permits the definition of specific sized printers such as this one which we're going to define as being suitable for compressed print – to 60 deep but 140 characters across.

```

] Printer Definitions

Printer OIPI-PORTRAIT

Page height      60
Page width       140

Print Styles      Begin          End
Bold
Italic
Underline
Subscript
Superscript
Enhanced
Wide

Printer Control

Initialize
Prelude
End of Job
  
```

And to ensure that this IS compressed we scroll to Page 3 and set the regular font name and size to be Courier New 6 pt.

```

] Printer Definitions

Printer Processes

Code  Command
Open
Close

Force form feed at end of job? [Y/N]

Orientation P

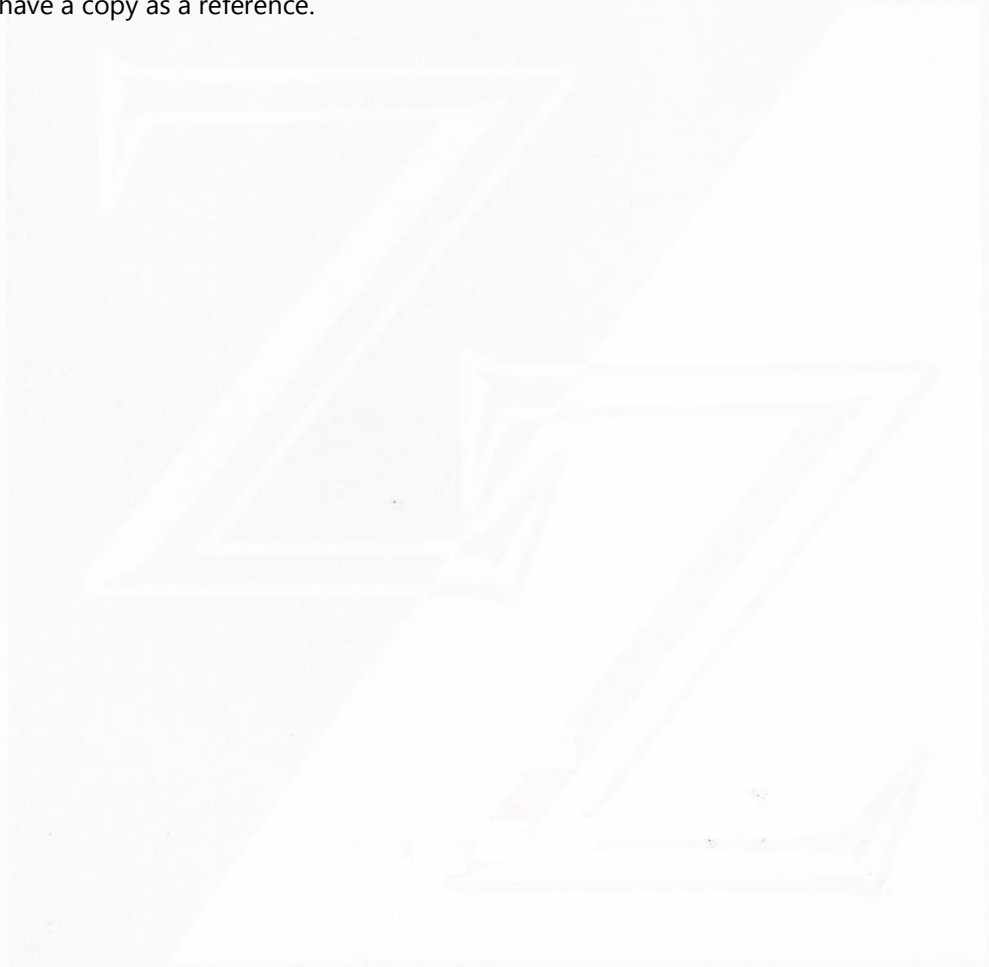
OIPI Fonts
Regular Font Name  COURIER NEW
Bold Font Name
Regular Font Size  6
Bold Font Size
  
```

# SPREZZATURA

From hereon in, we are able to define our reports correctly and for the most part that was the conversion completed.

As we said at the beginning this was quite a simple and straightforward conversion but we hope that it has at least given you a taste for the possible complexities you might encounter when undertaking your own conversion!

If this is something that you'd be interested in exploring then contact Martyn on [mp@sprezzatura.com](mailto:mp@sprezzatura.com) for a look at a hybrid ARev32/OI example application using WebEx – he might even let you have a copy as a reference.



# SPREZZATURA

## S/PBS – Phone Billing Software

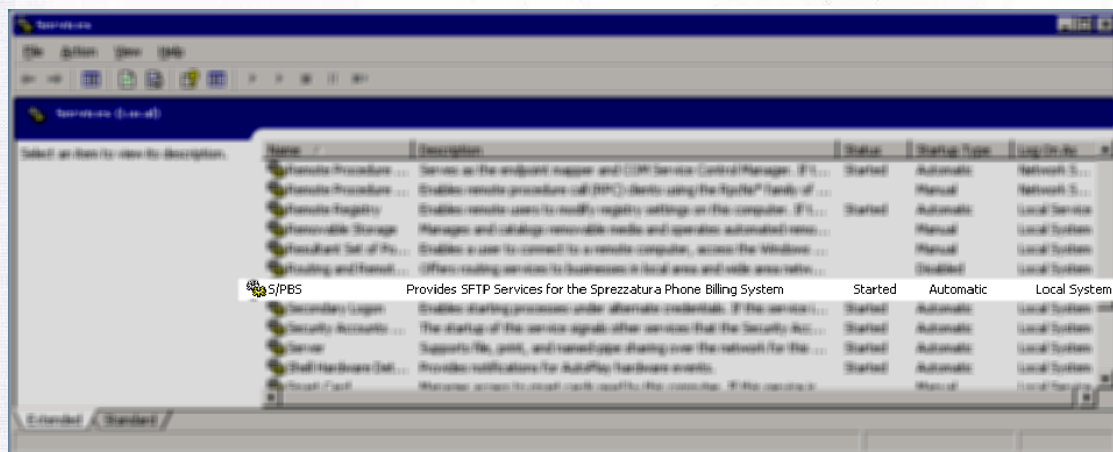
One of our clients does a lot of work for a large Private Equity Investor and one of the projects they were asked to manage was the provision of an integrated IP Phone/Broadband service to an up market student accommodation in Central London. We were invited to create some custom software that would integrate the functions of billing the clients, controlling the phones and providing on line access to call information.

