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## Overview

AutoOffice is designed to be driven by any program running on a network via a TCP/IP socket interface. It provides a means of using Microsoft Word and Excel even from non-Windows environments.

This is achieved by using the automation capabilities of the MS Office suite. As a result, formatted Word documents and Excel spreadsheets can be produced from Unix environments via a Windows PC.

There is also a minimal PDF file ability – currently this only offers a means of opening an existing PDF file.

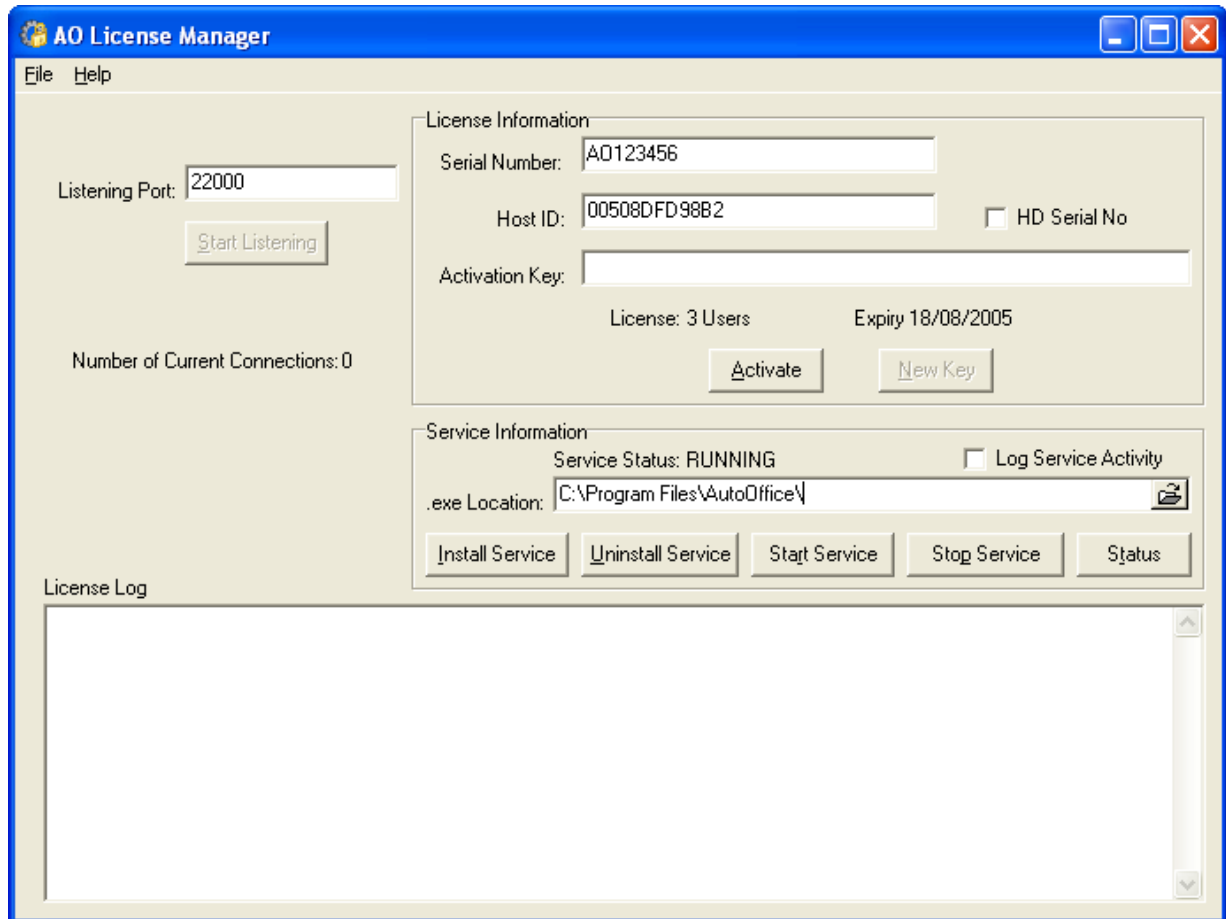
Another useful facility is the ability to execute a Windows program on the PC from a Linux session.

The primary intent is that AutoOffice be used in a Basis PRO5 or BBJ environment, and so a callable PRO5 program is provided so that commands can be passed from the PRO5 environment via AutoOffice to MS Office. However, AutoOffice is not restricted to working on a PRO5 site – any programming language that is capable of reading and writing to TCP/IP sockets can be used.

Licensing is controlled by a licence manager program which runs on any Windows PC on the network. This means that a ‘floating’ licence model is used so that it is possible to have many more copies of AutoOffice than you are licensed for loaded on the network, and a licence is only used when AutoOffice is actually run and connected to the licence manager.

