IDATA DEVELOPMENT LTD

iEXL

Excel spreadsheets for programmers

IBM i on Power (Iseries/AS400)

Work Manual

IBM Business Partner

iEXLSOFTWARE.COM
iEXLSUPPORT.COM
iEXLBLOG.COM

SYSTEM PREREQUISITES

Operating System level V5R4M0 onwards
IBM I Java Virtual Machine 1.4 onwards
IBM Licensed program 5722SS1 Option 13

LIMITATIONS

All Excel limits apply, i.e., # of fonts;
# of sheets; column widths.
iEXL: Numeric field size maximum is 29 with 9DP's
iEXL: Total file width 10,000 characters

Revised 2012
IDATA Development Ltd.

Document produced by Echelon Typesetting, U.K.

C Contents

1 Introduction

Command iEXL Overview

The iEXL product has been designed to simplify the creation of Excel spreadsheets directly on IBM i on Power, AS/400, ISERIES, I5 or IBM I (referred to as IBM I after). There is no need for further PC packages or Database communications setup to use the iEXL product. The system uses Apache POI software to generate the spreadsheets which is supplied as part of this product.

At its most basic the product can be used to simply transfer a data file into a spreadsheet. If required, using its inbuilt functionality it can be used to set fonts, styles, headings, colours, images, page breaks, freeze panes, passwords protection, etc to generate more professional looking spreadsheets. The software can be used by any person that can access data files.

Many of the formatting options can be achieved without any programming. Using the menu system and inbuilt screen options such as fonts, heading, formula can be added to create a spreadsheet. If for example a user runs a Query on a weekly basis that generates an output file it may be of use to have this data transferred to Excel. This can be achieved by creating a schedule job that would read the Query file using the iEXL product.

On the more complex side a user may receive an existing IBM I report that may be of use as a spreadsheet but retaining the IBM I report format. This could be achieved by the IS department modifying the existing program that generates the report. As the report is generated, a work file is created with the same data as the report, placed in the associated spreadsheet column. Taking this approach means you do not have to create new programs but make a simple modification to an existing program.

The iEXL product can also be used to display the generated spreadsheet directly on your screen. You may want to modify a subfile program so the user can have the ability to load the data into Excel and have that displayed immediately.

iEXL also has the functionality of server jobs or iEXL instances. Individual or groups of spreadsheet can be directed to an active job which reduces processing time. This would allow named departments to have their own jobs allocated to them or high usage jobs to active jobs waiting for the next spreadsheet. However the option exists to simply transfer the data file to Excel and use its functionality to process the data.

As long as the file exists on the IBM I it could have been created by RPG, COBOL, JAVA, SQL, Query, etc. it can be uploaded to Excel with the iEXL product.

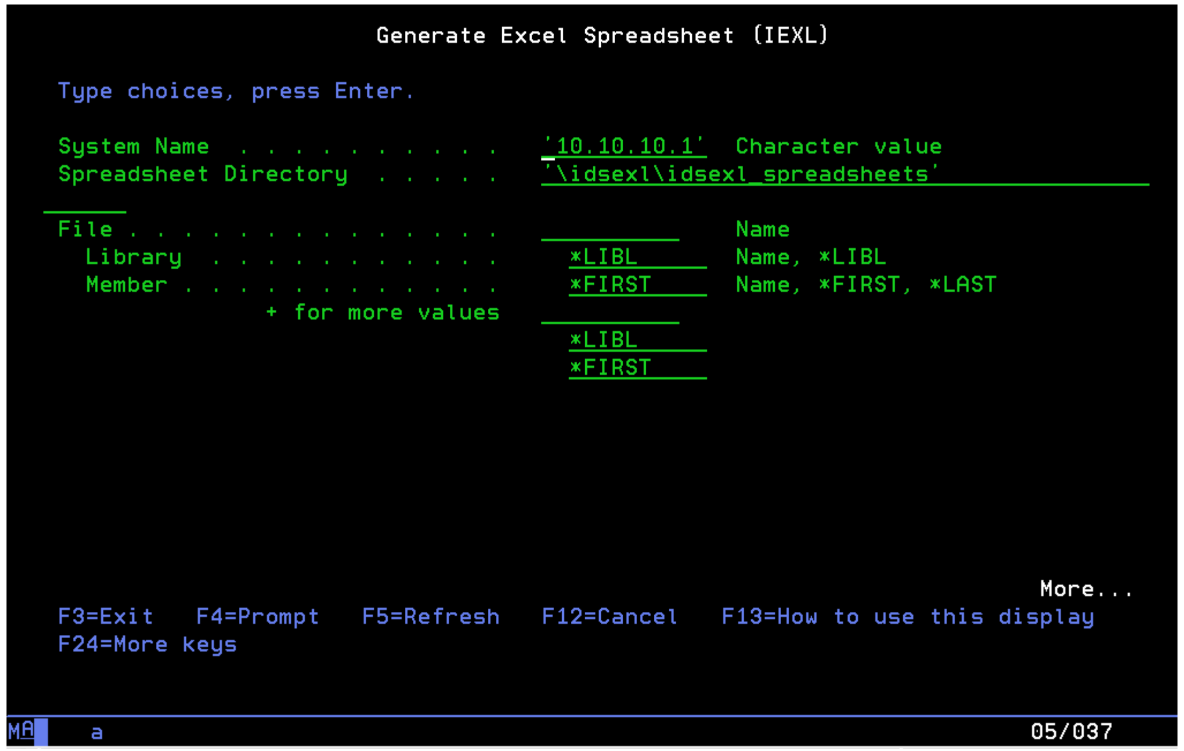
Whichever of the above suits your needs you can then e-mail the generated spreadsheet to both internal and external people. Using the inbuilt e-mail capabilities of IBM I (SMTP) and RPG mail supplied as part of this product you specify which spreadsheet is sent out and who it is sent to.

iEXL Set-up

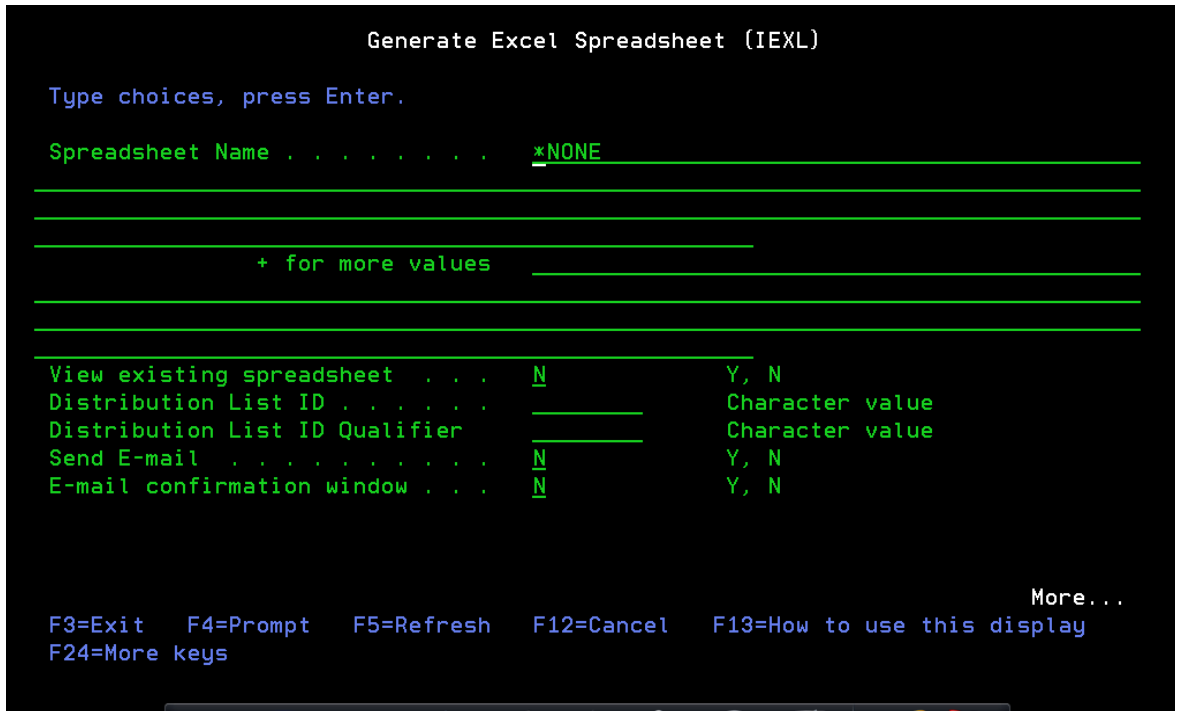
To use the iEXL software add Library IDDEXL to your Library List after QTEMP. Enter iEXL on a command line as press F4. To use the menu system enter Go Idsmain.