So the modules required would be

- ☑ Secure FTP client to pull down Call Data Records from FTP Site. Technology required – Secure FTP.
- ☑ Pricing module to process Call Data Records and allocate to individuals – Technology required, RTP65.
- ☑ Billing module to take money from the person's credit/debit card or cashless card – Technology required, HTTPS and SOAP/XML.
- ☑ Web interface to permit students to maintain their accounts – Technology required, HTTPS and 256 byte encryption.
- ☑ Desktop software to allow administration of system – Technology required, Web Services and OpenInsight.

## Secure FTP Client

As this had to be a 24/7 operation, the routine that collects the call data records from the FTP site cannot run as a desktop application – it has to be a service. So utilizing Sprezzatura's proprietary Engine Farm technology and some bought in communications libraries, we developed a Secure FTP service that communicates with the FTP site holding the call data records, pulls down the new files and subsequently calls an OpenEngine routine to process the new Call Data Records and put them into tables ready for billing.



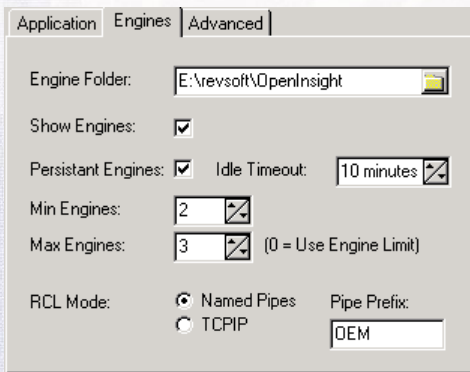
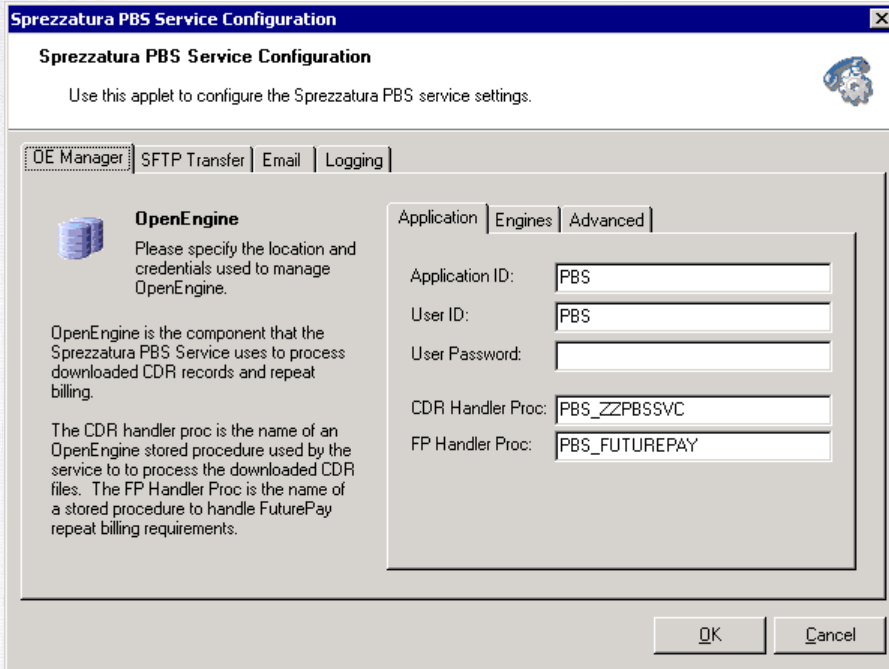
The client is configured using a control panel applet which permits the following functionality :-



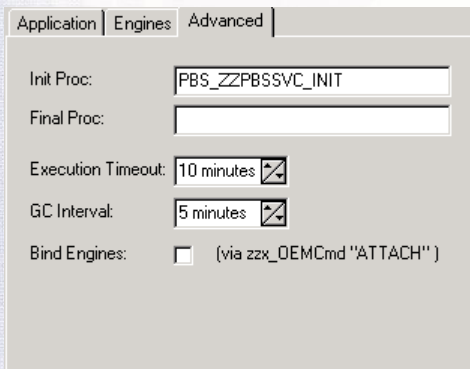
# SPREZZATURA

## OpenEngine Manager Tab

This identifies the application to launch engines in, along with the name of the various handler procedures.



The number of engines to run with and whether or not they ought to be persistent. It also allows additional configuration of how the engines should be communicated with.

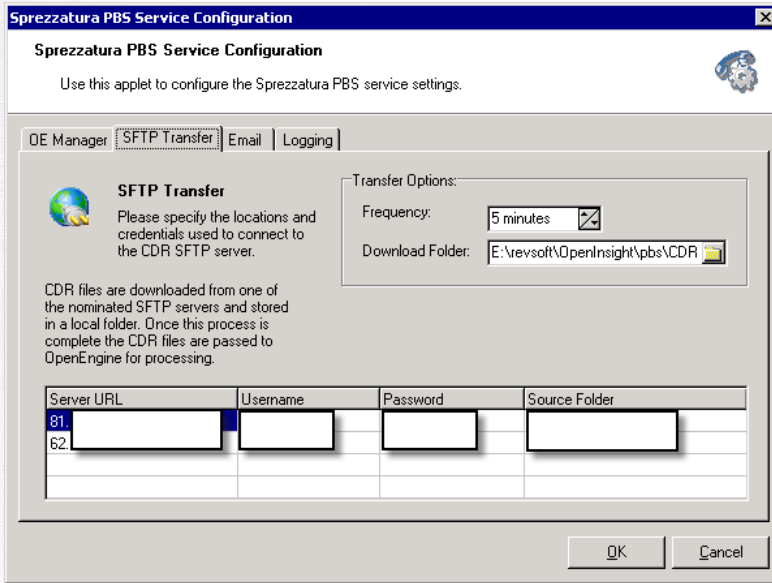


And finally additional procedures to be run at initialisation and termination, when engines should be assumed to have hung and should be killed and how often the system should perform internal garbage collects.