## Installation

### Licence Manager



One PC or server should be chosen on which to load the Licence Manager. The Manager can be installed in any convenient folder. If AutoOffice is also to be run on the PC then the Licence Manager can be installed in the same folder, if required.

The Licence Manager can also be run as a service. The advantage to this is that after the service is installed and started you don't have to remember to run it. If the service is running on a server then it is always available. If it is running on a PC then it automatically starts when the PC is booted.

If the service is being used then the Licence Manager is merely used to control the various options for the service.

When first run, the Licence Manager will be inactive and requires an activation key before it becomes usable.

## Licence Information

<u>Serial Number box</u>	Enter your AutoOffice serial number.
<u>Host Id box</u>	The Host Id is automatically determined and cannot be changed. This is either the network card MAC address or the hard drive serial number. Normally, if a network card is present then the MAC address is used, but you can force the Licence Manager to use the hard drive serial number by ticking the HD Serial No box.
<u>HD Serial No box</u>	Ticking this box forces the Licence Manager to use your hard drive serial number as the Host ID.
<u>Activation Key box</u>	Enter your activation key in the Activation Key box.
<u>Licence</u>	The maximum number of users licensed and whether the licence is permanent. If not permanent then the expiry date will be shown.
<u>Activate button</u>	Click this button when all of the above boxes have been filled in. This will check that the Activation Key is valid.
<u>New Key button</u>	Used if a new Activation Key is to be entered, which is required if you want to change the number of licensed users.

## Service Information

This part of the Licence Manager is only used if it is to be run as a service.

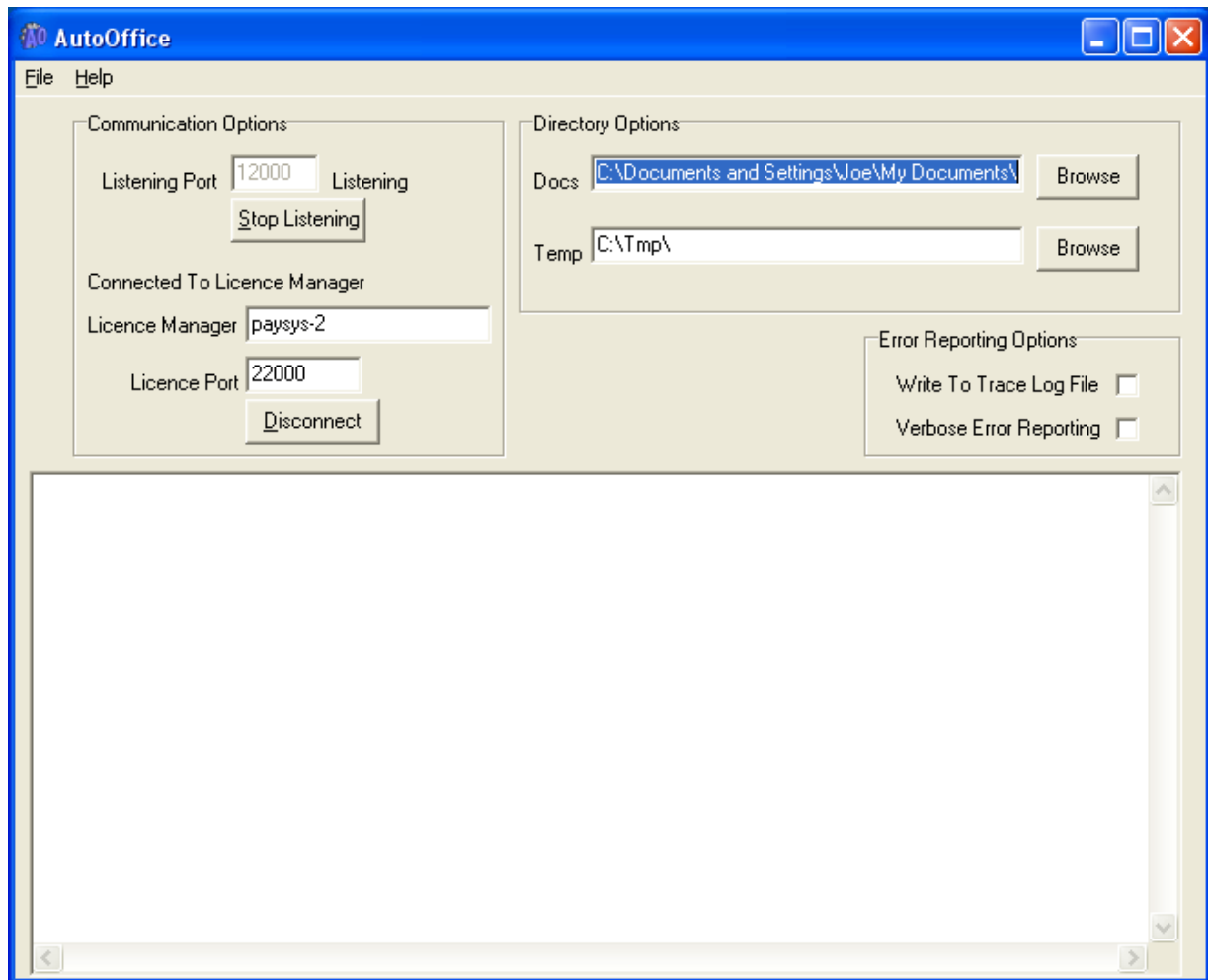
<u>Service Status</u>	Tells you the current status of the service (NOT INSTALLED, STOPPED, RUNNING, etc)
<u>Log Service Activity</u>	Checking this option and then starting the service will write a log file of the activities within the service. This may help if there are difficulties with the service. The .exe Location should not be blank if this option is checked as the log file will be created in that location. The name of the log file is ServiceLog.txt.
<u>.exe Location</u>	By default the service executable is in the same folder as the Licence Manager. If this is the case then just leave this box blank. If it is in a different folder then that folder name needs to be entered here. The browse button on the right side of the box may be used as an alternative to find the folder name.
<u>Install Service</u>	Click this button to install the service. This does not start the service.
<u>Uninstall Service</u>	Click this button to uninstall the service. If the service is running at the time then it will not be uninstalled immediately. It will take place when the service is stopped or the machine rebooted.
<u>Start Service</u>	Click to start the service after it has been installed.
<u>Stop Service</u>	Click to stop the running service.