2 Command IEXL

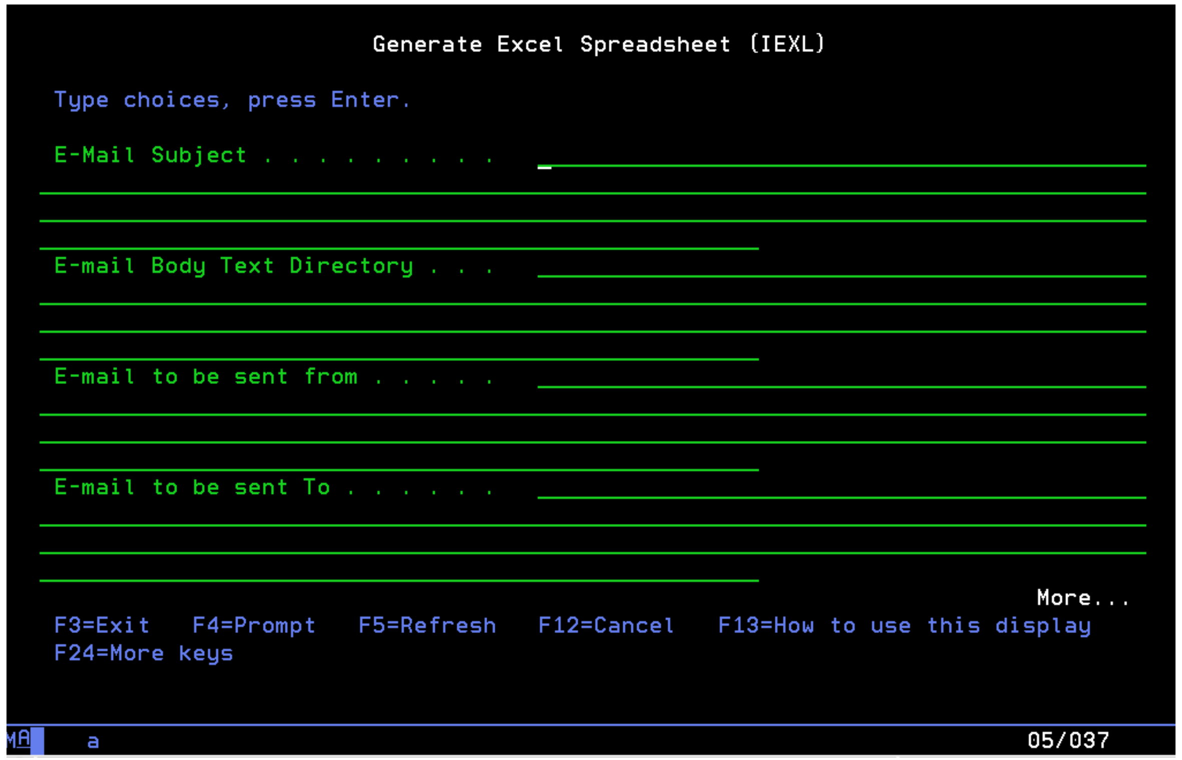
IEXL Parameters



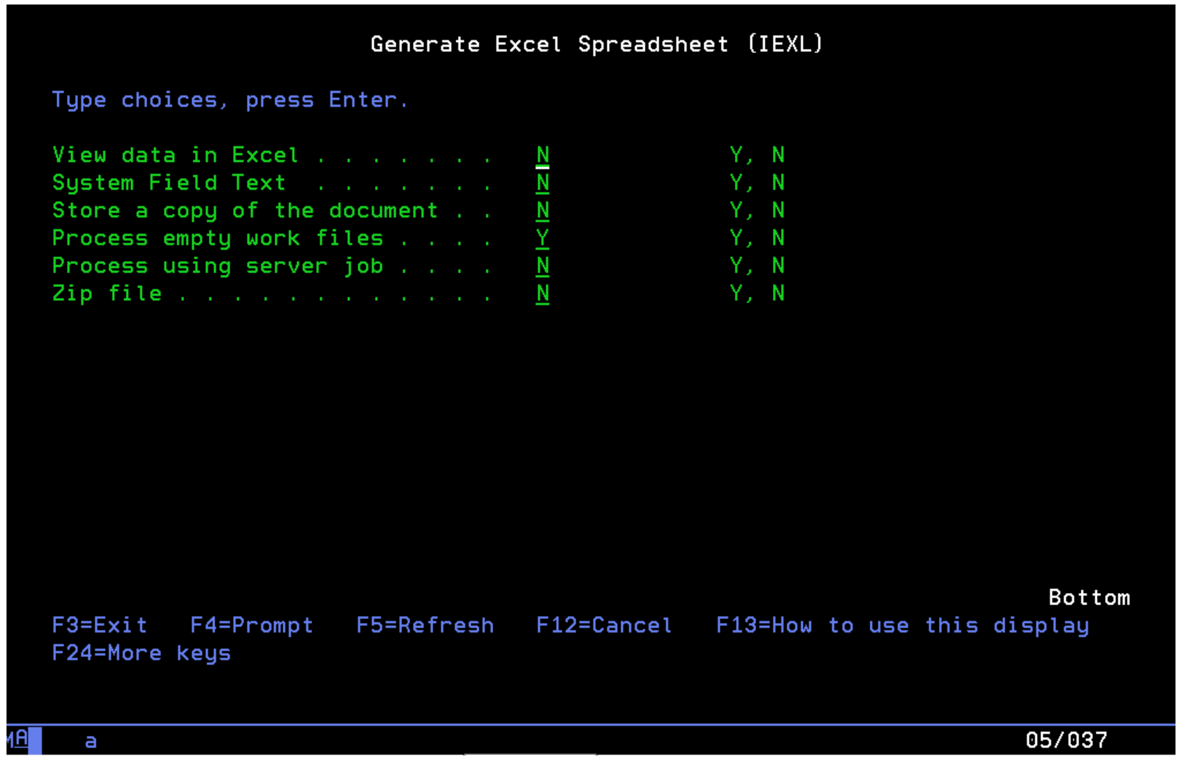
```
                    Generate Excel Spreadsheet (IEXL)

 Type choices, press Enter.

 System Name . . . . . . . . . .   '10.10.10.1'  Character value
 Spreadsheet Directory . . . . .   '\idsexl\idsexl_spreadsheets'

 File . . . . . . . . . . . . . .              Name
   Library . . . . . . . . . . .     *LIBL     Name, *LIBL
   Member . . . . . . . . . . . .    *FIRST    Name, *FIRST, *LAST
                + for more values
                                     *LIBL
                                     *FIRST

                                                                 More...
 F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
 F24=More keys
MA    a                                                           05/037
```



```
                    Generate Excel Spreadsheet (IEXL)

 Type choices, press Enter.

 Spreadsheet Name . . . . . . . .  *NONE

                + for more values

 View existing spreadsheet . . .   N             Y, N
 Distribution List ID . . . . . .                Character value
 Distribution List ID Qualifier                  Character value
 Send E-mail . . . . . . . . . .   N             Y, N
 E-mail confirmation window . . .  N             Y, N

                                                                 More...
 F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
 F24=More keys
```

```
                    Generate Excel Spreadsheet (IEXL)

 Type choices, press Enter.

 E-Mail Subject . . . . . . . . .

 E-mail Body Text Directory . . .

 E-mail to be sent from . . . . .

 E-mail to be sent To . . . . . .

                                                                 More...
 F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
 F24=More keys
MA    a                                                           05/037
```



```
                    Generate Excel Spreadsheet (IEXL)

 Type choices, press Enter.

 View data in Excel . . . . . . .  N              Y, N
 System Field Text  . . . . . . .  N              Y, N
 Store a copy of the document . .  N              Y, N
 Process empty work files . . . .  Y              Y, N
 Process using server job . . . .  N              Y, N
 Zip file . . . . . . . . . . . .  N              Y, N

                                                                  Bottom
 F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
 F24=More keys
MA    a                                                           05/037
```

System Name
System Name should be set to either the host name or the IP address of your system.
You can enter this each time you run the command or use the following command CHGCMDDFT CMD(IDDEXL/IEXL) NEWDFT('sysn(''10.10.10.1'')') Where '10.10.10.1' should be replaced with either your machine name or IP address.

Directory Name for Spreadsheet
The directory name is where the file will be generated, processed and stored.
This parameter can be changed to any existing directory so that spreadsheets may be stored in different areas of the IFS. For example this may be useful to separate spreadsheets for different departments or companies.

File/Member and Library Name
This identifies the file that will be used to generate the spreadsheet.
*LIBL can be used for the library name.
Up to 50 file names can be entered. Each file will be loaded into a separate sheet within the workbook

Spreadsheet Name
This will be the name of the spreadsheet generated.
Spreadsheet names cannot contain embedded blanks or '/'. The suffix '.XLS' will be automatically added to the name. This is the name that will be used to find attributes and other formatting controls that have been set using iEXL's formatting options.
Up to 50 spreadsheet names can be entered. Each spreadsheet name entered must be associated with a file name entered in the previous parameter. If a file name entered is not associated with a spreadsheet this parameter must be set to *NONE.

View Existing Spreadsheet
If this parameter is set to 'Y' the system will search for the spreadsheet name entered in the previous parameter.

Distribution List ID and Qualifier
Distribution List/Qualifier is used to identify a pre-defined entry that contains a list of people that require the spreadsheet being e-mailed to them. Also an e-mail address of the sender. See 'e-mail control files' later.

Send E-Mail
Setting this to 'Y' will initiate the sending of the e-mail/s. The e-mails will be issued dependant on the distribution list or From and To parameters later in this command.

E-mail Confirmation Window
A window asking a user to confirm sending of an email can be requested. This is only relevant to interactive jobs. This is also a parameter within the iEXL command that can be set to a default of Y or N.

E-Mail Subject
E-mail subject is the text that will be placed in the e-mail subject.

E-Mail Body Text File
E-mail body text is used to locate a file stored in the IFS that contains the text for the e-mail body.

E-Mail To Be Sent From
E-mail address of sender. Enter the e-mail address of the person who is sending the e-mail. This is the person who should appear to have sent the e-mail. This information is stored in a log file that shows who actually sent the e-mail. (Alternative to Distribution List)

E-Mail To Be Sent To
E-mail address of recipient. Enter the e-mail address of the person who will receive a copy of the e-mail. This is an extra person that will receive the e-mail in addition to the distribution list. If no distribution list is entered then this will be the only recipient of the e-mail. (Alternative to Distribution List)

View Data in Excel
If this is set to 'Y' the spreadsheet will be displayed on your screen.
Note, a shared network drive must exist that is mapped to the entry in the 'Directory Name for Spreadsheet'. See prerequisites later in the spreadsheet generation section.

System Field Text
If this is set to 'Y' the field descriptions held within the file/field description will be used as column headings within the spreadsheet. The text used is extracted from the TEXT DDS keyword.

Store a Copy of the Document
If this is set to 'Y', a copy of the document will be stored within the folder named on the 'Directory Name for Spreadsheet' parameter in the following format.
Spreadsheet name_ Job Name_Date_Time.Xls

Process Using Server job
Use this option to request the job be run within an active iEXL job or instance. This can save considerable processing time as it will use an already active server job. It can also be used to group specified spreadsheets to use a particular job.
When a server job is activated the system will start subsystem IEXL on your machine. All server jobs will then be run through this subsystem.
See section 5 of this manual for a complete description.

'Zip File'
Set to 'Y' if you wish to have the generated file zipped. This will be the file e-mailed if that option has been selected.

3 Spreadsheet Control Files

The control files are maintained via a set of screens which will allow you to enter the required functions. These screens can be accessed from the IDSMAIN menu.

The library IDDEXL must be added directly after QTEMP to use the iEXL software'. From a command line enter GO IDSMAIN

```
IDSMAIN                          IDSMAIN Menu

Select one of the following:

     1. Spreadsheet Controls                 15.Image Catalogue
     2. E-Mail controls
     3. On Line Documentation

     5. Search E-mail Log


                                             22.Server Jobs




                                             90.Signoff
Selection or command
===> _____________________________________________________________________

F3=Exit    F4=Prompt    F9=Retrieve    F12=Cancel
F13=Information Assistant  F16=System main menu

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```

Select option 1 spreadsheet controls.


```
 IDSWKM              IDD Excel Spreadsheet Maintenance       9/28/11  19:17:21

Spreadsheet: IDSTEST

Type choices, press Enter
 1=Update Record  3=Copy/Add  4=Delete  5=Setup  6=Duplicate

Sel  Spreadsheet
 _   IDSTEST



     Spreadsheet Description
     Test Spreadsheet



     Spreadsheet server Job Name
     IEXLSRV2
                                                                      More...
F3=Exit  F12=Cancel  F6=Add


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```

The IDSTEST spreadsheet information will be displayed.

Use F6 to create a new spreadsheet definition.

Enter the spreadsheet name and description. If required you can enter the name of the server job that should be used to generate the spreadsheet. This must have been defined already using option 22 on the IDSMAIN menu. This is fully explained further on in this document.

Select option 5 to view the spreadsheet setup values.

Fonts and Styles (Attributes)

Press F4 to view details

```
 IDSATRM              IDD Excel Attributes Maintenance       3/31/12  09:00:45

Spreadsheet Name: IDSTEST

Type choices, press Enter
 1=Update Record  3=Copy/Add  4=Delete
                                          Cell   Backgound
Sel  Style  Font                          Colour Colour     PointSize  Italic
 _   ST2                                                     8.0
            Cell    Hrz   Column         Edit New   Page  Image   Init
     Bold Wrap Pattern Align Control Spaces Code Sheet Break Code    Cell
     000                                  2                   1
     Cell Text



     Style Description


                                                                      More...
F3=Exit  F12=Cancel  F6=Add  F10=Column Controls  F11=Edit Codes  F13=Headings
F14=Spreadsheet Level  F15=Sheet Names  F17=Functions  F19=Images F23=SFL View


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```

```
 IDSATRM              IDD Excel Attributes Maintenance       1/22/12  11:56:17

Spreadsheet Name: IDSTEST

Type choices, press Enter
 1=Update Record  3=Copy/Add  4=Delete

Sel  Style  Rotation  Underline
 _   DFTST
 _   HDR1   45         1
 _   ST1
 _   ST2
 _   ST3
 _   ST4
 _   ST5



                                                                      Bottom
F3=Exit  F12=Cancel  F6=Add  F10=Column Controls  F11=Edit Codes  F13=Headings
F14=Spreadsheet Level  F15=Sheet Names  F19=Images  F23=SFL View


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```

Style

The style code can be set to any value. This code will be placed by you within your spreadsheet file to apply attributes to specific cells or complete rows.

This code can also be used to set default styles for your spreadsheet. This default code can then be used in the 'Column controls' and 'Spreadsheet Level' screens. Using default code allows you to format a spreadsheet with no programming required.

Font

This should be set to the required Excel font.
If left blank your default font values will be used when your spreadsheet is displays. The system has predefined codes however more can be added if required. Use F4.
Note that this is case specific

Cell Colour

This is used to apply a colour to the text within a given cell. Use F4.

Background Colour

This is used to apply a colour to the background within a cell. If this is required it must be used in conjunction within the cell pattern field. Use F4

Point Size

This is any valid number.

Italic

Set this to '1' if you require the text within a cell to be displayed in italics.

Bold

Set this to '700; if you require the text within a cell to be displayed in bold.

Wrap

Set this to '1' if you would like to have text within a cell to be wrapped.

Cell Pattern

This is used to apply a pattern within a cell. Use F4

Vertical Alignment

This is used to set the vertical alignment within a cell. Use F4

Column Control

If this is set to 'N' the data within a given cell will NOT be used to calculate column widths. As cells are created, the column width is calculated by the number of characters used within the cell. By setting this to 'N' the data in a particular cell will be excluded from column width calculations.

Spaces

Use this option to insert a given number of spaces after the text in a cell.

Edit Codes

Use this field to apply edit codes to cells. You may want to always have 2 decimal places even when the value might be 1.00 for example. This value is used to look for edit codes set up in the edit code control file.

New Sheet

Use this field to tell the system to start a new sheet within the spreadsheet. If a new sheet is not requested by using this option and the data exceeds 65535 rows then a new sheet will be automatically started.

Page Break

Use this field to tell the system to start a new page. This is used for printing a document and separating pages.

Image Code

Use this field to insert an image number that is linked to the image you would like to have placed in the document. Using an image code

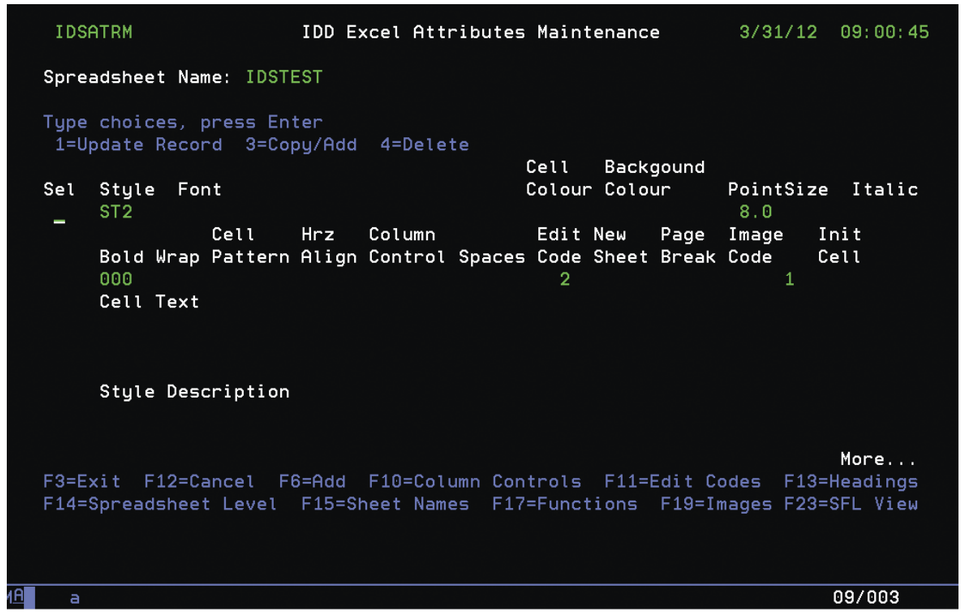
here will place the image dynamically into the related position. In other words you can move an image around.

Init Cell

This controls at cell level whether a cell will be initialized or not.