# SPREZZATURA

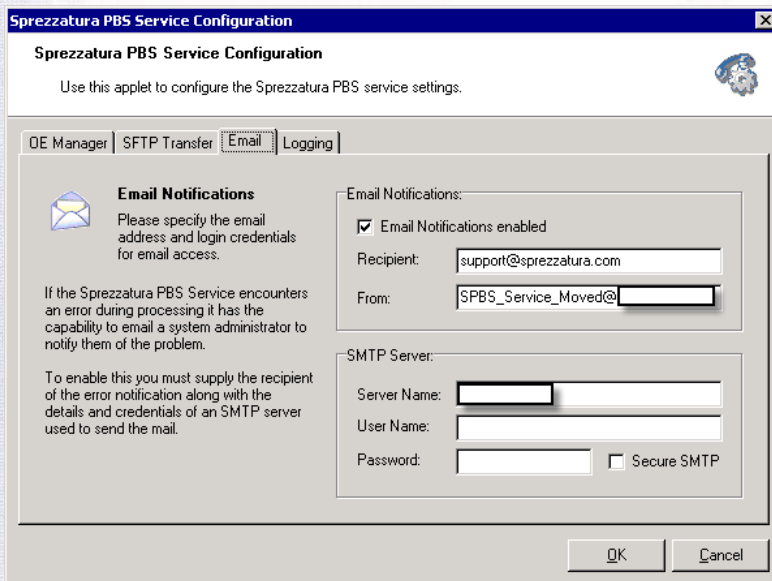
## SFTP Transfer Tab

This tab permits for the specification of how frequently updates should be looked for along with where the resultant files should be stored. Note that as this is a mission critical application we may specify multiple servers to access so that if the comms line to one location goes down for any reason we can roll over to the next server. When this happens, the service sends an email to the person specified in the Email tab to alert them to the fact that there is a problem.



## Email Tab

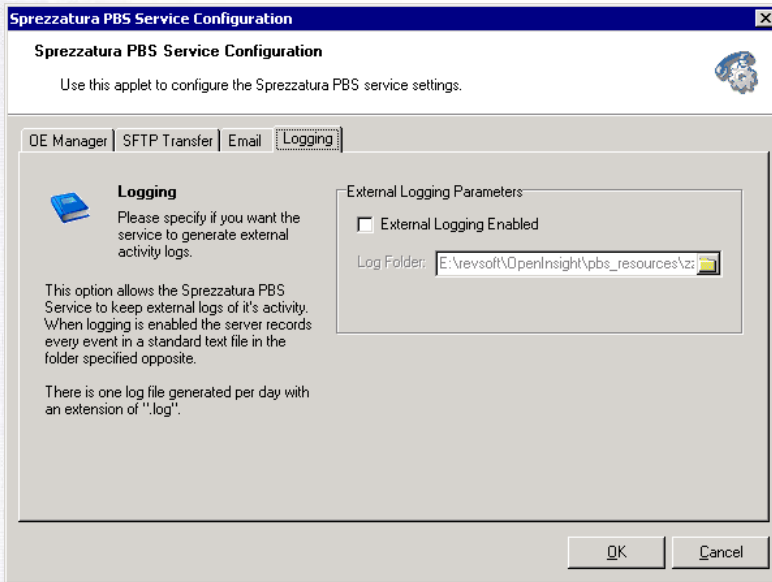
The configuration of the Email is simplicity itself – simply say who to send mail to, who from and provide the details if the SMTP server to use. From hereon in, if there are issues we'll know about it. Using this functionality we were able to point to specific service failings that provided the client with ammunition to ensure that the SLAs being provided to them by their supplier were enforced.



# SPREZZATURA

## Logging

When initially testing system setup, it is useful to see exactly what is happening so there is the provision for every action taken by the service to be logged to an external file. Because of the way this is written to, it can be examined whilst the service is in use permitting easy verification that the service is performing as it is intended to.



## Pricing module to process Call Data Records and allocate to individuals

This is essentially a Basic+ program that looks at the destination called and compares it to a pricing table. The call is then priced and the user's account is debited. If this causes the account to fall below a configurable amount, the user's chosen payment method is debited. If the debit fails, then the telephone is locked for outgoing calls and incoming calls are diverted to a voicemail system. Thus, the OpenInsight program is actually controlling a telephone switchboard. Whilst the mechanism behind the scenes for controlling the switchboard is itself complicated, the interface exposed to OpenInsight is a straightforward object exposing LOCK and UNLOCK methods.

The screenshot shows the 'Destinations' dialog box with a table of pricing rates. The table has columns for Sub code, Description, PPM, Peak, Bill, Off, Bill, W/E, Bill, PPC, Peak, Bill, Off, Bill, W/E, and Bill. The data is as follows:

Sub code	Description	PPM	Peak	Bill	Off	Bill	W/E	Bill	PPC	Peak	Bill	Off	Bill	W/E	Bill
090188	Premium Rate (p6)		30	30	00	00	30	30							
090189	Premium Rate (ff1)		30	30	00	00	30	30		78	36	18	36	18	36
090190	Premium Rate (ff2)		30	30	00	00	30	30		36	12	16	12	16	12
090191	Premium Rate (p9)		30	00	00	00	00	00							
090192	Premium Rate (p5)		30	00	00	00	00	00							
090193	Premium Rate (p5)		30	00	00	00	00	00							
090194	Premium Rate (ff20)		30	00	00	00	00	00		34	28	14	28	14	28
090195	Premium Rate (ff1)		30	00	00	00	00	00		78	36	18	36	18	36
090196	Premium Rate (ff12)		30	00	00	00	00	00							
090197	Premium Rate (ff24)		30	00	00	00	00	00		30	00	00	00	00	00
090199	Premium Rate (p14)		30	00	00	00	00	00							
0902	Premium Rate (p5)		30	00	00	00	00	00							
090298	Premium Rate (p5)		30	00	00	00	00	00							
090400	Premium Rate (p16)		30	00	00	00	00	00							
090401	Premium Rate (p10)		30	00	00	00	00	00							
090402	Premium Rate (p7)		30	00	00	00	00	00							
090403	Premium Rate (p5)		30	00	00	00	00	00							
090404	Premium Rate (ff21)		30	00	00	00	00	00		56	12	56	12	56	12
090405	Premium Rate (p26)		00	00	00	00	00	00							
090406	Premium Rate (p14)		30	00	00	00	00	00							
090407	Premium Rate (p9)		30	00	00	00	00	00							
090408	Premium Rate (p3)		00	00	00	00	00	00							
090409	Premium Rate (p6)		30	00	00	00	00	00							

# SPREZZATURA

## Billing module to take money from the person's credit/debit card or cashless card

The user can choose to pay by credit or debit card OR by using the cashless card that they use in the rest of the building. This requires a mixture of secure HTTP and SOAP messaging. Both methods request a "payment" from the appropriate supplier and credit the user account if successful.