## Other Information

<u>Listening Port</u>	AutoOffice communicates with the Licence Manager on this port. By default this is 22000. May be changed if required. If this is changed then the Licence Manager must not be actively listening. If the service is running then it will need to be stopped and restarted for the change to take effect.
<u>Start/Stop Listening</u>	If the service is not being used then this button is used to start and stop the Licence Manager listening process.
<u>Number of Current Connections</u>	The number of licences currently in use. This is only relevant if the service is not being used.
<u>Licence Log</u>	Records the connections and disconnections to the Licence Manager by the various AutoOffice clients.

The Serial Number, Port Number, Activation Key, HD Serial Number, Log Service Activity and Service .exe Location settings are stored in the registry under  
HKEY\_LOCAL\_MACHINE\Software\AOlicMgr

## AutoOffice Client



## Windows PC

The AutoOffice executable can be placed in any convenient folder on the PC. This should have permissions which allow any user to read & write to it. A shortcut may then be placed on the desktop to make it easy to start the program.

When AutoOffice is first run it checks for the presence of a sub-folder named Configs. If it doesn't exist then it will be created. This sub-folder will contain the configuration files for each user that uses AutoOffice – these files are named <logon>.config, where <logon> is the Windows logon name of the user.

When AutoOffice is run for the first time the Licence Manager communication options must be set in order to control the number of licences used.

## Communication Options

<u>Listening Port</u>	This is the port number used for communication between AutoOffice and the users program that directs the creation of Word documents or Excel spreadsheets. The default is 12000 and normally should not be changed. A change may be required if AutoOffice is run on a terminal server or if another program is using the same port number. If a change is required then AutoOffice must first be instructed to stop listening by clicking the Stop Listening button.
<u>Listening/Not Listening</u>	This is displayed next to the Listening Port box and indicates whether AutoOffice is listening or not.
<u>Stop/Start Listening</u>	This button either stops or starts AutoOffice listening, depending on whether it is listening at the time.
<u>Connected/Not Connected To Licence Manager</u>	This is displayed just above the Licence Manager box and indicates the status of the connection to the Manager. You cannot instruct AutoOffice to start listening for user program communication until a connection to the Licence Manager is established.
<u>Licence Manager</u>	This box is used to enter the machine name or IP address where the Licence Manager is running.
<u>Licence Port</u>	This is the port number for communication between AutoOffice and the Licence Manager. Note that this <u>must</u> be different to the Listening Port discussed earlier. It <u>must</u> be the same port number as is entered in the Licence Manager Listening Port box. The default is 22000 and normally should not be changed unless that port is in use by another program.
<u>Connect/Disconnect</u>	This button is used to establish or break a connection to the Licence Manager. When establishing a connection the values in the Licence Manager and Licence Port boxes are used – the connection will fail if the Manager is not running and listening.

If the Licence Manager needs to be shut down for any reason then all AutoOffice connections should be terminated first. This is done by clicking on the Disconnect button, which will also cause AutoOffice to stop listening on the user programs port. Clicking the Connect button re-establishes the Licence Manager connection and restarts listening on the user programs port.