Cell Text

Use this field to place text within the spreadsheet. You may have a total or a break in some way within your data that would require a piece of text to go within it. If specified the text will be placed in the next cell in the spreadsheet.



Rotation

Cell text can be rotated by + or – 90 degrees. Use F23 to view this option.

Underline

Enter the required code to underline the text with a cell. The codes and their functions can found in Appendix E of this document.Use F23 to view this option.

Functions

The code tells the system which function you would like to apply to this style. The start/end options tells the system to either start the function or end the function. It also allows a code to place the result of a function in a given place. See F4 for options
The system will store the coordinates when a start request is found and then find that entry when the end request is found. If a place request is found, the system will move the result of the function to the requested cell.

If multiple starts are issued for the same function code the system will apply any end codes found in reverse order. In other words as end requests are found they are applied to the last start request that does not yet have a end request.

Merge

The merge option allows you to specify the start and end coordinates of a group of cells that should be merged. See F4 for options.
As with the functions option. If multiple starts are issued for the same merge area the system will apply any end codes found in reverse order. In other words as end requests are found they are applied to the last start request that does not yet have a end request.

Vertical Alignment

Use this option to vertically align values within a cell. This option is used in conjunction with the merge option.

Column Controls

```
 IDSATRM              IDD Excel Attributes Maintenance       3/31/12  09:00:45

Spreadsheet Name: IDSTEST

Type choices, press Enter
 1=Update Record  3=Copy/Add  4=Delete
                                          Cell   Backgound
Sel  Style  Font                          Colour Colour     PointSize  Italic
 _   ST2                                                     8.0
 _   ST3                                                    10.0
 _   ST4                                                     8.0
 _   ST5                                                     8.0
 _   ST6                                    10     19        8.0
 _   ST7                                    10               8.0
 _   ST8                                    10              12.0
 _   ST9                                    11              10.0
 _   ST98                                   10
 _   ST99                                   10               8.0

                                                                        Bottom
F3=Exit  F12=Cancel  F6=Add  F10=Column Controls  F11=Edit Codes  F13=Headings
F14=Spreadsheet Level  F15=Sheet Names  F17=Functions  F19=Images F23=SFL View


MA  a                                                              09/003
```

Press F10 from the Attributes maintenance display.

```
 IDSCWM             IDD Excel Column Controls Maintenance     3/31/12  09:03:52

Spreadsheet Name: IDSTEST

Type choices, press Enter
 1=Update Record  3=Copy/Add  4=Delete   6=Insert Adjust  7=Delete Adjust

     Column  Min    Max    Auto    Init    Default  Default   Sort
Sel  Number  Width  Width  Filter  Column  Style    Function  Seq   Hide
 _     1                                                          Y
 _     3                                                          Y
 _     6       10                       ST2                       Y
 _     7       15                       ST2
 _     8       10                       ST2          3

                                                                        Bottom
F3=Exit  F12=Cancel  F6=Add


MA  a                                                              10/003
```

Column width Min/Max

These entries do no not control the amount of characters that can be in any one cell, they control only the width of the columns when being displayed. If there are no entries in the above table to set minimum and maximum width values for a cell the system calculates the width on the amount of characters within a cell.

Auto Filter

The Auto Filter flag allows you to specify whether an auto filter will be applied to a specific column. If required set this to 'Y'.

Initialize Column

The initialise column tells the system to initialise all numeric and character cells within a column. If the column is a character column a blank cell will be initialised. If the column is numeric a zero cell will be initialised.

Normally blank/zero cells will not be processed as this can effect performance however it may be required so that cell attributes can be applied. If required set this to 'Y'.

Default Style

This option allows you to apply a default style to a column. The style will have been defined in the attribute maintenance screen. This allows styles to be applied with no programming required.

Default function

This option allows you to apply a default function to a column. The function will have been defined in the functions/formula maintenance screen. This allows a function to be applied with no programming required.

Sort sequence

You can use this option to sort the data into the required sequence. Give each entry a unique number.

Hide Column

Use this option to hide a particular column from being displayed in the spreadsheet. This does not stop the column from being generated.

Edit Codes

```
 IDSATRM              IDD Excel Attributes Maintenance       3/31/12  09:05:06

Spreadsheet Name: IDSTEST

Type choices, press Enter
 1=Update Record  3=Copy/Add  4=Delete
                                          Cell   Backgound
Sel  Style  Font                          Colour Colour     PointSize  Italic
 _   DFTST  Courier New                     10               12.0
 _   DV1
 _   HDR
 _   HDR1                                   17     35
 _   HDR2                                          22
 _   ST10                                   10               10.0
 _   ST11                                   10     12        10.0
 _   ST2                                                      8.0
 _   ST3                                                     10.0
 _   ST4                                                      8.0
 _   ST5                                                      8.0
                                                                    More...
F3=Exit  F12=Cancel  F6=Add  F10=Column Controls  F11=Edit Codes  F13=Headings
F14=Spreadsheet Level  F15=Sheet Names  F17=Functions  F19=Images F23=SFL View

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```

Press F11 from the Attributes maintenance display.

```
 IDSECM               IDD Excel Edit Code Maintenance        3/31/12  09:05:45

Spreadsheet Name: IDSTEST

Type choices, press Enter
 1=Update Record  3=Copy/Add  4=Delete

     Edit Code  Edit                                        Additional
Sel  Number     Code                                        Characters
 _   001        [YELLOW][#,##0.00;[GREEN]-[#,##0.00]          3
 _   002        £00.00                                       2

                                                                    Bottom

F3=Exit  F12=Cancel  F6=Add
Record updated successfully

MA  a                                                          10/003
```

The edit codes control how numeric data is displayed within any given cell in the spreadsheet. The edit code number is stored within a style which has previously been set up within the 'Fonts and Styles (Attributes)' section.

The above entries show that when edit code 1 is placed in a style/font, all data will start with a '$' sign and always have 2 decimal places. Edit code 2 will always start with a '$' sign and always have 1 decimal places.

Additional characters can be used to allow for the edit code characters within the data. If the numeric value is 100.00 and the edit codes changes the cell to display £100.00. The '£' sign creates 1 extra character within the cell so this value can be set to 1 which increases the cell width by 1.

Column Headings

```
 IDSATRM              IDD Excel Attributes Maintenance       3/31/12  09:07:01

Spreadsheet Name: IDSTEST

Type choices, press Enter
 1=Update Record  3=Copy/Add  4=Delete
                                          Cell   Backgound
Sel  Style  Font                          Colour Colour     PointSize  Italic
 _   DFTST  Courier New                     10               12.0
 _   DV1
 _   HDR
 _   HDR1                                  17     35
 _   HDR2                                         22
 _   ST10                                  10               10.0
 _   ST11                                  10     12        10.0
 _   ST2                                                     8.0
 _   ST3                                                    10.0
 _   ST4                                                     8.0
 _   ST5                                                     8.0
                                                                      More...
F3=Exit  F12=Cancel  F6=Add  F10=Column Controls  F11=Edit Codes  F13=Headings
F14=Spreadsheet Level  F15=Sheet Names  F17=Functions  F19=Images F23=SFL View

A    a                                                          09/003
```

Column headings can be added in two ways. The first is from the IEXL parameter 'System Field Text' which uses the system held field descriptions from the file/field descriptions. This is the TEXT keyword in the file DDS

The second way of placing column headings in the spreadsheet is to use the above options.
The above entries tell the system that the text 'Town' should be placed in row 1 column 3 and the text 'Country' should be placed in row 1 column 4.

You can use options 6 and 7 to insert and delete heading and to adjust all headings in the same row.

You can use option 8 to insert blank headings. These can be used with the style codes created by the attribute maintenance screen to insert background attributes.

F7 can be used to display the headings within a spreadsheet as long as you have a mapped drive,

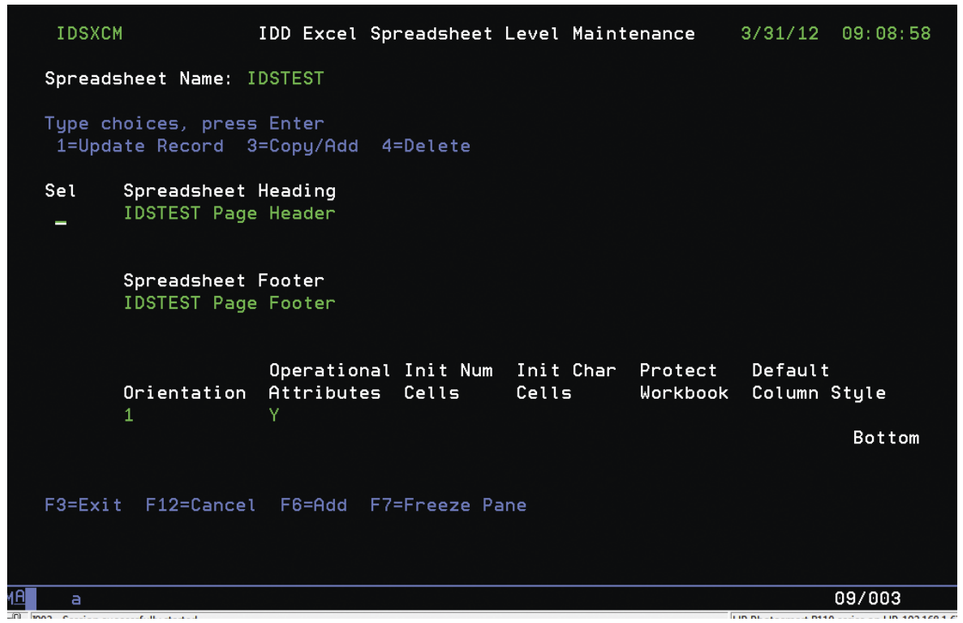
See Spreadsheet prerequisites later in this document for mapping drives. Also the spreadsheet named must already exist as a file in this case IDSTEST must exist as a file.

The entries in the above file are always searched for by the system when the spreadsheet is being created.

Press F13 from the Attributes maintenance display.

```
 IDSHDM              IDD Excel Column Heading Maintenance     3/31/12  09:08:11

Spreadsheet Name: IDSTEST

Type choices, press Enter
 1=Update Record  3=Copy/Add  4=Delete   6=Insert Adjust  7=Delete Adjust
 8=Insert Blank Headings
      Row     Column  Row Level  Cell Level  Short
Sel   Number  Number  Attribute  Attribute   Description
 _      1       1     HDR1                   Time: *Time
 _      1       2                            Address 1
 _      1       3                            Town
 _      1       4                            Country
 _      1       5                            Post Code
 _      1       6                            Amount 1
 _      1       7                            Date: *Date
 _      1       8                            Amount 2
                                                          More...


F3=Exit  F12=Cancel  F6=Add  F7=View Headings in Excel
Record updated successfully

iA   a                                                    10/003
```

Spreadsheet Level Controls



Press F14 from the Attributes maintenance display.

Use F4 to display the complete entry.

The above entries tell the generation program that the page header 'IDSTEST Page Header' and 'IDSTEST page Footer' should be placed within the spreadsheet.

It also sets the print/display attribute within the spreadsheet to landscape by having an entry of '1'.

Operational attributes set to 'Y' will cause the generation of an extra sheet within the workbook. This will contain information such as which server, who, when, how etc the spreadsheet was generated. This can be used by an operations department to search through archived documents.

The next two fields will initialize all zero and blank cells. The system will not by default initialize empty cells.

By setting Protect Workbook to 'Y', the system will generate a password for the speadsheet. The rules for password generation will be issued to all relevant IS staff by iData upon purchase.

The default column style can be used to apply a style to the whole workbook. The style will have already been defined within the attribute maintenance screen.

Freeze Panes

Within the Spreadsheet Level Maintenance screen you can press F7 to create freeze panes.

The above entries tell the system to freeze the first 7 rows of the spreadsheet and start displaying data from row 7 onwards.

End freeze column and Start display column can also be used to create a vertical freeze pane.

Sheet Names

```
 IDSATRM              IDD Excel Attributes Maintenance       3/31/12  09:10:19

Spreadsheet Name: IDSTEST

Type choices, press Enter
 1=Update Record  3=Copy/Add  4=Delete
                                          Cell   Backgound
Sel  Style  Font                          Colour Colour     PointSize  Italic
 _   DFTST  Courier New                     10               12.0
 _   DV1
 _   HDR
 _   HDR1                                  17     35
 _   HDR2                                         22
 _   ST10                                  10               10.0
 _   ST11                                  10     12        10.0
 _   ST2                                                     8.0
 _   ST3                                                    10.0
 _   ST4                                                     8.0
 _   ST5                                                     8.0
                                                                      More...
F3=Exit  F12=Cancel  F6=Add  F10=Column Controls  F11=Edit Codes  F13=Headings
F14=Spreadsheet Level  F15=Sheet Names  F17=Functions  F19=Images F23=SFL View
```

Press F15 from the Attributes maintenance display.