Monthly Phone Charges									
Subscriber Id:		Year month:		Total for month:		Credit Balance:			
[redacted]@NYU.EDU		200808		.2393		15.99			
CDR Key	Date	Time	Type	Destination	Duration	Charge pm	Billable Pence	Real Cost	
1	CR2931	27/08/08	23:08:08	Initial auto topl		0	0	1,000.0000	.0000
2	46E459363D733CD7DE	29/08/08	21:52:37	USA	001908	367			
3	9998A7B7D2781DEBCD	29/08/08	21:59:12	USA	001908	43			
4	897EE32E26F6E1D3DA	29/08/08	22:02:05	USA	001908	63			
5	25688CDA3C93E0229C	29/08/08	22:00:37	USA	001908	15			
6	47B109DB8FB3AD018E	29/08/08	22:01:08	USA	001908	12			
7	CC251072879E573115E	30/08/08	20:33:41	USA	001908	272			
8									

Subscriber Credits			
Trans no:	CR2931	Current balance:	10.000000
Subscriber id:	[redacted]@NYU.EDU		
Amount:	10.000000		
Date:	27/08/2008	Time:	23:08:08
		Type:	CR_IPP_PHONE_TOPU
Description:	Initial auto topup		
Test mode:	Installation:	Country string:	Address:
0	[redacted]	United States of A	[redacted]urt NJ
Auth cost:	Trans id:	Msg type:	
20.00	[redacted]	authResult	
Currency:	Amount string:	Tel:	Postcode:
GBP	£20.00		[redacted]
Country match:	Futurepaid:	Fax:	Name:
Y	[redacted]		[redacted]
Avs:	Auth amt str:	Trans status:	Desc:
[redacted]	£20.00	Y	Phone service and initial topup
Lang:	Auth amount:	Card type:	Comp name:
en	20.00	Visa	[redacted] Limited
Country:	Cost:	Trans time:	Raw auth message:
US	20.00	1219874882853	cardbe.msg.authorised
Auth currency:	Inst id:	Ip address:	Email:
GBP	[redacted]	[redacted].80	[redacted]@nyu.edu
Raw auth code:	Amount:	Cart id:	Auth Mode:
A	20.00	[redacted]56	A
	Mc sessionid:	Futurepaid:	
	[redacted]	[redacted]	

# SPREZZATURA

## Web interface to permit students to maintain their accounts

This was an important aspect of the system as students had to be able to log in at any time to check their account balance and to "top up" their account if needs be. From the interface, they initially register and upon clicking through a registration link they are taken to the main page. Subsequent visits require login.

Naturally, all dealings with the site take place through HTTPS for added security.



# SPREZZATURA

Topups may be made by any means the student wishes to employ:

## Welcome to your intranet

Home | **Nido Phone** | Cashless Vending | Helpdesk | Useful Documents



### Nido Phone

- Phone Menu
- Top-Up Credit
- Statements
- Change Password
- Change Reminder
- Contact
- Logout

### Payment Method - [\(Contact Details/Refund Policy\)](#)

We're only going to ask you the following questions once, next time we'll use the details you provide to top up by the same method.

You can always remove this payment method whenever you wish and then you'll get this screen again.

Please select your payment method

Cashless Card	▼
Cashless Card	
Debit/Credit Card	

Submit

And naturally statements are available at any time:

## Welcome to your intranet

Home | **Nido Phone** | Cashless Vending | Helpdesk | Useful Documents



### Nido Phone

- Phone Menu
- Top-Up Credit
- Statements
- Change Password
- Change Reminder
- Contact
- Logout

### Statements

Choose a month to view

No calls have been made in October 2008

### Payments Made

Date	Time	Ref No.	Description	Amt (£)
10/10/2008	10:38	CR3139	Phone Credit Adjustment	1.00
11/10/2008	10:44	CR3144	Automatic Phone Topup (WorldPay)	5.00
13/10/2008	11:57	CR3152	Automatic Phone Topup	5.00
				<b>Total £21.00</b>

# SPREZZATURA

## Desktop software to allow administration of system

This is a normal OpenInsight application and permits the day to day administration of the system.

**Subscriber Details**

Email address:  Current phone:

Personal Details | Credit Card Details | Billing Address Details

First name:

Surname:

Salutation:

Password:

Security question:

Security answer:

Credit balance:

Pay as you go:

**Configuration**

Configure basic system information

Company Details | System Details | FTP Details

Name:

Address:

Town/City:

Postal/Zip:

Country:

Phone:

Email:

Ok Cancel

# SPREZZATURA

Of course, in the world of mobile telecoms, things are constantly changing and new number ranges are added without supplier notification. When this happens there are tools provided to permit the operator to bill an unbillable call and add the new number range into the system automatically.

**Exceptions - <QBF Browse: 1 of 5>**

**CDR Pricing Exceptions**  
This window displays CDRs that could not be priced because the phone subcode could not be found in the available price list. This window allows you to view the invalid CDR and also allows you to create the missing price code.

CDR Number:

Date:  Time:  Originating cli:  Destination cli:  Duration:  Calltype:  Callclass:

Charged:  Unknown:  Sitename:  Error:  Client:

Sub code	Description	PPM	Peak	Bill	Off	Bill	W/E	Bill	PPC	Peak	Bill	Off	Bill	W/E	Bill
07535	T-Mobile		10.95	20.00	5.04	20.00	5.02	20.00		0.00	0.00	0.00	0.00	0.00	0.00
07541	O2		7.92	20.00	7.86	20.00	3.95	20.00		0.00	0.00	0.00	0.00	0.00	0.00

**The system suggests closest match**

## In Conclusion

We're pleased with the ease with which we were able to deliver this all singing all dancing software to our client. Our client was delighted with the value for money received. So much so, that they have now gone ahead and purchased a new Switchboard – so the cycle starts again as now we need to add a module to actually CREATE the Call Data Records from a raw feed instead of FTPing the information down. Whilst it is true that for the communications we relied upon our own internal routines, the flexibility of OpenInsight was a significant contributor to the success of this application.