When AutoOffice is run for the first time the program tries to determine the document and temporary folders that it will use.



## **Folder Options**

<u>Docs</u>	The default for the document folder is the combination of the environment variables HOMEDRIVE and HOMEPATH. Usually this will be the C:\Documents and Settings\<loginname>\My Documents folder. If the environment variables are not present then the default folder will be C:\. The default can be changed by editing the Docs box or clicking on the Browse button to navigate to the required folder.
<u>Temp</u>	The default for the temporary folder is the one of environment variables TEMP or TMP. Usually this will be the C:\DOCUME~1\<loginname>\LOCALS~1\Temp folder. If the environment variables are not present then the default folder will be C:\. Experience has shown that these Windows temp folders sometimes disappear, so it would be best to create a fixed folder such as C:\Temp and enter that name in this box. The default can be changed by editing the Docs box or clicking on the Browse button to navigate to the required folder.

## **Error Reporting Options**

<u>Write To Trace Log File</u>	This option writes the trace log of all commands to a file. The trace log is a file named AOLog.txt and will be created in the Docs folder. This file will be created at the time the option is ticked (any existing log will be over written) and all previous commands in the current session will be written to the file. Subsequent commands will be added as they are processed.
<u>Verbose Error Reporting</u>	Tells AutoOffice to report all errors back to the user program. Normally only fatal errors are returned.

If any of the defaults are changed, these are automatically saved when exiting AutoOffice. This is in a file named <login>.config which resides in the Configs sub-folder. It is a plain text file. If there are any problems with the defaults then simply delete the file and it will be recreated with the standard defaults when AutoOffice is next run.

## **Thin Clients (Terminal Server)**

The same principles as described above for PCs apply to thin clients; however it will probably be necessary to change the listening port for each operator. If this is done then the port must also be set for the callable PRO5 program as described below.

## CALLable PRO5 program

This needs to be installed in any folder/directory that is recognised by the PRO5 environment.

The command to use this program is one of the following:

1. CALL "AO\_COMM::TMPL",AO\$  
This format will dimension the variable AO\$ to the template attributes below.
2. CALL "AO\_COMM",AO\$  
This format is used when passing commands to AutoOffice.

The variable AO\$ is a string template with the following field attributes:

LO:N(1\*=255), (Leave socket channel open)  
 CT:C(1\*=255), (Command Type)  
 CMD:C(100\*=255), (Command and optional Parameters)  
 RESP:C(2\*=255), (Response)  
 RTN:C(100\*=255) (Return)

The CMD field is discussed in detail under the various commands used to control Word and Excel. The other fields are described in the table below:

Field	Value	Usage
LO	0   1	0 : Close socket before exit. 1 : Leave socket open when exiting. Set by the calling program. If set to 0 prior to the call the socket will always be opened on a new channel and closed on exit. If set to 1 prior to the call: If the socket is not open at the time of the call then it will be opened and left open on exit. If the socket is open at the time of the call then that channel will be used and left open on exit.
CT	w   e	w : This command is for Word e : This command is for Excel
RESP	OK   <error>	Command status after processing. OK = Successful. Anything else indicates that an error has occurred and will contain a description of the error.
RTN		Currently only used to return which dialog box buttons have been clicked.

The PRO5 config.bbx must contain an alias for the TCP socket that will be opened to communicate with AutoOffice. By default this alias is N0, but can be changed in any of the following ways:

1. Setting a global variable AO\_SOCKET to the required alias.
2. Setting an environment variable AO\_SOCKET to the required alias.

The host name or IP address that is used when opening the socket is determined in the following way in order of priority:

1. Setting a global variable AO\_HOST to the required name.
2. Setting an environment variable AO\_HOST to the required name.
3. On Unix/Linux systems the “who” system command may be used to get the name. It may be necessary to enter the name returned by the “who” command in the /etc/hosts file along with the corresponding IP address.
4. On a Windows PC the last 4 bytes of INFO(3,1) is used if not zero. (See SETOPTS byte 4 \$20\$ to make this available).

The port number used in opening the socket is 12000 by default. This can be changed in any of the following ways:

1. Setting a global variable AO\_PORT to the required port number.
2. Setting an environment variable AO\_PORT to the required port number.

## **FacetWin Notes**

FacetWin has the ability to set the environment so that the host name returned by the ‘who’ command may not be valid as a host name. In this case it is necessary to set the AO\_HOST environment variable to the contents of another environment variable – FACETWINIPADDR which will have the correct IP address.

## **Firewall Notes**

The Windows XP firewall and other third party firewalls will block the traffic between AutoOffice and the Licence Manager and between AutoOffice and the CALLable PRO5 program. So make sure that AutoOffice is listed as an exception in the firewall settings.