```
 IDSSNM               IDS Excel Sheet Name Maintenance       11/16/08  15:02:27

Spreadsheet Name: IDSTEST

Type choices, press Enter
 1=Update Record  3=Copy/Add  4=Delete

     Sheet      Sheet
Sel  Number     Name
 _   01         IDSTest Sheet 1
 _   02         IDSTest Sheet 2

                                                                      Bottom
F3=Exit  F12=Cancel  F6=Add
```

These entries can be used to name each individual sheet within the spreadsheet. In the above examples sheet 1 would be name 'IDSTEST Sheet 1' and sheet 2 would be named 'IDSTEST Sheet 2'. If no entries are found in the above file then the default name for a sheet is the spreadsheet name + '_' + sheet number.

Images

```
 IDSATRM              IDD Excel Attributes Maintenance       3/31/12  09:10:19

Spreadsheet Name: IDSTEST

Type choices, press Enter
 1=Update Record  3=Copy/Add  4=Delete
                                          Cell   Backgound
Sel  Style  Font                          Colour Colour     PointSize  Italic
 _   DFTST  Courier New                     10               12.0
 _   DV1
 _   HDR
 _   HDR1                                  17     35
 _   HDR2                                         22
 _   ST10                                  10               10.0
 _   ST11                                  10     12        10.0
 _   ST2                                                     8.0
 _   ST3                                                    10.0
 _   ST4                                                     8.0
 _   ST5                                                     8.0
                                                                      More...
F3=Exit  F12=Cancel  F6=Add  F10=Column Controls  F11=Edit Codes  F13=Headings
F14=Spreadsheet Level  F15=Sheet Names  F17=Functions  F19=Images F23=SFL View
```

Press F19 from the Attributes maintenance display

```
 IDSIMGM              IDD Excel Image Controls          8/30/10  14:20:54

Spreadsheet Name: IDSTEST

Type choices, press Enter
 1=Update Record  3=Copy/Add  4=Delete

     Sheet  Image   Image                          Start  Start  End    End
     Number Number  Code                           Column Row    Column Row
Sel
 _   01          1  i3                               5      2      7      4

     Dynamic Image: N
     Description..: Image 3

 _   01          1  i4                               6      3      8      5

     Dynamic Image: Y
     Description..: Image 4

                                                                      Bottom
F3=Exit  F12=Cancel  F6=Add
Record creation successful
```

Setting the dynamic image to 'Y' allows you to associate an image with a cell attribute. If you associate the above i3/i4 image code to an attribute the coordinates for the image 'i4' will be moved to the line and column that the attribute has been loaded into the work file.

Images that are defined as dynamic 'N' will be placed in the exact coordinates you have specified. Images are defined and controlled within the image catalogue which is maintained via option 15 from the IDSMAIN menu.

Functions and Formula

```
 IDSFCM              IDD Excel Function Code Maintenance      3/31/12  13:38:07

Spreadsheet Name: IDSTEST

Type choices, press Enter
 1=Update Record  3=Copy/Add  4=Delete

                          Row/
Sel  Number Function    Column  Style
 _       1  DIV         C       ST10
 _       2  AVERAGE     C       ST11
 _       3  SUM         C       ST11

                                                                    Bottom
F3=Exit  F12=Cancel  F6=Add

MA  a                                                          10/003
```

The above entries define three different functions.
1. Is division. The result of dividing two cells values
2. Is Average. The average of the range of cells selected
3. Is Sum. The sum of the range of cells selected

The Row/Column option tells the system whether the function is being applied to a row or column. This is only ever used when a function has been started but no end has been specified. If this happens and a row function has been specified the system will place the result of the function one column to the right of the end of the row. If a column function has been specified the system will place the result of the function one row after the end of the data.

You can select the style to apply a style that has been created via the attribute maintenance screens. This could be a colour, font, edit code etc.

See the Fonts and Style (Attributes) section within this document to see how a function is started, ended or placed.

Image Catalogue

```
IDSMAIN                          IDSMAIN Menu

Select one of the following:

     1. Spreadsheet Controls                  15.Image Catalogue
     2. E-Mail controls
     3. On Line Documentation

     5. Search E-mail Log


                                              22.Server Jobs




                                              90.Signoff
Selection or command
===> _

F3=Exit    F4=Prompt    F9=Retrieve    F12=Cancel
F13=Information Assistant  F16=System main menu

MA  a                                                          20/007
```

Take option 15 from the IDSMAIN menu.

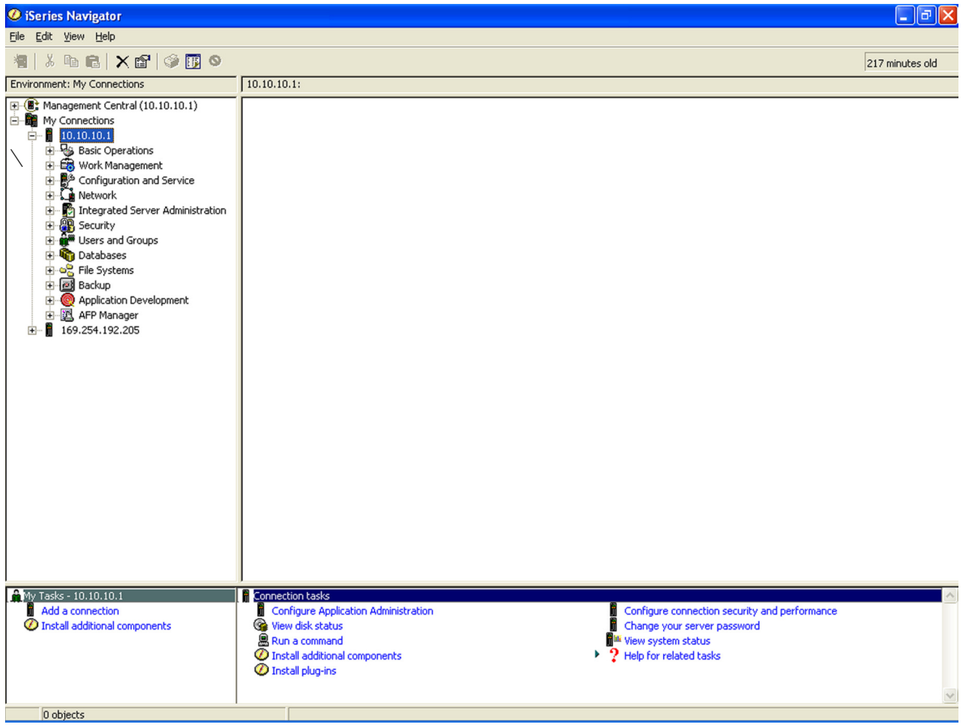
```
 IDSIMGCM          IDD Excel Image Catalogue Maintenance     9/06/10  12:52:35

     Image Code: _____________________________

Type choices, press Enter
 1=Update Record  3=Copy/Add  4=Delete

Sel  Image Code                      Short Image Description
 _   i3                              Image 3
     Image Description
     Image 3

     Image Path
     /iddexlimg/DSCN0476.JPG




     Image Type
     5  JPEG
                                                                    More...
F3=Exit  F12=Cancel  F6=Add

A  a                                                           03/019
```

The image catalogue defines the image path to the system and not to a specific spreadsheet. Once defined here the image can be linked to any spreadsheet. For image type values please see appendix D.

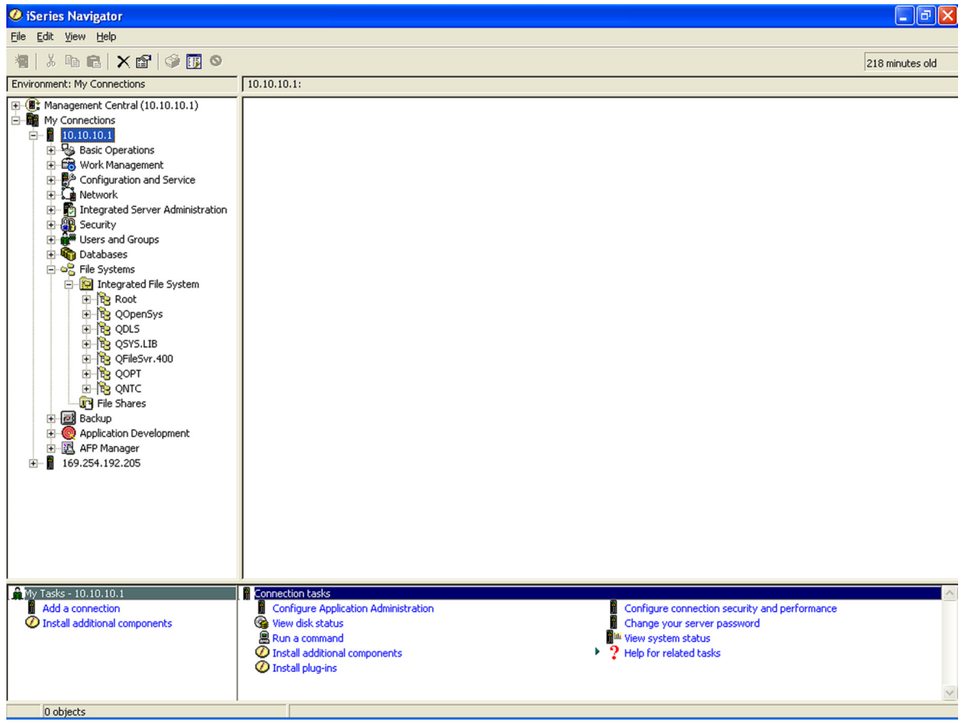
Spreadsheet Prerequisites

If you wish to use the iEXL facility to display spreadsheets directly to user's screens you must have a shared IBM I drive active. If you do not already have a shared drive mapped to your system follow the below instructions.

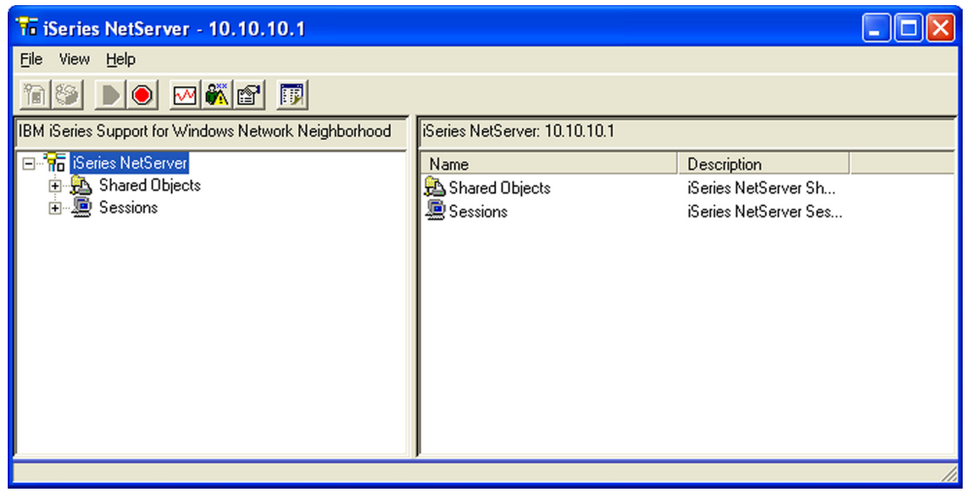
This is also required to use F7 within column headings.



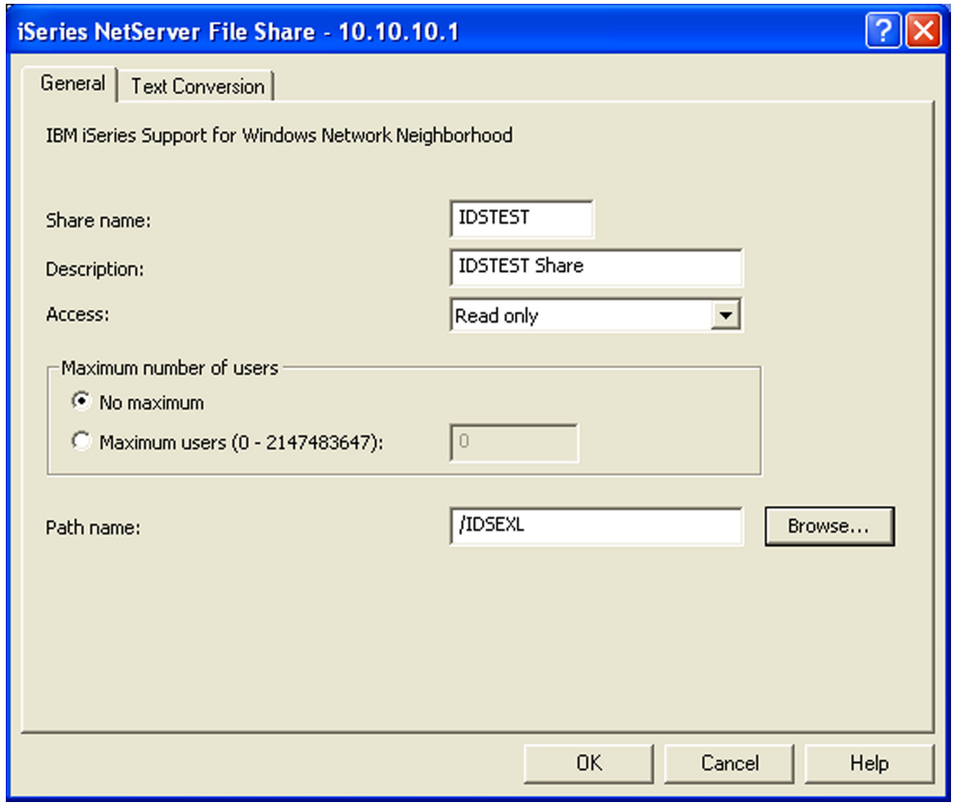
Select File Systems.



Right Click file shares and select 'Open Iseries Netserver'



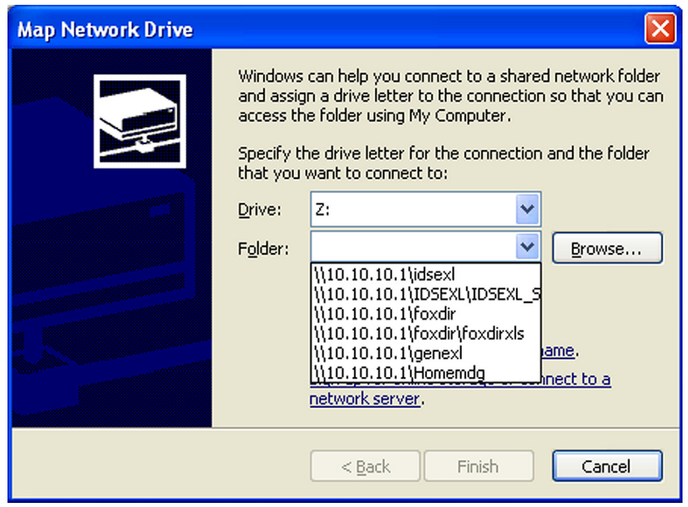
Right click shared objects and select new file.



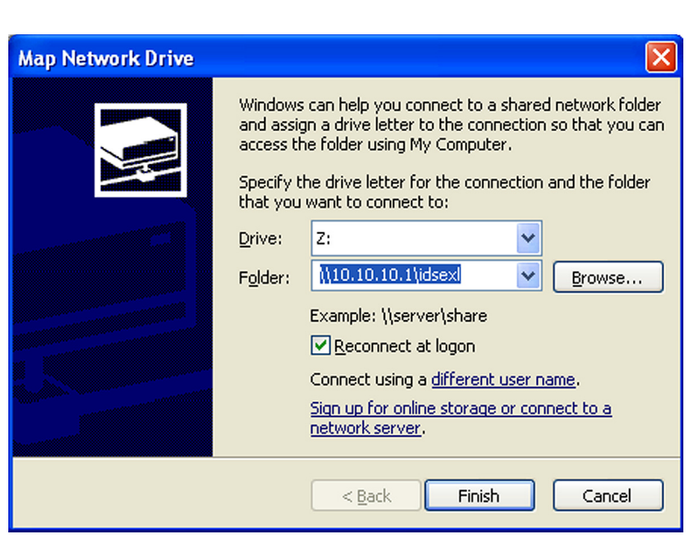
Enter required descriptions and select path. Press OK to create share.

Now that your shared IBM I drive is active, you need to map one of your PC or network drives to the IBM I share you have just created.

From Windows Explorer select tools, map network drive.



Select the required folder from your list



Select 'connect using a different user name'.

Enter your IBM I user ID and password.

Click 'Finish'

4 E-mail Control Files

The control files are maintained via a set of screens which will allow you to enter the required functions. These screens can be accessed from the IDSMAIN menu.

From a command line enter GO IDSMAIN