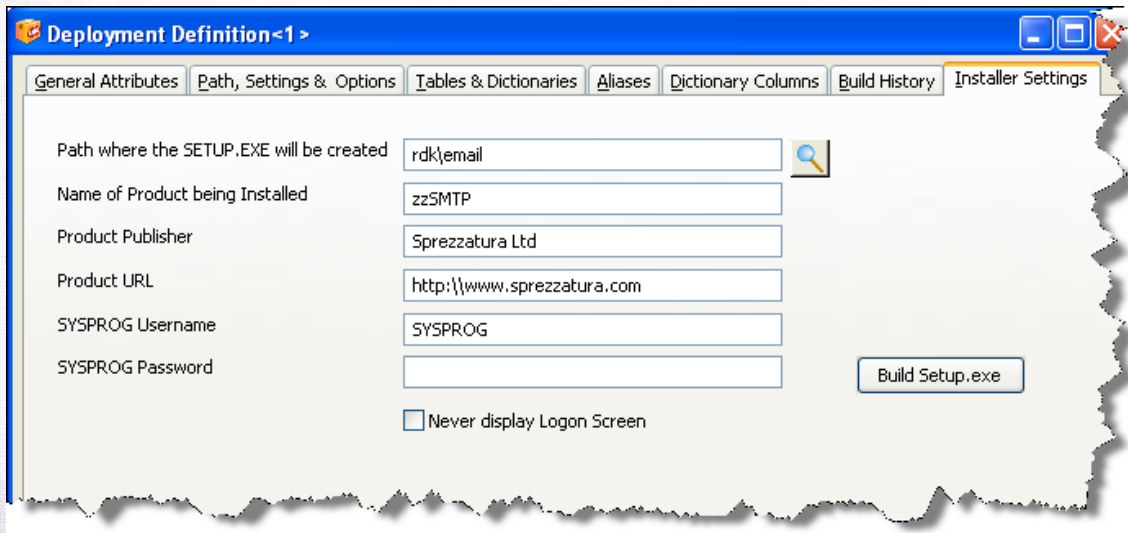


# SPREZZATURA

## ZZ SMTP – a free Email client and a sneak peek at a 9.0 feature

For quite some time now we've been doing our own thing when it comes to SMTP Email and we've given our utility away to several of our clients when requested. Recent threads on the Revelation forum have suggested that there might be a wider appeal for this so we're pleased to make our routines available to the community. See the instructions in the Welcome section to get your free copy.

With Revelation's permission we are pleased to be able to showcase one of our favourite features in the beta of version 9.0 of OpenInsight. The RDK now allows you to create setup.exes to distribute upgrades and module! So the deployment we'll be sending you was created using this.

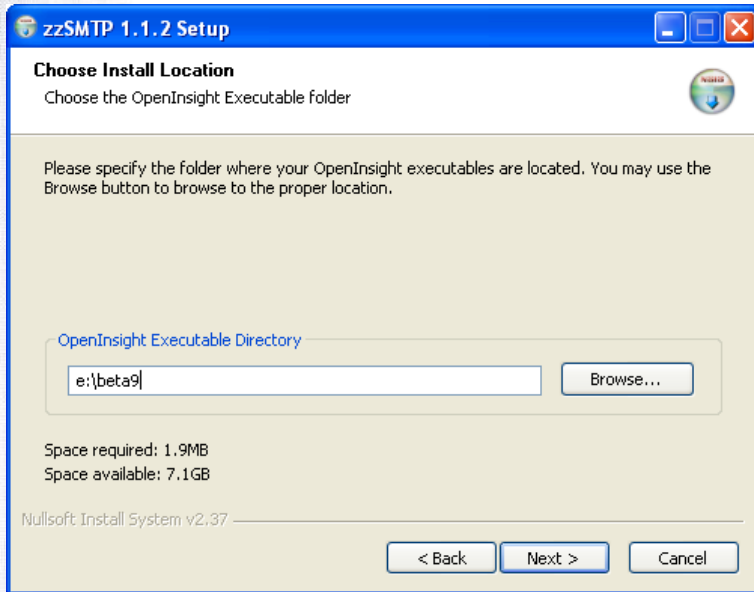


This creates a SETUP.EXE file which you run to install the product

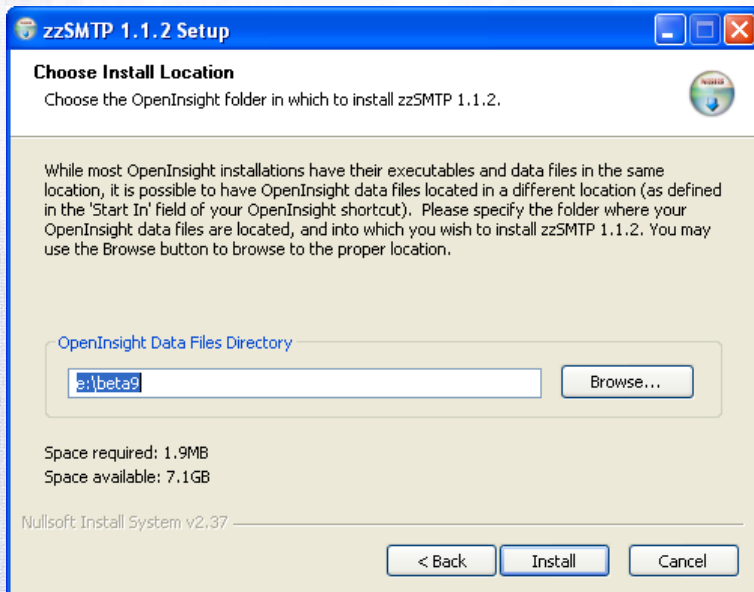


# SPREZZATURA

Firstly we select the location of our Oinsight.exe file:

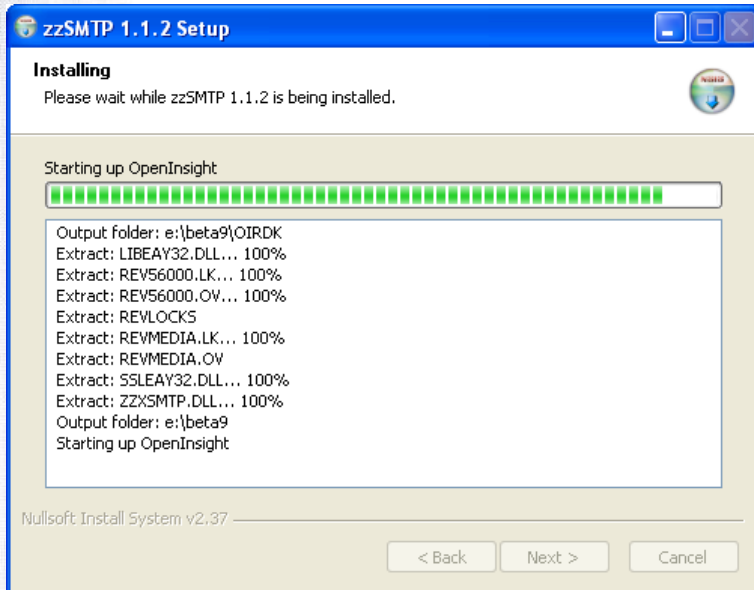


And then in a nice touch we get to say whether this is a "split" installation where the executables are in one directory and the REV files are in another:

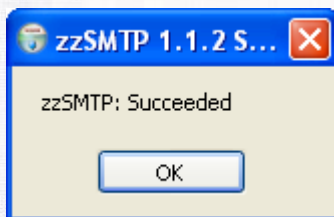


# SPREZZATURA

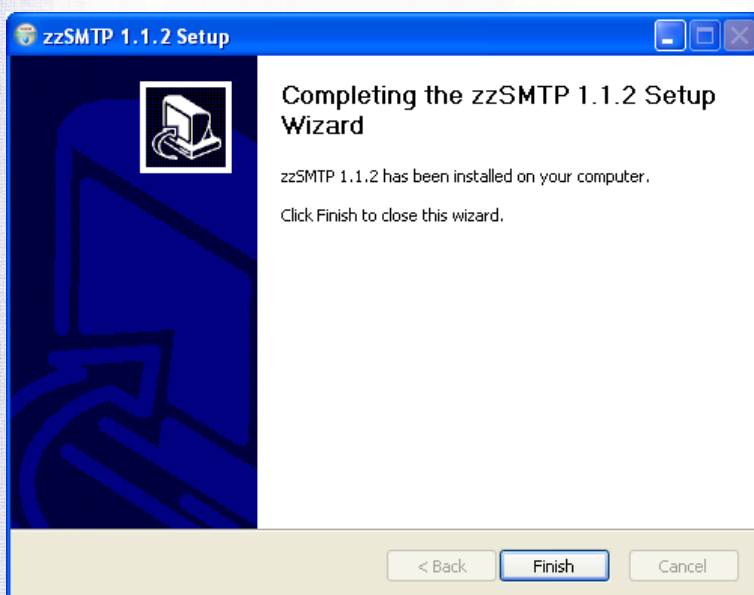
Then the install starts and the user is kept nicely informed of the progress:



Until successful completion of the installation



And a final completion page appears:



# SPREZZATURA

This makes providing clients with upgrades so much easier and is indicative of the new developer focus coming out of the Revelation stables currently.

Before we begin, please note that this is not a primer to the use of SMTP. For example, if you use an Exchange Server it is strongly likely that if it is configured correctly the system will refuse attempts from your workstation to send mails - as it will consider them to be attempts to relay for a spammer. Rather, Exchange relies upon authentication. Thus to make this work you may need to adjust the configuration of your mail server. So, if any of these routines do not work when used as documented rest assured that they have all been tested but with a correctly configured SMTP server.

When installed you will have on your system four pieces of source code illustrating how to send a text message, how to send an HTML message and how to send an HTML file. Each of these routines is obviously named and we will discuss them each in turn. We deliberately designed these routines to mimic the calling structure of Rev's SMTP routines to make them easier to move to.

Firstly though we need to consider the parameters that can be passed to these routines as frequently there is a commonality, so to avoid documenting the same thing repeatedly we will document the common values in the following section.

## SMTP Variables

### mailServer

This is a dynamic array consisting of two fields

<1>	The name or IP address of the SMTP mail server  Optionally followed by <i>:PortNumber</i> EG HOST:222	Required
<2>	SSL Method :-  SSLv2  SSLv23  SSLv3  TLSv1	Optional

### userName

	The username to log onto the mailserver – not normally required if not logging on from outside the host network	Optional
--	-----------------------------------------------------------------------------------------------------------------	----------

# SPREZZATURA

## passWord

	The password to log onto the mailserver – not normally required if not logging on from outside the host network	Optional
--	-----------------------------------------------------------------------------------------------------------------	----------

## sender

<1>	The email address of the sender	Required
<2>	The reply to address	Optional

## toList/ccList/bccList

	Field mark delimited list of recipients	Required/Optional/Optional
--	-----------------------------------------	----------------------------

## priority

	<p>A literal or integer denoting priority – whilst five states exist most mail systems only recognize three and treat the two lowest and the two highest as the same</p> <p><i>Integer Literal</i></p> <table> <tr> <td>0</td> <td>Lowest</td> </tr> <tr> <td>1</td> <td>Low</td> </tr> <tr> <td>2</td> <td>Normal</td> </tr> <tr> <td>3</td> <td>High</td> </tr> <tr> <td>4</td> <td>Highest</td> </tr> </table>	0	Lowest	1	Low	2	Normal	3	High	4	Highest	Optional
0	Lowest											
1	Low											
2	Normal											
3	High											
4	Highest											

## subject

	Subject of message	Optional but recommended as antispaam measures frequently consider blank subject to be spam
--	--------------------	---------------------------------------------------------------------------------------------

# SPREZZATURA

## msgText

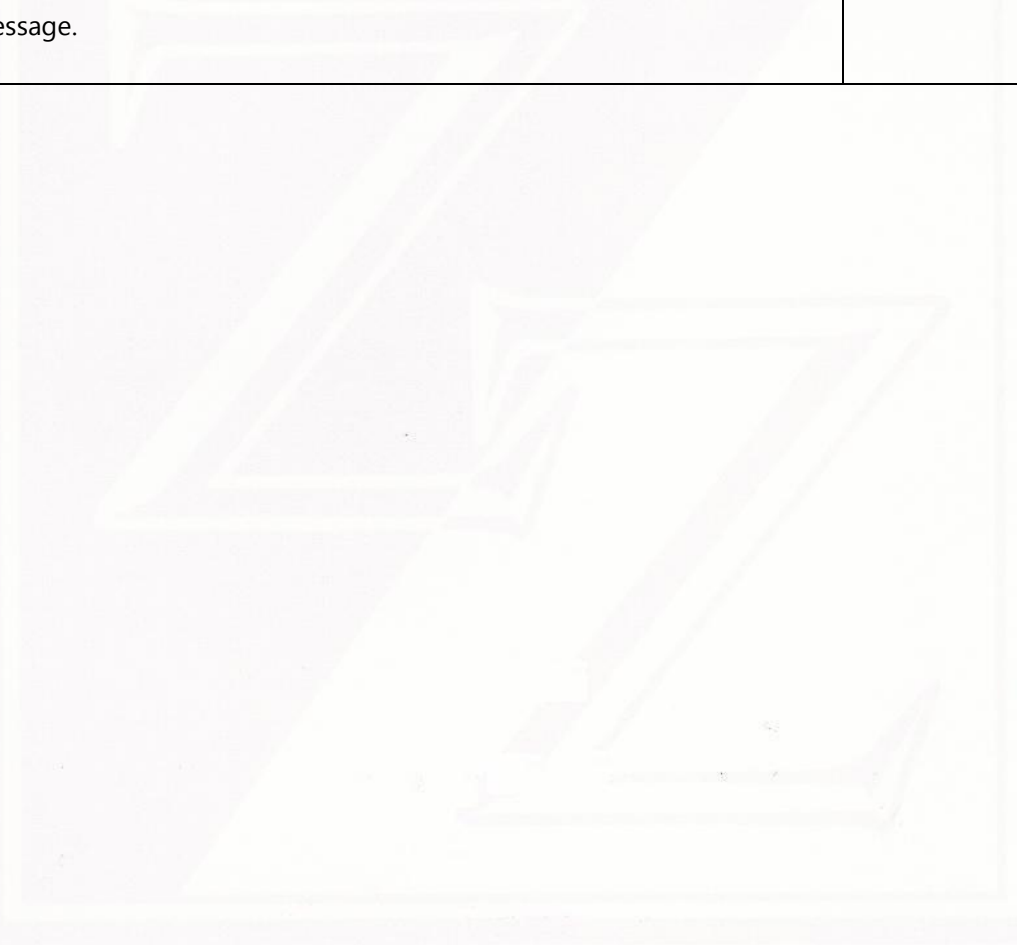
	The body of the mail. Carriage Return/Line Feeds delineate end of paragraph,	Optional
--	------------------------------------------------------------------------------	----------