## Word Commands

While Word has the capability of working on more than one document at a time, AutoOffice only works on the currently active document. If Word is already running at the time AutoOffice starts then there is no problem as AutoOffice will start its own instance of a document and will work on that one alone.

The CT field must always be w for Word commands. Case insensitive.

The CMD field is made up of two parts separated by a space. The first part is a command and is always case insensitive. The second part is made up of optional parameters and is generally case insensitive. The exceptions are when text, mergeheader, mergefields, opendoc, replace, saveas, or tablerow commands are used. In these instances the parameter case is as sent by the calling program.

For each command there may be associated parameters depending on the command. For example the newdoc command creates a new document which does not require any parameters, while the opendoc requires a parameter to specify the name of the existing document to be opened.

Some commands may have many parameters, such as the font command. These parameters are supplied as a delimited list in the format <parameter>,<parameter>,... Each parameter is in the format <parameter\_name> or <parameter\_name>=<parameter\_value>. If there is an embedded current delimiter within a parameter value then the value must be enclosed in quotes. Note that if the last character in a parameter value is a delimiter then Word can become confused even if the parameter value is enclosed in quotes – this can be resolved by either stripping the delimiter from the value or using a different delimiter.

<u>Command</u>	Parameter(s)	Comments
activate	<doc name>	Activates the named Word document which must already be open
align   alignment	left right centre   center justify	Align paragraph to left margin Align paragraph to right margin Centre the paragraph Justify paragraph on left & right margins
bookadd	<bookmark name>	Add a bookmark at the cursor
bookgoto	<bookmark name>	Place the cursor at the bookmar location
break	page line column	Page break Line break Column break

bullet	<list>	Each item in the list must be separated by a <CR.>
close		Closes the Word document without saving it. If no other documents are open in Word then Word itself is closed.
copydoc		Copies the text of the entire document to the clipboard. Does not include headers and footers
delimiter	<character>	Changes the default delimiter to the specified character. The default delimiter is a comma. Setting the Word delimiter does not change the Excel delimiter and vice versa. The delimiter can be set to the TAB character either by using CHR(9) or 't' which will be interpreted as a TAB
dialog	fileopen[=<folder>]	Prompts the operator with a File Open dialog to select a document. The selected document will be opened. The optional =<folder> parameter means that you can specify the Look In folder. If =* is specified then the document folder is used. If there is no =<folder> then the default is the Windows My Documents folder, unless there has been a previous fileopen with a folder parameter. If the operator clicks the Close or Cancel button then this will be returned in the AO.RTN\$ variable.
	print	Prompts the operator with a File Print dialog so the operator can choose which printer to print to. The print takes place when the operator clicks the OK button. If the operator clicks the Close or Cancel button then this is returned in the AO.RTN\$ variable.
font	bold colour=<colour> color=<colour>	Toggles bold attribute on/off Changes the font to the specified colour. The values for <colour> are: black, blue, darkblue, yellow, darkyellow, red, darkred, turquoise, green, brightgreen, pink, white, teal, violet, grey25   gray25, grey50   gray50
	italic   italics name=<name> size=<size>	Toggles italic attribute on/off Name of the required font Size of font

---

underline=<number>		<ul style="list-style-type: none"><li>0 No underline, switch off underlining</li><li>1 Single</li><li>2 Double</li><li>3 Thick</li><li>4 Wavy</li><li>5 Wavy Heavy</li><li>6 Wavy Double</li><li>7 Dash</li><li>8 Dash Heavy</li><li>9 Dotted</li><li>10 Dotted Heavy</li><li>11 Long Dash</li><li>12 Long Dash Heavy</li><li>13 Dot Dash</li><li>14 Dot Dash Heavy</li><li>15 Dot Dot Dash</li><li>16 Dot Dot Dash Heavy</li><li>17 Words</li></ul>
goto	enddoc endtable	Positions the cursor at the end of the document Positions the cursor just after the end of the current table
hide		Hides the Word screen.
insertdoc	<document name>	Inserts the contents of the document at the cursor. If the name starts with an * then the document name will be prefixed with the name of the document folder.
leaveopen		Disconnects from Word but leaves the document open.
merge		Does the mail merge. This command must be preceded by an opendoc, mergeheader and mergefields commands. See section on how to do a mail merge.
mergefields	<merge fields>	This is a delimited list of fields that correspond to the column names given by the mergeheader command. If any of the fields contains an embedded character that corresponds to the current delimiter then the field must be enclosed in quotes. If there are more mergefields than there are mergeheader column names then the excess fields are discarded.