```
IDSMAIN                          IDSMAIN Menu

Select one of the following:

     1. Spreadsheet Controls                  15.Image Catalogue
     2. E-Mail controls
     3. On Line Documentation

     5. Search E-mail Log


                                              22.Server Jobs




                                              90.Signoff
Selection or command
===> _

F3=Exit    F4=Prompt    F9=Retrieve    F12=Cancel
F13=Information Assistant  F16=System main menu

MA    a                                                    20/007
```

Select option 2 E-mail Controls.

E-mail Authorities

```
 IDSEAM              IDS E-mail Authority Maintenance       11/18/08  19:34:55

User: MDG_____

Type choices, press Enter
 1=Update Record  3=Copy/Add  4=Delete  5=E-mail Header Level
 6=Copy All Levels
                                Internal/
Sel  User        Active   External/Both   Short Description
 _   MDG         Y        B               Mark Golden

                                                                      Bottom
F3=Exit  F12=Cancel  F6=Add
```

The E-mail system works on a user level basis where each user has their own specific entries for E-mails to be distributed. This can stop E-mails being sent inadvertently when a user runs a job.

This first screen controls if a user can send E-mails and what type of user they are. When jobs are run, the user is the user sign-on profile to the IBM I .

In the above example the user is MDG.
The user is active. The user can be either deleted permanently or set to inactive which will remove the authority to issue E-mail.
The user is defined as type both. Users can be defined as being authorised to send internal only, external only or both types of E-mails.
A short description can also be defined.

Once a user has been defined as being authorized to send E-mails they will need to be setup as to which E-mails can be sent. These are defined as E-mail Headings which are received from the distribution lists previously covered in the iEXL command description.

From the above screen select option 5 'E-mail Header Level'

E-mail Headers

```
 IDSEHM     IDS E-mail Distribution List Header Maintenance  11/18/08  19:48:26

User: MDG          Short Description: Mark Golden

Type choices, press Enter
 1=Update Record  3=Copy/Add  4=Delete  5=E-mail Recipents  6=Email Senders

     Distribution  Distribution           Short
Sel  List          List Qualifier  Active  Description
 _   DLST1         DLST1Q          Y       Distrbution List 1

                                                                       Bottom
F3=Exit  F12=Cancel  F6=Add
```

In the above example the user MDG is set to issue E-mails via the distribution list DLST1 with qualifier DLST1Q. The list is active and has a brief description.

Again, like at authority level this entry can be deactivated rather than being deleted which removes this entry from the user MDG list.

To see a list of recipients for this distribution list select option 5.

E-mail Recipients

```
 IDSETM                IDS E-mail Recipient Maintenance      11/18/08  20:10:01

User: MDG          Short Description: Distrbution List 1
Distribution List.....: DLST1    Distribution List Qualifier:  DLST1Q

Type choices, press Enter
 1=Update Record  3=Copy/Add  4=Delete

                   Internal       Short
Sel  Active  External/Both  E-mail Address
 _   Y       I              M.SMITH@CMY1.COM
 _   Y       B              MARK_GOLDEN@CDS.CO.IE
 _   Y       B              ROBERT_HUNTER@CMPY2.COM
 _   Y       B              S.STRONG@CMPY2.COM

                                                                       Bottom
F3=Exit  F12=Cancel  F6=Add
```

In the above example the entries for user MDG using distribution list DLST1, DLST1Q will issue 4 e-mails. All entries are active, however each can be disabled or deleted if required.

In the above example one 1 entry is defined as an internal E-mail address and three entries are defined as external. When user MDG was defined in the authority display it was defined as type 'B' for both, so all E-mails will be issued.

If the user MDG was changed to 'I' internal only then only the E-mail to M.SMITH@CMY1.COM would be issued.

Press F12 to return to the E-mails header screen.

E-mail Sender

```
 IDSEHM     IDS E-mail Distribution List Header Maintenance  11/18/08  19:48:26

User: MDG          Short Description: Mark Golden

Type choices, press Enter
 1=Update Record  3=Copy/Add  4=Delete  5=E-mail Recipents  6=Email Senders

     Distribution  Distribution            Short
Sel  List          List Qualifier  Active  Description
 _   DLST1         DLST1Q          Y       Distrbution List 1

                                                                       Bottom
F3=Exit  F12=Cancel  F6=Add
```

Select option 6 to display the sender of this E-mail.

```
 IDSESM                IDS E-mail Sender Maintenance        11/18/08  20:14:26

User: MDG          Short Description: Distrbution List 1
Distribution List.....: DLST1    Distribution List Qualifier:  DLST1Q

Type choices, press Enter
 1=Update Record  3=Copy/Add  4=Delete

            Internal       Short
Sel  Active External/Both  E-mail Address
 _   Y      I              DAMIAN.NEDLOG@SENDER.CO.UK

                                                                       Bottom
F3=Exit  F12=Cancel  F6=Add
```

This entry defines who the sender of the E-mail is to be. Only one entry per distribution list/distribution list qualifier is allowed. An E-mail log file is used to record which user and job actually sent the E-mail.

E-mail Body Text

A file can be created that contains any E-mail body text that you would like to be inserted into the E-mail. This file is entered in the 'E-mail body text file' parameter on the iEXL command. The file itself is stored in your named IFS directory

```
Copy selected text to clipboard
Browse : /IDSEXL/IDSEXL_EMailBodies/ExampleBody.Txt
Record :      2   of      20 by  14          Column :    1    180 by  79
Control : _____________________________________________________________

....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+....

*******************************************************************************


                    This E-mail Has been Issued by User MDG
                                  Company IDS.


Disclaimer
IDS Company Information.

*******************************************************************************



F3=Exit   F10=Display Hex   F12=Exit  F15=Services  F16=Repeat find
F19=Left   F20=Right

A   b                  MW                                        03/012
```

To create a directory to store these files see Appendix E.

E-mail Controls

A file named EMAILEPF is contained within the library IDDEXL. This contains control information about mail routers and default values for the E-mail system. There is no maintenance program supplied for this file as once it is setup it should not be changed.

```
                        Select and Sequence Fields

Type sequence numbers (1-999) to select fields, press Enter.

Seq  Field             File            Text
___  RESRVR            EMAILEPF        SMTP Mail Server
___  REXDPT            EMAILEPF        Dft EXCEL Dir Path
___  REBDPT            EMAILEPF        Dft E-Mail Body Dir Path
___  RESYSN            EMAILEPF        System Name
___  REDMNN            EMAILEPF        Domain Name
___  REDEMA            EMAILEPF        Dft From E-Mail Address
___  RECPTH            EMAILEPF        Update CLASSPATH

                                                                    Bottom
F3=Exit   F5=Refresh   F11=Display nulls   F12=Cancel   F17=Select files
F19=Display system field names   F20=Display entire name

MA  a                                                          07/002
```

RESRVR: This should be set to the same value as MAILROUTER is set within your SMTP attributes. (The command CHGSMTPA can be used to view your MAILROUTER value.)

REXDPT: This should be set left blank.

REBDPT: This should be set left blank.

RESYSN: This should be left blank.

REDMNN: This should be set to the required domain name. I.E @CDS.CO.UK, @IDS.COM

REDEMA: Enter a default E-mail address for a sender, without specifying the domain name. If no sender address has been defined for the E-mail being sent this will be used in conjunction with the value in REDMNN to build a default sender E-mail address.

Search E-mail Log

This screen can be used to search for any emails that have been sent. It allows for various keywords to be used to find a spreadsheet. This will then show the path to where the spreadsheet has been saved. This can help if a previously generated spreadsheet is requested again.

```
 IDSEML                    IDD E-mail Log Search              3/31/12  14:11:09

 Search Criteria:
 Job Name: _________  and/or Job Number: ______
 and/or Job User: _________
 and/or Distribution List: ________  and/or Dist/List Qualifier: ________
 and/or Spreadsheet name: ____________________  and/or ____________________

Spreadsheet Path and Name

 F3=Exit  F12=Cancel

MA  a                                                          04/013
```

E-mail Search

The E-mail search screen allows you to search for any spreadsheets that have been saved and E-mailed. Various search criteria can be entered to allow the lookup.

```
 IDSEML                    IDD E-mail Log Search              1/22/12  12:14:35

 Search Criteria:
 Job Name: _________  and/or Job Number: ______
 and/or Job User: _________
 and/or Distribution List: ________  and/or Dist/List Qualifier: ________
 and/or Spreadsheet name: ___________________  and/or ___________________

Spreadsheet Path and Name



F3=Exit  F12=Cancel


MA    b                                                          04/013
```

Server Jobs

Server jobs have been designed to improve performance mainly when the Java Virtual Machine (JVM) is started. Each time a new request is made a new JVM has to be created which will use system resources.

If you choose to use a server job (see Page 9) iEXL will start a subsystem called iEXL. Within that subsystem a job with the same name as the server name associated with the spreadsheet will be started. This job will remain active for 1 hour after a request has been made. This means the JVM remains active and reduces system resources. An example of this is.

```
 IDSWKM              IDD Excel Spreadsheet Maintenance       1/25/12  20:40:05

Spreadsheet: _____________________________________________________

Type choices, press Enter
 1=Update Record  3=Copy/Add  4=Delete  5=Setup  6=Duplicate

Sel  Spreadsheet
 _   IDSTEST


     Spreadsheet Description
     Test Spreadsheet



     Spreadsheet server Job Name
     IDSTESTSVR
                                                                    More...
 F3=Exit  F12=Cancel  F6=Add


MA    a                                                          03/015
```

Server job IDSTESTSVR has been associated with the spreadsheet IDSTEST.