## attachNames

	Field mark delimited list of the names to display in the message for the correspondingly attached files	Optional
--	---------------------------------------------------------------------------------------------------------	----------

## attachList

	Field mark delimited list of the fully qualified file names to attach to the message.	Optional
--	---------------------------------------------------------------------------------------	----------



# SPREZZATURA

## SMTP\_SENDTEXT

This is a function called as follows :-

```
Result = smtp_SendText( mailServer, userName, password, sender, toList, ccList, bcclist, priority,
subject, msgText, attachNames, attachList )
```

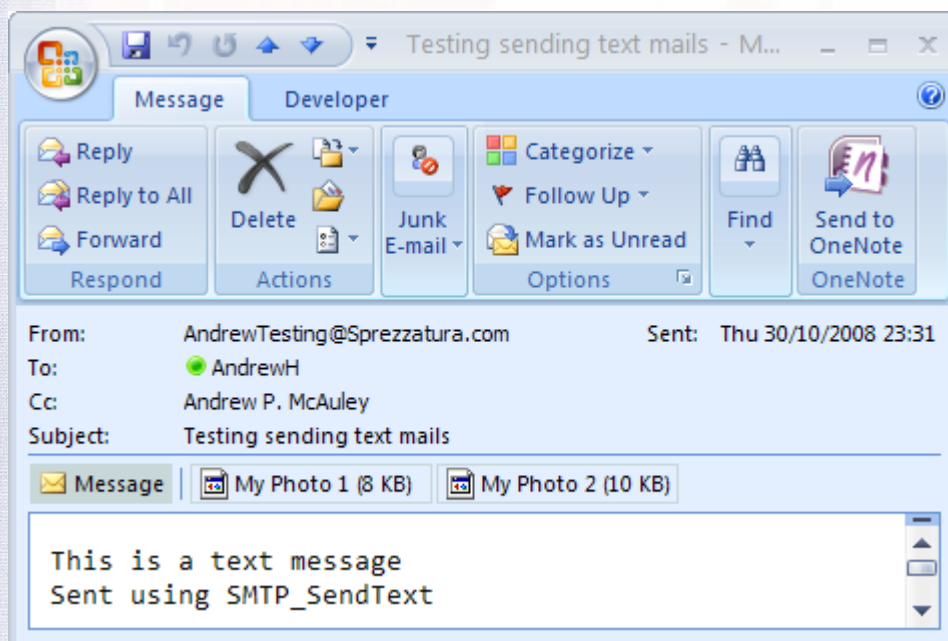
Testing with the following code

```
Subroutine Test_SmTP_SendText( Void )

  Declare Function smtp_SendText
  mailServer   = "SPREZZ*****"
  userName     = ""
  password     = ""
  sender       = "AndrewTesting@Sprezzatura.com"
  toList       = "*****@hotmail.com"
  ccList       = "*****@Sprezzatura.com"
  bcclist      = ""
  priority     = ""
  subject      = "Testing sending text mails"
  msgText      = "This is a text message" : \0D0A\ : "Sent using SMTP_SendText"
  attachNames  = "My Photo 1" : @Fm : "My Photo 2"
  attachList   = "C:\delete 001.jpg" : @Fm : "c:\delete 002.jpg"
  RetVal       = smtp_SendText( mailServer, userName, password, sender, toList, |
    ccList, bcclist,priority, subject, msgText, attachNames, attachList )
  ErrCode      = Get_Status(ErrorCodes)
```

Return

Produced this in my inbox.



# SPREZZATURA

## SMTP\_SENDHTMLFILE

This is a function called as follows:-

```
Result = smtp_SendHTMLFile( mailServer, userName, password, sender, toList, ccList, bccList, priority,
subject, msgText, htmlFile, attachNames, attachList )
```

### htmlFile

	The fully qualified file name of the HTML file to send as the email	Optional
--	---------------------------------------------------------------------	----------

Tested with the following code

```
Subroutine Test_SmTP_SendHTMLFile( Void )

  Declare Function smtp_SendHTMLFile

  mailServer = "SPREZZ*****"
  userName   = ""
  password   = ""
  sender     = "AndrewTesting@Sprezzatura.com"
  toList     = "*****@hotmail.com"
  ccList     = "*****Sprezzatura.com"
  bccList    = ""
  priority   = "Lowest"
  subject    = "Testing sending HTML files"
  msgText    = "This is a text message" : \0D0A\ : "Sent using SMTP_SendHTMLFile"
  htmlFile   = "c:\idt.htm"
  attachNames = "My Photo 1" : @Fm : "My Photo 2"
  attachList  = "C:\delete 001.jpg" : @Fm : "c:\delete 002.jpg"

 RetVal = smtp_SendHTMLFile( mailServer, userName, password, sender, toList, |
    ccList, bccList, priority, subject, msgText, htmlFile, |
    attachNames, attachList )

  ErrCode = Get_Status(ErrorCodes)

Return
```

Produced the results as shown over...



# SPREZZATURA

Testing sending HTML files - Message (HTML)

Message Developer Add-Ins

Reply Reply to All Forward Respond Delete Actions Move to Folder Create Rule Other Actions Block Sender Not Junk Junk E-mail Categorize Follow Up Mark as Unread Options Find Send to OneNote OneNote

This message was sent with Low importance. Outlook blocked access to the following potentially unsafe attachments: idt\_files\_bsniiff.js, idt\_files\_ddmenu.js, idt\_files\_injection\_graph\_func.js, idt\_files\_Menuitems.js.