---

mergeheader	<column names>	This is a delimited list of column names. These must correspond to the names of merge fields in a Word document opened by an opendoc command.
newdoc	<document name>	Connects to Word and opens the named document.
newfolder	<folder name>	Creates the named folder if it doesn't already exist. All folders along the path are created, if necessary. If the folder name starts with an * then the path is prefixed with the document folder name.
opendoc	<document name>	Connects to Word and opens the named document. If the name starts with an * then the document name will be prefixed with the name of the document folder.
pagesetup	bottommargin=<number> landscape leftmargin=<number> papersize=<paper size>  portrait rightmargin=<number> topmargin=<number>	Sets the bottom margin in points Sets the page orientation to landscape Sets the left margin in points Valid paper sizes are: A4 A5 Letter DL Sets the page orientation to portrait Sets the right margin in points Sets the top margin in points
paragraph		Start a new paragraph
pastedoc		Pastes from the clipboard. Includes all formatting
print		Prints the document to the default printer
replace	<find>=<replace>	A delimited list of find/replace parameters. If there is an embedded current delimiter in a <find> or <replace> string then the string must be enclosed in quotes.
save		Saves the document

saveas	<document name>	Saves the document under the given name. If the name starts with an * then the document name will be prefixed with the name of the document folder
show		Shows the Word screen
tablecreate	cols=<cols> rows=<rows>	Number of columns in the table Number of rows in the table. Only one row is actually required as extra rows are automatically added to the table as required when the tablerow command is processed.
tableformat	bold col=<column>  colour=<colour> color=<colour>  font=<font> fontsize=<size> halign=<align>  height=<height> indent=<indent>  italicitalics insidestyle=<style>  insidewidth=<width>	Bold the text in the cell/row/column/table The column number to apply the formatting to. If a column is specified without an accompanying row parameter then the formatting applies to the entire column. If there is a row parameter then the two parameters provide a reference to a cell. If neither the column nor the row is specified then the formatting applies to the whole table. Changes the font to the specified colour. The values for <colour> are: black, blue, darkblue, yellow, darkyellow, red, darkred, turquoise, green, brightgreen, pink, white, teal, violet, grey25   gray25, grey50   gray50 Name of the required font The size of the font Horizontal alignment of text in each cell. Valid parameters are left, right, centre, center The height of each cell in points Indents the whole table by the specified number of points. May be a negative to move the table to the left. Only works where row=0 and col=0 Italicise the text in the cell/row/column/table The style of the border (grid) lines within the row/column reference. Valid values are none, single, double, triple. The size of the border (grid) lines within the row/column reference. This only applies if the insidestyle is single. The valid widths are 25,50,75,100,150,225,300,450,600.



mrgcol=<column>	Used in conjunction with row=, col= and mrgrow=. This will merge cells from row=, col= to mrgrow=, mrgcol= into one cell. If used then these parameters should be on one tableformat command of their own. Since this will change the row and column numbering of the table this should be done only after all other formatting is completed.
mrgrow=<row>	Used in conjunction with row=, col= and mrgcol=. This will merge cells from row=, col= to mrgrow=, mrgcol= into one cell. If used then these parameters should be on one tableformat command of their own. Since this will change the row and column numbering of the table this should be done only after all other formatting is completed.
nobreak	If the row has multiple lines then this prevents the row from being split on a page break
outsidestyle=<style>	The style of the border (grid) lines on the outer edge of the row/column reference. Valid values are none, single, double, triple.
outsidewidth=<width>	The size of the border (grid) lines on the outer edge of the row/column reference. This only applies if the outsidestyle is single. The valid widths are 25,50,75,100,150,225,300,450,600.
row=<row>	The row number to apply the formatting to. If a row is specified without an accompanying column parameter then the formatting applies to the whole row. If there is a column parameter then the two parameters provide a reference to a cell. If neither the column nor the row is specified then the formatting applies to the whole table.
shading=<colour>	Changes the background to the specified colour. The values for <colour> are: black, blue, darkblue, yellow, darkyellow, red, darkred, turquoise, green, brightgreen, pink, white, teal, violet, grey25   gray25, grey50   gray50

	underline=<number>	<p>0 No underline, switch off underlining</p> <p>1 Single</p> <p>2 Double</p> <p>3 Thick</p> <p>4 Wavy</p> <p>5 Wavy Heavy</p> <p>6 Wavy Double</p> <p>7 Dash</p> <p>8 Dash Heavy</p> <p>9 Dotted</p> <p>10 Dotted Heavy</p> <p>11 Long Dash</p> <p>12 Long Dash Heavy</p> <p>13 Dot Dash</p> <p>14 Dot Dash Heavy</p> <p>15 Dot Dot Dash</p> <p>16 Dot Dot Dash Heavy</p> <p>17 Words</p>
	valign=<align>	Vertical alignment of text in each cell. Valid parameters are top, bottom, centre, center
	width=<width>	The width of each cell in points. Note that Word may not like cells of varying widths in the same column.
tablerow		A delimited list of column values to be placed in the table at the next available row. If there is an embedded current delimiter in a column value then the string must be enclosed in quotes.
text	<text>	Writes the text in the parameter field to the document. No linefeeds are done between each text command unless embedded in the text.