```
 XLSSRV              IDD Excel Server Job Maintenance        1/25/12  20:41:37


Type choices, press Enter
 1=Update Record  3=Copy/Add  4=Delete

     Server     Server
Sel  Name       Description
 _   IDSTESTSVR IDSTEST Server




                                                                    Bottom
 F3=Exit  F12=Cancel  F6=Add


MA    a                                                          10/003
```

IDSTESTSVR is then defined using option 22 from the IDSMAIN menu.

This example shows a specific spreadsheet with a specific server job however many spreadsheets can be generated by one server job. For example you could have all accountancy spreadsheets generated by one server job.

5 Examples

Until your understanding of the system and the way it works has improved it is suggested that you start with small test files. This is so you can view your spreadsheets and e-mails quickly. Once this has been accomplished expand the file sizes and the amount of data they contain.

If you intend to view the spreadsheet via your PC you must have a shared drive configured. You will need this if you use the 'View Data in Excel' parameter which will immediately display your spreadsheet. If you do not use this parameter and use the 'Store a copy of the Document' parameter you will still need a shared drive to view the document via Windows Explorer.

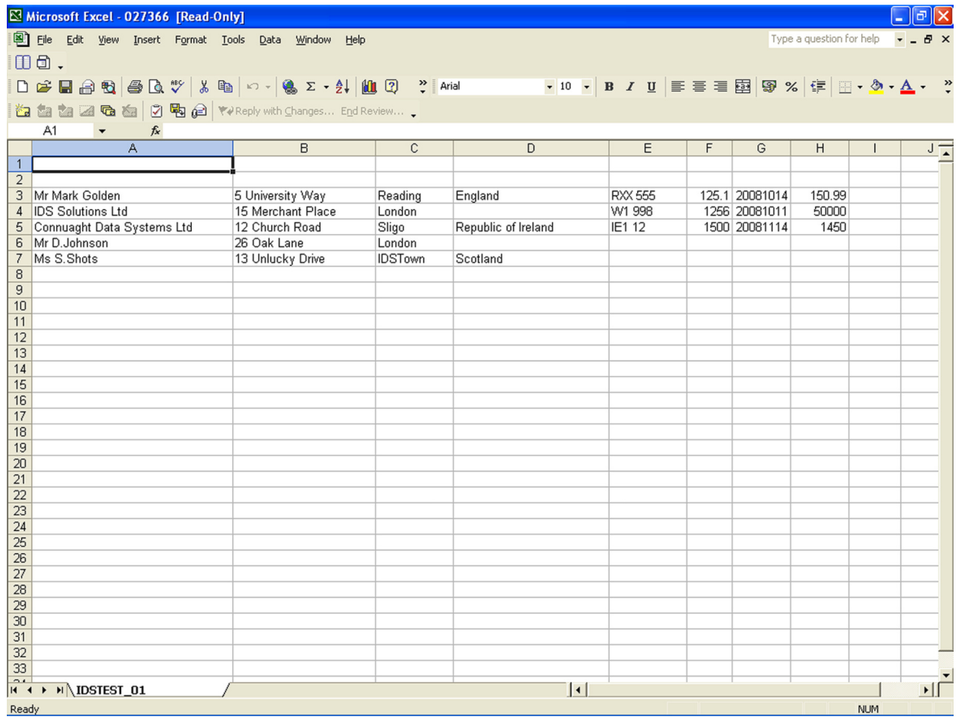
Example 1 – Basic Spreadsheet

File IDSTEST is supplied with the system

Make sure the IDSEXL library is last in your library list.

Enter the following command.

iEXL FILE(IDSTEST) VFILE(Y). The following will be displayed.

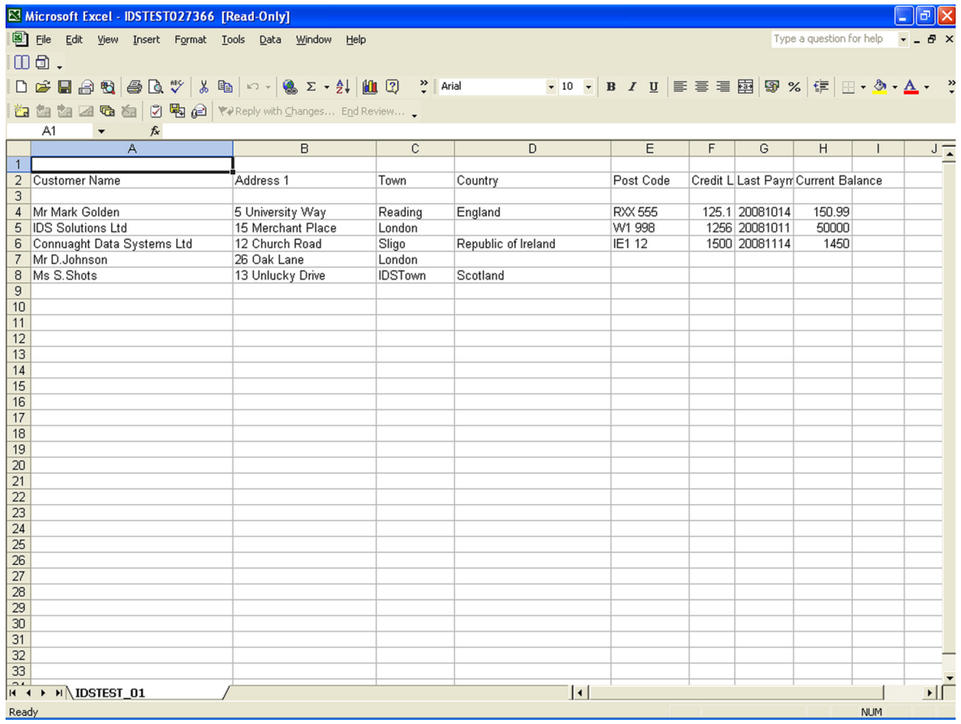


The only attributes that are taken from the file are from the IBM I system description of the file, For example, column G and H display decimal places.

Use the 'Column Headings' screen to insert some relevant descriptions

Enter the following command.

iEXL FILE(IDSTEST) SPN(IDSTEST) VFILE(Y). Note that the SPN parameter has been added. This parameter is used to search all the spreadsheet controls files for entries. The following will be displayed.



	A	B	C	D	E	F	G	H	I	J
1										
2	Customer Name	Address 1	Town	Country	Post Code	Credit L	Last Payn	Current Balance		
3										
4	Mr Mark Golden	5 University Way	Reading	England	RXX 555	125.1	20081014	150.99		
5	IDS Solutions Ltd	15 Merchant Place	London		W1 998	1256	20081011	50000		
6	Connaught Data Systems Ltd	12 Church Road	Sligo	Republic of Ireland	IE1 12	1500	20081114	1450		
7	Mr D.Johnson	26 Oak Lane	London							
8	Ms S.Shots	13 Unlucky Drive	IDSTown	Scotland						

You now have your column descriptions.

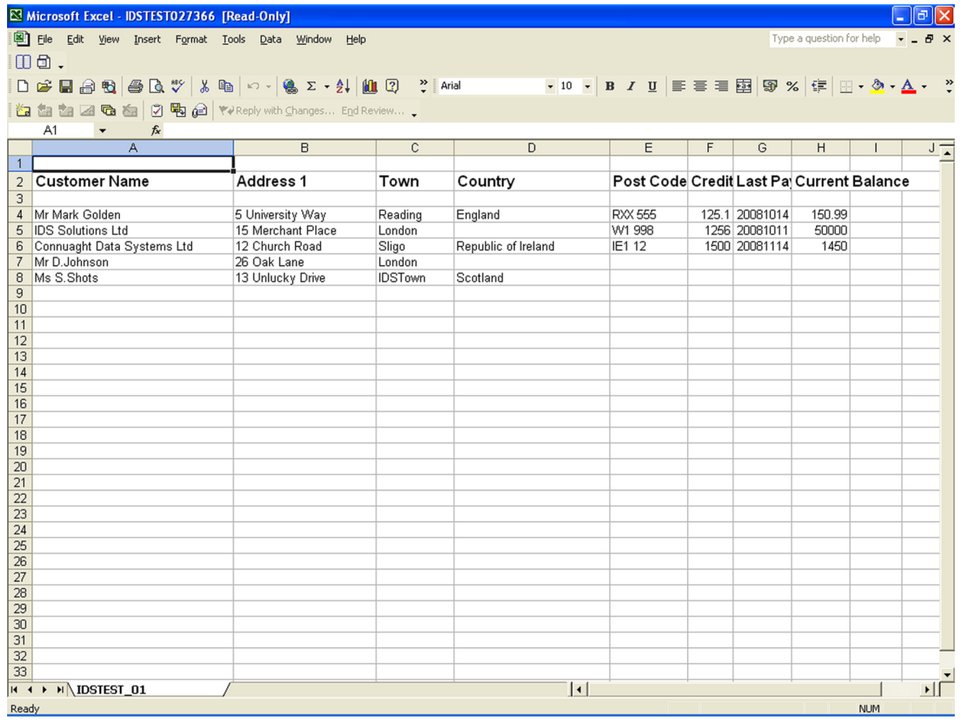
Change your column headings to be highlighted.
Using the Column Headings display update all your entries with a cell level attribute named ST1.
This can be any code you choose however for this example use ST1.
Note that at present the row level attribute is not active for headings.

Use F12 to return to the Attributes maintenance screen. Press F6 to add a style/attribute.

The Style will be ST1, the code you added to all your column headings.
Set the point size to 12.
Set the Bold to 700.
Press enter to update.

Enter the following command.

iEXL FILE(IDSTEST) SPN(IDSTEST) VFILE(Y). The following will be displayed



	A	B	C	D	E	F	G	H	I	J
1										
2	Customer Name	Address 1	Town	Country	Post Code	Credit	Last Pa	Current Balance		
3										
4	Mr Mark Golden	5 University Way	Reading	England	RXX 555	125.1	20081014	150.99		
5	IDS Solutions Ltd	15 Merchant Place	London		W1 998	1256	20081011	50000		
6	Connaught Data Systems Ltd	12 Church Road	Sligo	Republic of Ireland	IE1 12	1500	20081114	1450		
7	Mr D.Johnson	26 Oak Lane	London							
8	Ms S.Shots	13 Unlucky Drive	IDSTown	Scotland						

Note the change in the headings.

Example 2 – Spreadsheet with Attributes

Cell and row attributes within the actual data are recognised by using the IBM I system field text. Row level attributes are recognised by the text 'Atr Excel Rec' and cell level attributes are recognised by the text 'Atr Excel Fld'. Note this is case sensitive.