From: AndrewTesting@Sprezzatura.com Sent: Fri 31/10/2008 02:28  
 To: AndrewH  
 Cc: Andrew P. McAuley  
 Subject: Testing sending HTML files

Attachments: idt\_files\_CAO5OH0V.txt (2 KB), idt\_files\_spacer.gif (432 B), idt\_files\_spacer.gif (432 B), idt\_files\_spacer.gif (432 B), idt\_files\_icon01.gif (481 B), idt\_files\_dotline.gif (448 B), idt\_files\_icon01.gif (481 B), idt\_files\_dotline.gif (448 B), idt\_files\_icon01.gif (481 B)

**IDT Corporation**

Products About IDT Investor Relations IDT Businesses Account Center SITE HELP CONTACT US

The most popular rechargeable calling card.

Home >> Products >> Calling Cards >> GlobalCall >> Access Numbers

**Access Numbers**

Country	Access Number	Customer Service Number	Rates from this Location
Argentina	0800-266-4777	0800-266-4774	
Austria	800-677-470	800-677-471	
Australia	1-800-14-7550 1-800-14-7549 1-800-14-7548	1-800-14-7551	

# SPREZZATURA

## SMTP\_SENDHTML

This is a function called as follows:-

```
Result = smtp_SendHTML( mailServer, userName, password, sender, toList, ccList, bccList, priority,
subject, msgText, msgHTML, attachNames, attachList, baseDir )
```

Where

### msgHTML

	HTML code to send as the body of the mail	Optional
--	-------------------------------------------	----------

### baseDir

	Location on the computer that represents the base website subdirectory any images etc referenced are to be pulled from.	Optional
--	-------------------------------------------------------------------------------------------------------------------------	----------

Testing with the following code

```
Subroutine Test_SmTP_SendHTML( Void )
```

```
    Declare Function smtp_SendHTML
```

```
        mailServer    = "SPREZZWIN2K301"
```

```
        userName      = ""
```

```
        password      = ""
```

```
        sender        = "AndrewTesting@Sprezzatura.com"
```

```
        toList        = "*****@hotmail.com"
```

```
        ccList        = "*****@Sprezzatura.com"
```

```
        bccList       = ""
```

```
        priority      = "Highest"
```

```
        subject       = "Testing sending HTML mails"
```

```
        msgText       = "This is a text message" : \0D0A\ : "Sent using
```

```
SMTP_SendText"
```

```
        msgHTML       = "<b>This is an <i>HTML</i> message</b><BR>Sent using |
```

```
SMTP_SendHTML"
```

```
        attachNames   = "My Photo 1" : @Fm : "My Photo 2"
```

```
        attachList    = "C:\delete 001.jpg" : @Fm : "c:\delete 002.jpg"
```

```
        baseDir       = ""
```

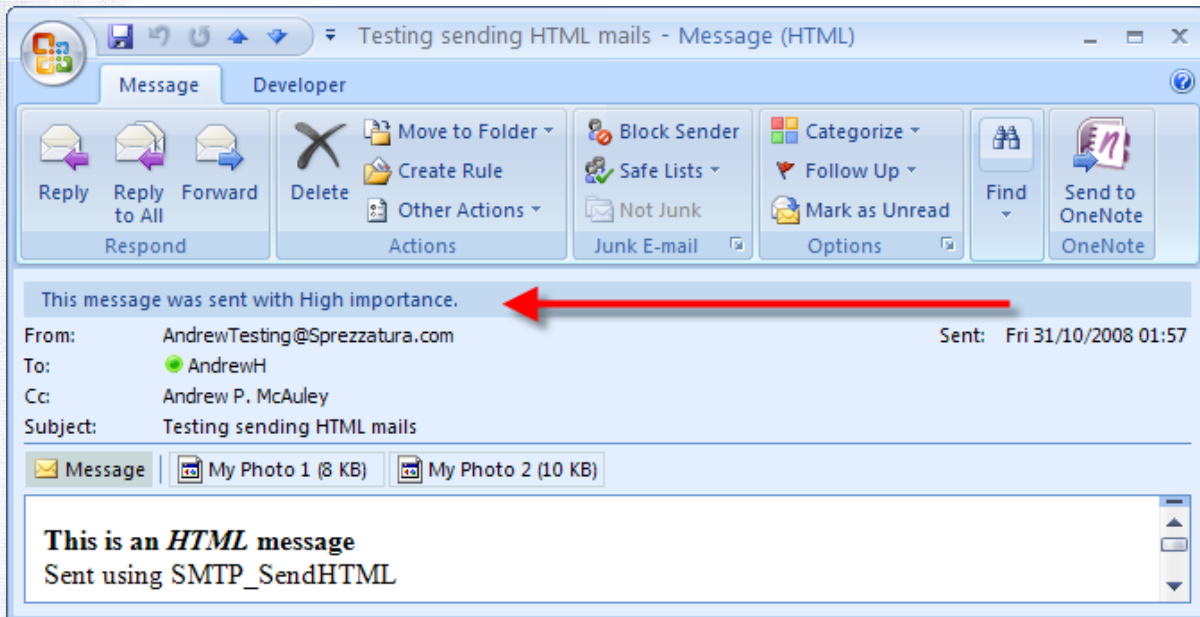
```
        RetVal        = smtp_SendHTML( mailServer, userName, password, sender, |
toList, ccList, bccList, priority, subject, msgText, msgHTML, |
attachNames, attachList, baseDir )
```

```
        ErrCode       = Get_Status( ErrorCodes )
```

```
Return
```

Produced the following...

# SPREZZATURA



We trust that you'll have no problems using the software but if you do feel free to contact [cases@sprezzatura.fogbugz.com](mailto:cases@sprezzatura.fogbugz.com).

# SPREZZATURA

## Peripheral Trivia

As this issue of S/ENL was put to bed we fed the inner man with:

TV:	Heroes – Welcome back!
Book:	The collected essays of Michel de Montaigne
CD:	Graduation – Kanye West
WEB:	<a href="http://icanhascheezburger.com/">http://icanhascheezburger.com/</a> (sorry)

Join us :	Send Mail to <a href="mailto:Admin@Sprezzatura.com">Admin@Sprezzatura.com</a> with subject SUBSCRIBE SENL or complete our <a href="#">online registration form</a> .
Leave Us:	Send Mail to <a href="mailto:Admin@Sprezzatura.com">Admin@Sprezzatura.com</a> with subject UNSUBSCRIBE SENL
Change of Address:	Leave at the old address & join at the new one
Web Info:	<a href="http://www.sprezzatura.com/">http://www.sprezzatura.com/</a>
Tell us what you'd like to see in S/ENL:	<a href="mailto:info@sprezzatura.com">info@sprezzatura.com</a>

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