## How to do a mail merge

This involves a series of commands in the following sequence:

1. opendoc <merge document>
2. mergeheader <column names>
3. mergefields <merge fields> (There may be many of these commands)
4. merge
5. show

As a simple example to illustrate this, suppose there is a document named Letter.doc in the document folder and that the letter has the following contents:

```
<<Name>>  
<<Address1>>  
<<Address2>>  
<<Address3>>
```

Dear <<Salutation>>

Please find enclosed our catalogue of special offers for this month.

Yours sincerely,

Joe Bloggs  
Managing Director  
XYZ Offers Pty Ltd

The commands to process this would be:

```
opendoc *Letter.doc  
mergeheader Name,Address1,Address2,Address3,Salutation  
mergefields John Smith,25 Arrow Way,,Perth WA 6000,John  
mergefields "Peter, Nancy & Josh Wheeler",Unit 25/The Mews,161 Lord St,Leederville WA  
6006,Nancy  
...  
merge  
show
```

This sequence uses the merge master document in combination with the succeeding merge commands to create a new document with the resulting merge letters. The merge master is left unchanged and is closed at the end of the merge, leaving the merged letters as the active document. Additional commands that could be added to print and exit from the letters without saving and without operator intervention are:

```
print  
close
```

## Excel Commands

While Excel has the capability of working on more than one worksheet at a time, AutoOffice only works on the currently active worksheet. If Excel is already running at the time AutoOffice starts then there is no problem as AutoOffice will start its own instance of a workbook with a single worksheet and will work on that one alone.

The CT field must always be e for Excel commands. Case insensitive.

The CMD field is made up of two parts separated by a space. The first part is a command and is always case insensitive. The second part is made up of optional parameters and is generally case insensitive. The exceptions are when writecell, writerow, openbook or saveas commands are used. In these instances the parameter case is as sent by the calling program.

For each command there may be associated parameters depending on the command. For example the newbook command which does not require any parameters creates a new workbook with a single blank worksheet, while the openbook requires a parameter to specify the name of the existing workbook to be opened.

Some commands may have many parameters, such as the format command. These parameters are supplied as a delimited list in the format <parameter>,<parameter>,... Each parameter is in the format <parameter\_name> or <parameter\_name>=<parameter\_value>. If there is an embedded current delimiter within a parameter value then the value must be enclosed in quotes

<u>Command</u>	<u>Parameter(s)</u>	<u>Comments</u>
delimiter	<character>	Changes the default delimiter to the specified character. The default delimiter is a comma. Setting the Excel delimiter does not change the Word delimiter and vice versa. The delimiter can be set to the TAB character either by using CHR(9) or '\t' which will be interpreted as a TAB
dialog	fileopen[=<folder>]	Prompts the operator with a File Open dialog to select a spreadsheet. The selected spreadsheet will be opened. The optional =<folder> parameter means that you can specify the Look In folder. If =* is specified then the document folder is used. If there is no =<folder> then the default is the Windows My

		Documents folder, unless there has been a previous fileopen with a folder parameter. If the operator clicks the Close or Cancel button then this will be returned in the AO.RTN\$ variable. Prompts the operator with a File Print dialog so the operator can choose which printer to print to. The print takes place when the operator clicks the OK button. If the operator clicks the Close or Cancel button then this is returned in the AO.RTN\$ variable.
	print	
format	autofit	Automatically resizes the column width to match the largest required size in the cell/range
	bold	Bolds the text in the cell/range
	borderallstyle=<style>	The style of all borders including the inside vertical and horizontal lines. The valid styles are: None Continuous Double Dot Dash DashDot Dashdotdot Slantdashdot
	bordertopstyle=<style>	The style of the top border line. The valid styles are the same as for borderstyleall above.
	borderrightstyle=<style>	The style of the right border line. The valid styles are the same as for borderstyleall above
	borderbottomstyle=<style>	The style of the top border line. The valid styles are the same as for borderstyleall above
	borderleftstyle=<style>	The style of the left border line. The valid styles are the same as for borderstyleall above
	borderinsidehorizontalstyle=<style>	The style of the inside horizontal lines. The valid styles are the same as for borderstyleall above