```
A       R RIDS                  TEXT('Test IDS  File')
A       DSRPGR          10      TEXT('Atr Excel Rec PGR')
 *
A       DSNAMA          10      TEXT('Atr Excel Fld NAM#')
A       DSNAM#          50      TEXT('Customer Name')
 *
A       DSADRA          10      TEXT('Atr Excel Fld ADR1')
A       DSADR1          50      TEXT('Address Line 1')
 *
A       DSAD2A          10      TEXT('Atr Excel Fld ADR2')
A       DSADR2          50      TEXT('Address Line 2')
 *
A       DSAD3A          10      TEXT('Atr Excel Fld ADR3')
A       DSADR3          50      TEXT('Address Line 3')
 *
A       DSPSTA          10      TEXT('Atr Excel Fld PSTC')
A       DSPSTC          10      TEXT('Post Code')
 *
A       DSABLA          10      TEXT('Atr Excel Fld CT#')
A       DSABAL           9 2    TEXT('Account Balance')
 *
A       DSLPYA          10      TEXT('Atr Excel Fld CT2')
A       DSLPYM           8 0    TEXT('Last Payment Date')
 *
A       DSCRLA          10      TEXT('Atr Excel Fld CT4')
A       DSCRDL           9 2    TEXT('Credit Limit')
```

Taking the above example.

One record level attribute is defined at the beginning of the record. If an attribute code is placed in this it will be applied to the complete row.

Each field is defined as having its own attribute. If an attribute code is placed in any of these it will override the row level attribute.

In the above example DDS is used to define the file however any utility that can define files and the associated text can be used.

Default column styles can also used to set defaults for styles with no programming required. If specified the system will use the style entered to format the required column. See the column control and/or spreadsheet level control sections in this document. Pages 14 and 20.

This should be used when you would like to apply the same format to the whole column. When using the 'Atr Excel Rec' or 'Atr Excel Fld' setting each cell is formatted individually which can result in many calls to formatting programs. If you use the default column entry only one call is required to format the complete column. You can then specify the format for any individual cells using the 'Atr Excel Rec' or 'Atr Excel Fld' settings.

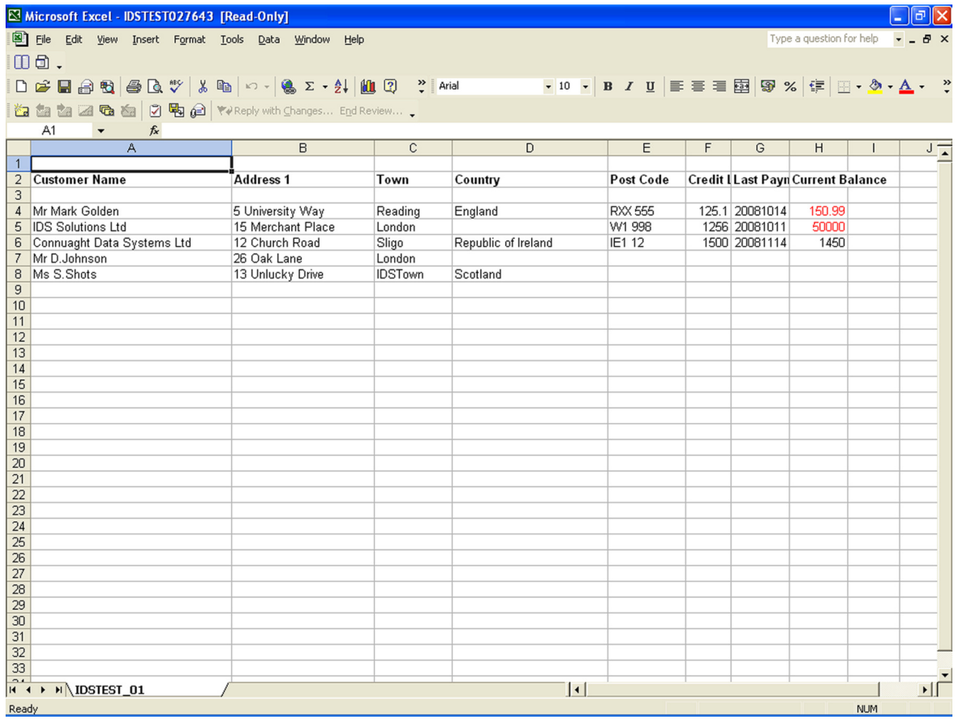
Using the data from example one it can be seen that the first and second customers are over their credit limit which you may want highlighted.

Use the Fonts And Styles (Attributes) screen to create a style called ST2. Set the cell colour to code 10. Colour code 10 is RED.

Within the file IDSTEST place the code ST2 in the field DSCRLA for the records that are over their credit limit.

Enter the following command.

iEXL FILE(IDSTEST) SPN(IDSTEST) VFILE(Y)



	A	B	C	D	E	F	G	H	I	J
1										
2	**Customer Name**	**Address 1**	**Town**	**Country**	**Post Code**	**Credit L**	**Last Payn**	**Current Balance**		
3										
4	Mr Mark Golden	5 University Way	Reading	England	RXX 555	125.1	20081014	150.99		
5	IDS Solutions Ltd	15 Merchant Place	London		W1 998	1256	20081011	50000		
6	Connuaght Data Systems Ltd	12 Church Road	Sligo	Republic of Ireland	IE1 12	1500	20081114	1450		
7	Mr D.Johnson	26 Oak Lane	London							
8	Ms S.Shots	13 Unlucky Drive	IDSTown	Scotland						

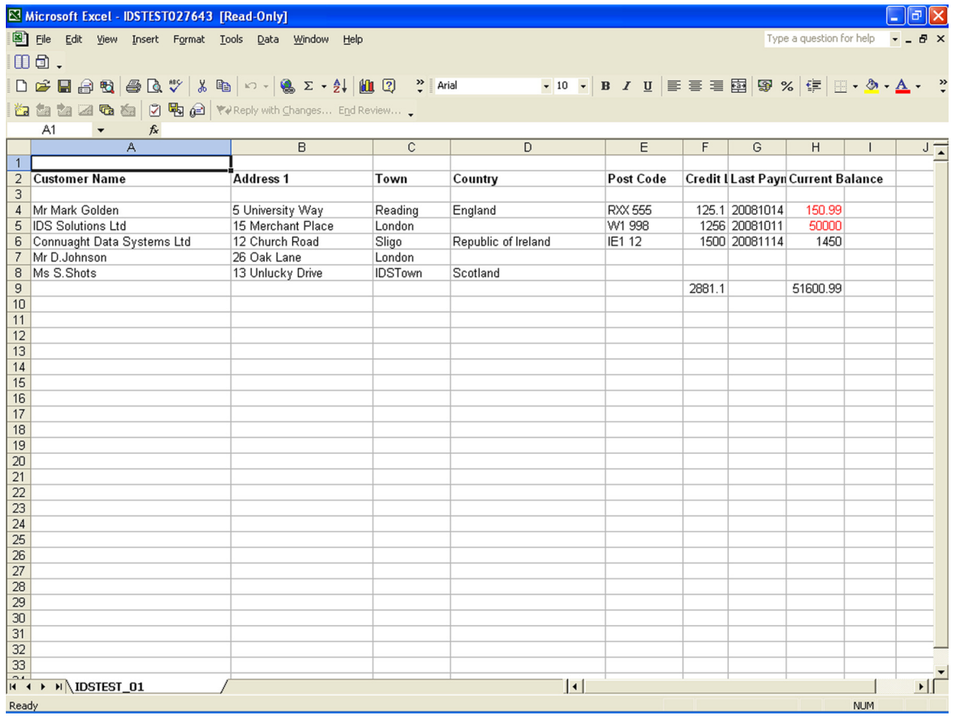
Note the selected cells are now highlighted in RED.

Example 3 – Spreadsheet with Text

Change the file IDSTEST so that it has a new record within it which could hold totals. Use any utility to create a record that has a credit limit of 2881.1 and a current balance of 51600.99

Enter the following command.

iEXL FILE(IDSTEST) SPN(IDSTEST) VFILE(Y)



	A	B	C	D	E	F	G	H	I	J
1										
2	**Customer Name**	**Address 1**	**Town**	**Country**	**Post Code**	**Credit L**	**Last Payn**	**Current Balance**		
3										
4	Mr Mark Golden	5 University Way	Reading	England	RXX 555	125.1	20081014	150.99		
5	IDS Solutions Ltd	15 Merchant Place	London		W1 998	1256	20081011	50000		
6	Connaught Data Systems Ltd	12 Church Road	Sligo	Republic of Ireland	IE1 12	1500	20081114	1450		
7	Mr D.Johnson	26 Oak Lane	London							
8	Ms S.Shots	13 Unlucky Drive	IDSTown	Scotland						
9						2881.1		51600.99		

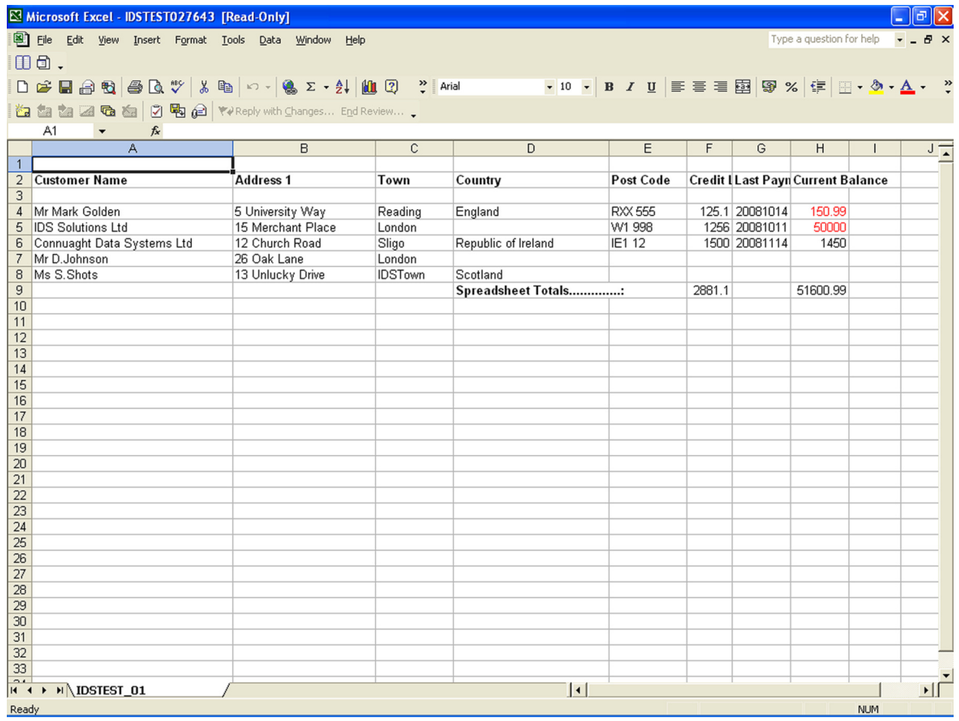
The new information is now displayed within the spreadsheet and text may be added to describe what they are.

Use the Fonts And Styles (Attributes) screen to create a style called ST3.
Set the bold code to '700'
Set the column control to 'N'
Set the cell text to 'Spreadsheet Totals.....:'

Within the file IDSTEST place the code ST3 in the field DSAD3A for the records that contains the totals.

Enter the following command.

iEXL FILE(IDSTEST) SPN(IDSTEST) VFILE(Y)



	A	B	C	D	E	F	G	H	I	J
1										
2	**Customer Name**	**Address 1**	**Town**	**Country**	**Post Code**	**Credit L**	**Last Payn**	**Current Balance**		
3										
4	Mr Mark Golden	5 University Way	Reading	England	RXX 555	125.1	20081014	150.99		
5	IDS Solutions Ltd	15 Merchant Place	London		W1 998	1256	20081011	50000		
6	Connaught Data Systems Ltd	12 Church Road	Sligo	Republic of Ireland	IE1 12	1500	20081114	1450		
7	Mr D.Johnson	26 Oak Lane	London							
8	Ms S.Shots	13 Unlucky Drive	IDSTown	Scotland						
9				**Spreadsheet Totals.....:**		2881.1		51600.99		

Specifying the column control attribute to 'N' stops the total text adjusting the size of column D.

Example 4 – Spreadsheet with Edit Codes

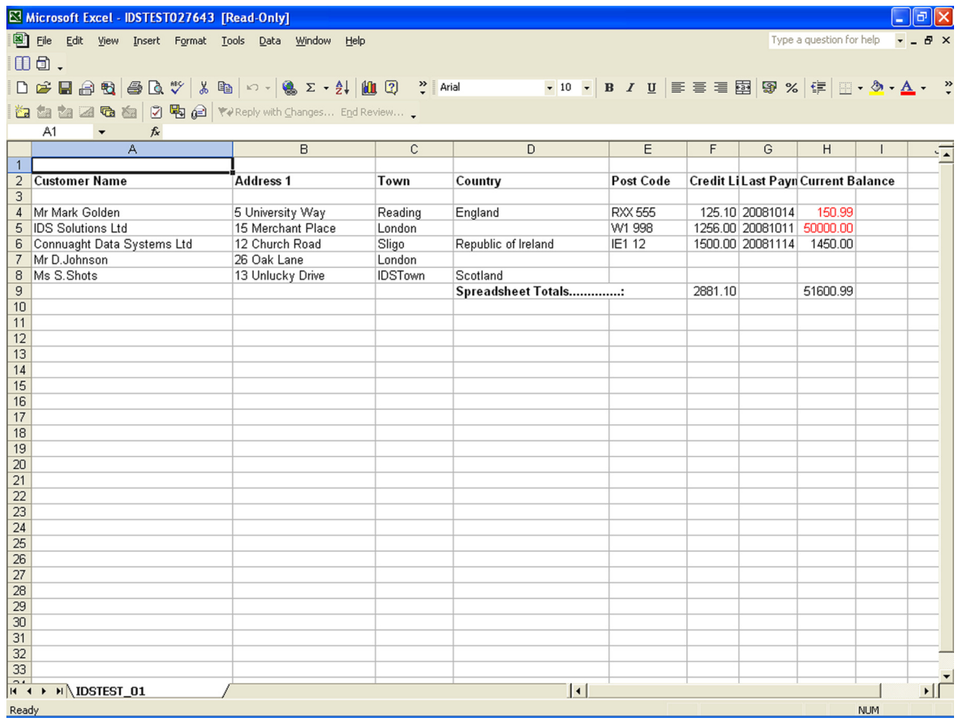
In Example 3 the credit limit column and current balance column are not aligned. To align them create the edit code number 1 with a edit code of ##.00

Change the existing font/style ST2 to have an edit code 1.
Change all records within the IDSTEST file to have a value of ST4 within fields DSABAL and DSCRDL if they do not already have a font/style code.

Use the Fonts And Styles (Attributes) screen to create a style called ST4. Set the edit code to 1.

Enter the following command.

iEXL FILE(IDSTEST) SPN(IDSTEST) VFILE(Y)



	A	B	C	D	E	F	G	H	I
1									
2	**Customer Name**	**Address 1**	**Town**	**Country**	**Post Code**	**Credit Li**	**Last Payn**	**Current Balance**	
3									
4	Mr Mark Golden	5 University Way	Reading	England	RXX 555	125.10	20081014	150.99	
5	IDS Solutions Ltd	15 Merchant Place	London		W1 998	1256.00	20081011	50000.00	
6	Connaught Data Systems Ltd	12 Church Road	Sligo	Republic of Ireland	IE1 12	1500.00	20081114	1450.00	
7	Mr D.Johnson	26 Oak Lane	London						
8	Ms S.Shots	13 Unlucky Drive	IDSTown	Scotland					
9				**Spreadsheet Totals.....:**		2881.10		51600.99	

Note that the numeric fields have now been aligned and always contain 2 decimal places.

Example 5 – Spreadsheet with Images

This example places a company logo at the top of the sheet. All the existing headings are moved down to line 3. A new blank heading is added.

```
 IDSHDM              IDD Excel Column Heading Maintenance      9/06/10  12:59:42

Spreadsheet Name: IDSTEST

Type choices, press Enter
 1=Update Record  3=Copy/Add  4=Delete   6=Insert Adjust  7=Delete Adjust

      Row     Column  Row Level  Cell Level  Short
Sel   Number  Number  Attribute  Attribute   Description
                                 ST5
 -
 -      3                        ST1         Customer Name
 -      3       1                ST1         Address 1
 -      3       2                ST1         Town
 -      3       3                ST1         Country
 -      3       4                ST1         Post Code
 -      3       5                ST1         Credit Limit
 -      3       6                ST1         Last Payment
 -      3       7                ST1         Current Balance

                                                                      Bottom
F3=Exit  F12=Cancel  F6=Add  F7=View Headings in Excel
```

The new heading entry has an attribute of ST5 inserted. The attribute ST5 has image code 1 linked to it.

```
 IDSATRM             IDD Excel Attributes Maintenance       9/06/10  13:00:46

Spreadsheet Name: IDSTEST

Type choices, press Enter
 1=Update Record  3=Copy/Add  4=Delete
                                          Cell   Backgound
Sel  Style  Font                          Colour Colour     PointSize  Italic
 -   ST5
              Cell              Column              Edit  New    Page   Image
     Bold  Wrap  Pattern   Align   Control  Spaces  Code  Sheet  Break  Code
     000                                                               1
     Cell Text


     Style Description


                                                                      Bottom
F3=Exit  F12=Cancel  F6=Add  F10=Column Widths  F11=Edit Codes  F13=Headings
F14=Spreadsheet Level  F15=Sheet Names  F17=Init Blank Columns  F19=Images
```

Image code 1 is linked to the spreadsheet.

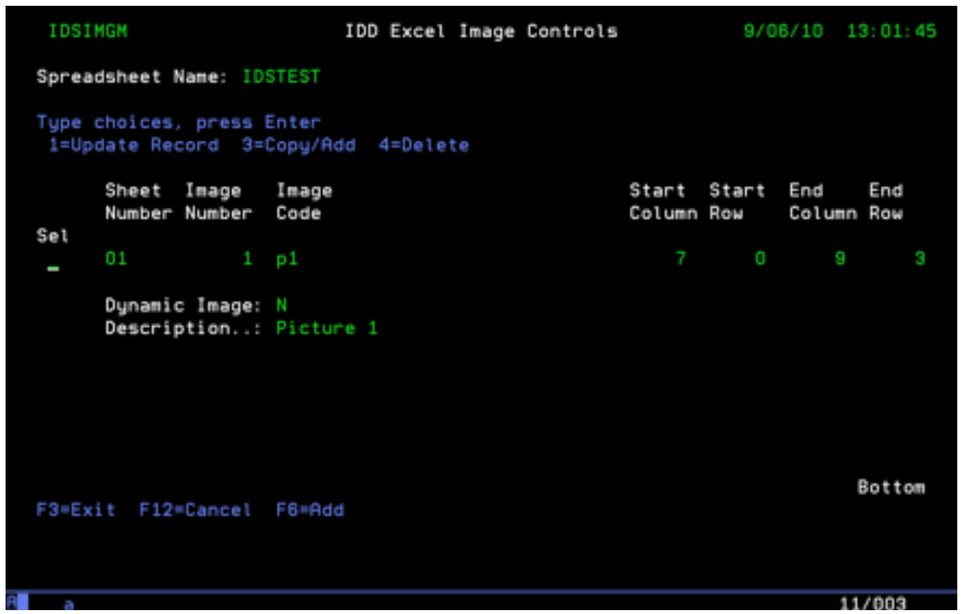
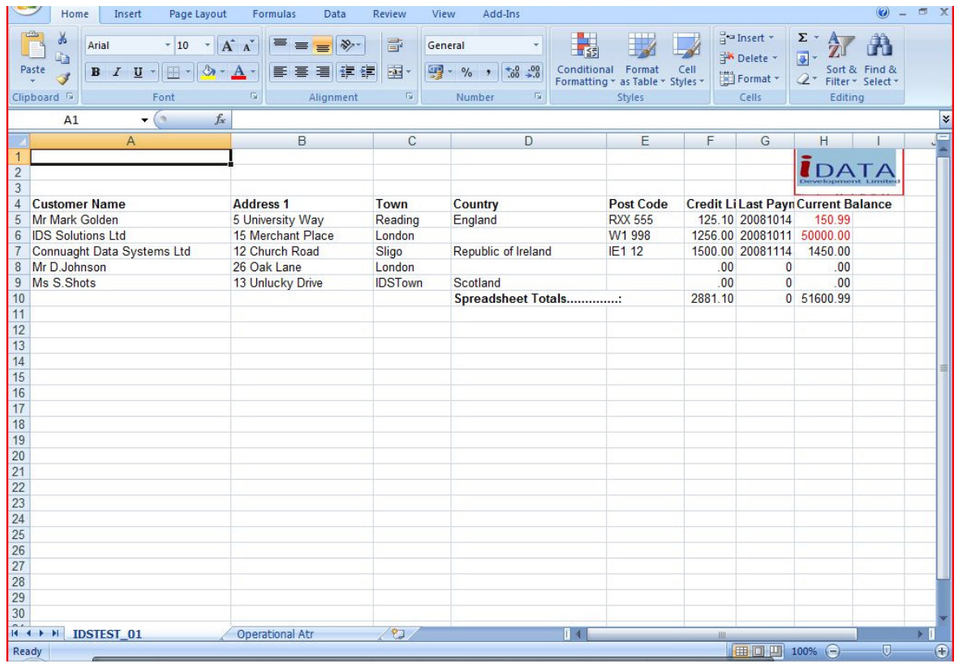


Image p1 is defined in the image catalogue as the iDATA company logo. This is then inserted into the sheet at the requested coordinates. Multiple images can be inserted into the spreadsheet.



Example 6 – Basic SQL

Set SQL to write to a work file.
Example of SQL Statement

SELECT qb@ocr, qb@cus, char(' ST1 ') as Excelatr ,qb@dlo

FROM f1111 WHERE qb@cus =

7907437

The third field in the view/definition has been named 'ExcelAtr' and given a value of ST1.
This field will be generated by the SQL statement.

As this point the field text for Excelatr is not set and the DSPFFD command which iEXL uses will retrieve blanks for the field text.

To set the field text to the one required by iEXL for attributes, issue the follow SQL statement.

Label on column F1111 (Excelatr TEXT IS 'Atr Excel Fld')

You can now setup all the iEXL attribute control files with the attribute code ST1.
The iEXL command can be run against the work file.

Example 7 – More Complex SQL

Create file definition

```
CREATE VIEW QTEMP/f1111tmp
(Order_Number, Customer, ExcelAtr, Loose_Price)
AS SELECT qb@ocr,qb@cus,
Case When qb@dlo < 25000 Then char('ST1')
When qb@dlo > 25000 Then char('ST2')
End,
decimal(qb@dlo/100,15,2) as qb@dlo
from F1111
Where qb@cus = 7907437
```

The third field in the view/definition has been named 'ExcelAtr'
Within the Select statement the rule has been set
where qb@dlo < 25000 then place 'ST1' in the third field.
where qb@dlo > 25000 then place 'ST2' in the third field.

The file F1111TMP in QTEMP will be created.

At this point the field text for Excelatr is not set and the DSPFFD command which iEXL uses command will retrieve blanks for the field text.

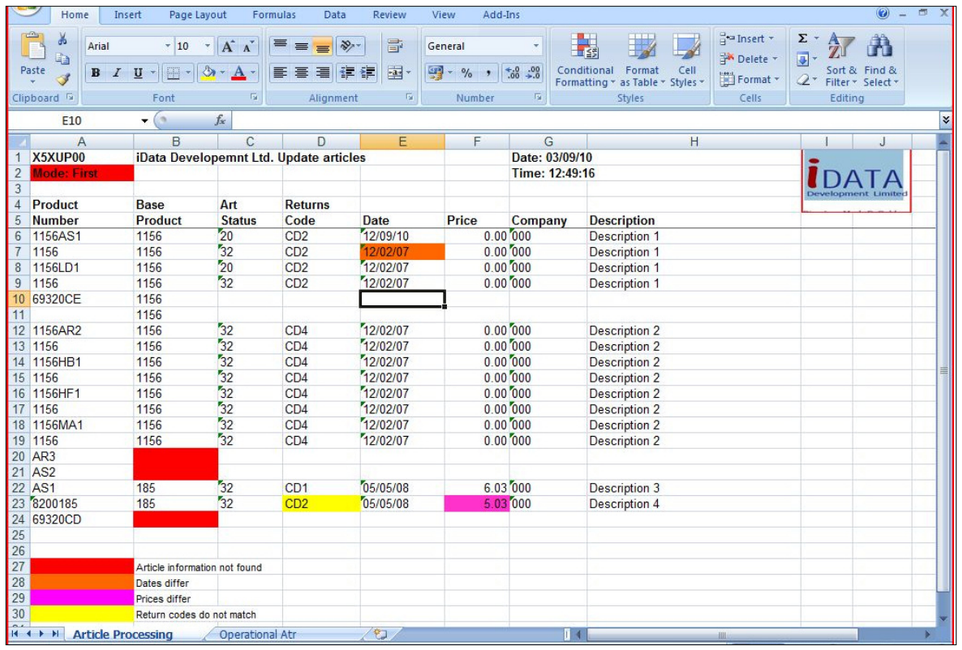
To set the field text to the one required by iEXL for attributes, issue the follow SQL statement.

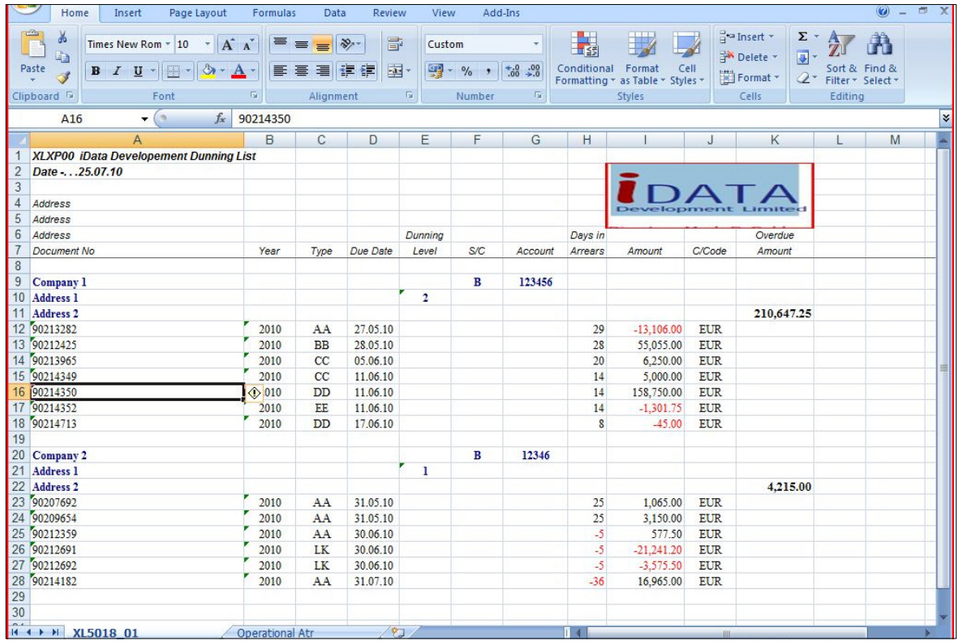
```
Label on column qtemp/f1111tmp (Excelatr TEXT IS 'Atr Excel Fld')
```

You can now setup all the iEXL attribute control files with the attribute codes ST1 and ST2.
The iEXL command can be run against the work file.

Other Examples

Other examples of what you may like to achieve.





As mentioned before in this document you can place multiple images/pictures within a spreadsheet.

Example Summary

If you wanted to e-mail any of the above examples set the iEXL parameter to 'Send E-mail' To 'Y'. Make sure that your distribution list has been set up or an 'E-mail to be sent To' address has been entered and run the command.

In the examples you were asked to create codes, ST1, ST2, ST3 and ST4. This is for example purposes only, once a code has been set up for a spreadsheet it can be used as many times as required. You do NOT need to create a different attribute for each cell or row.

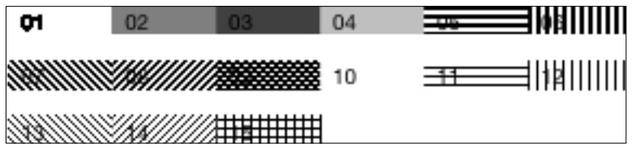
In the examples you were asked to edit the file IDSTEST via a utility. This seems time intensive, however it is for demonstration purposes only. In a real production environment you would have RPG, COBOL, JAVA. SQL, QUERY etc doing this for you.

a Appendix A

Use the number code to select the required colour

b Appendix B

Use the number code to select the required pattern.



c Appendix C

Use the number code to select the required pattern.
Use the number code to select the required alignment.

Action	Code
Center	2
Center selection	6
Fill	4
Justify	5
Left	1
Right	3

d Appendix D

Use the number code to select the required pattern.
Use the number code to select the required image type.

Image Type	Code
EMF	2
WMF	3
PICT	4
JPEG	5
PNG	6
DIB	7

e Appendix E

Underline Codes
Use the number code to select the required underline type.

Underline Type	Code
SS_SUPER	1
SS_SUB	2
U_SINGLE_ACCOUNTING	33
U_DOUBLE_ACCOUNTING	34

f Appendix F

Create a directory within the IFS.
Example to create a directory called IDSEXL_EMailBodies within directory IDSEXL.

```
                          Create Directory (CRTDIR)

Type choices, press Enter.

Directory  . . . . . . . . . . . > '/IDSEXL/IDSEXL_EMailBodies'
_____
Public authority for data  . . .   *INDIR      Name, *INDIR, *RWX, *RW...
Public authority for object  . .   *INDIR      *INDIR, *NONE, *ALL...
             + for more values
Auditing value for objects . . .   *SYSVAL     *SYSVAL, *NONE, *USRPRF...
Scanning option for objects  . .   *PARENT     *PARENT, *YES, *NO, *CHGONLY
Restricted rename and unlink . .   *NO         *NO, *YES

                                                                      Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

To create a header file within this folder.

Create a source file member in any source file. Call it TESTBODY. Run the following command.

```
                        Display Command String

CPYTOIMPF FROMFILE(IDSEXL/QSOURCE TESTBODY)
          TOSTMF('/IDSEXL/IDSEXL_EMailBodies/TestBody.Txt')
          STMFCODPAG(*PCASCII)
          RCDDLM(*CRLF)
          DTAFMT(*FIXED)

Press ENTER to continue.

F3=Exit   F5=Refresh   F12=Cancel   F13=How to use this display   F24=More keys
```

From a command line enter

CD /
WRKLNK
Page down until the 'Object Link' IDSEXL is displayed.
Select option 5 against IDSEXL.
Page down until the 'Object Link' IDSEXL_EmailBodies is displayed.

```
                          Work with Object Links

Directory  . . . . :   /IDSEXL/IDSEXL_EMailBodies

Type options, press Enter.
  2=Edit   3=Copy   4=Remove   5=Display   7=Rename   8=Display attributes
  11=Change current directory ...

Opt   Object link           Type     Attribute    Text
_     TestBody.Txt          STMF

                                                                      Bottom
Parameters or command
===>
F3=Exit   F4=Prompt   F5=Refresh   F9=Retrieve   F12=Cancel   F17=Position to
F22=Display entire field          F23=More options
```

You can now use option 2 to edit the file.

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