borderinsideverticalstyle=<style>	The style of the inside vertical lines. The valid styles are the same as for borderstyleall above
borderallweight=<weight>	The weight given to all border lines including the inside horizontal and vertical lines. If this is used this will over ride the styles above and will result in single lines of the specified weight. The valid weights are: Hairline Thin Medium Thick
bordertopweight=<weight>	The weight given to the top border line. The valid weights are the same as for borderallweight=
borderrightweight=<weight>	The weight given to the right border line. The valid weights are the same as for borderallweight=
borderbottomweight=<weight>	The weight given to the bottom border line. The valid weights are the same as for borderallweight=
borderleftweight=<weight>	The weight given to the left border line. The valid weights are the same as for borderallweight=
borderinsidehorizontalweight=<weight>	The weight given to the inside horizontal lines. The valid weights are the same as for borderallweight=
borderinsideverticalweight=<weight>	The weight given to the inside vertical lines. The valid weights are the same as for borderallweight=
borderallcolour=<colour>	The colour applied to all borders including the inside horizontal and vertical lines. See 'Excel Colours' below for the valid colours.
bordertopcolour=<colour>	The colour applied to the top border line. See 'Excel Colours' below for the valid colours.
borderrightcolour=<colour>	The colour applied to the right border line. See 'Excel Colours' below for the valid colours.

borderbottomcolour=<colour>	The colour applied to the bottom border line. See 'Excel Colours' below for the valid colours.
borderleftcolour=<colour>	The colour applied to the left border line. See 'Excel Colours' below for the valid colours.
borderinsidehorizontalcolour=<colour>	The colour applied to the inside horizontal lines. See 'Excel Colours' below for the valid colours.
borderinsideverticalcolour=<colour>	The colour applied to the inside vertical lines. See 'Excel Colours' below for the valid colours.
col=<column ref>	Specify the column number. Used in conjunction with the row= parameter to refer to a single cell. If the column is specified without a row then the reference is to the entire column.
colour=<colour>	Specifies the colour of the text in the cell/range. See 'Excel Colours' below for the valid colours.
color=<colour>	
font=<font name>	The name of the font to apply to the cell/range
halign=<horiz. align>	Horizontal alignment of text in the cell/range centre:center : Centre contents of cell left : Align contents on left of cell right: Align contents on right of cell justify: Align contents across cell general: General alignment distributed: Distributed alignment fill: Fill
height=<height>	The cell height in points
italicslitalic	Italicises the text in the cell/range
numberformat=<format>	Any of the number formats allowed by Excel. Strangely, text format requires an @.

range=<range>	The range is specified in either <ref>:<ref> format or <ref> format, where <ref> is a column & row reference in A1 format where the letter specifies the column and the number the row. So A1:B5 is the range of cells from col 1, row 1 to col 2, row 5. If only a single <ref> is specified then the reference is to the single cell.
row=<row number>	Specify the row number. Used in conjunction with the col= parameter to refer to a single cell. If the row is specified without a column then the reference is to the entire row.
shading=<colour>	The background shading colour of the cell/range. See 'Excel Colours' below for the valid colours.
size=<size>	Font size
underline=<number>	0 No Underline 1 Single 2 Double 3 Single Accounting 4 Double Accounting
valign=<vert align>	Vertical alignment of text in the cell/range centre:center : Centre contents of cell top : Align contents on top of cell bottom: Align contents on bottom of cell justify: Align contents across cell distributed: Distributed alignment
width=<width>	The cell width in points
getrow	Returns the next row that will be written to
hide	Hides the Excel screen
leaveopen	Disconnects from Excel but leaves the workbook open.
newbook	Opens a new workbook which contains a single blank worksheet



openbook	<book name>	Connects to Excel and opens the named workbook. If the name starts with an * then the workbook name will be prefixed with the name of the document folder.
pagesetup	fitheight=<number> fitwidth=<number> gridlines landscape papersize=<size>  portrait	Fit the worksheet height into this number of pages Fit the worksheet width into this number of pages Print with grid lines Sets the page orientation to landscape Valid paper sizes are: A4 A5 Letter Sets the page orientation to portrait
print		Prints the worksheet on the default printer
readcell	col=<column number>  range=<range>   row=<row number>  The value of the target cell is returned in the AO.RTN\$ variable.	Specify the column number. Used in conjunction with the row= parameter. This is specified in <ref>:<ref> format or <ref> format, where <ref> is a column & row reference in A1 format where the letter specifies the column and the number the row. So A1:B5 is the range of cells from col 1, row 1 to col 2, row 5. If <ref> format is used then the reference is to a single cell. Specify the row number. Used in conjunction with the col= parameter.
save		Saves the current workbook
saveas	<book name>	Saves the workbook under the given name. If the name starts with

		an * then the workbook name will be prefixed with the name of the document folder
screenupdating	on off	Turns on screen updating Turns off screen updating
setrow	<row number>	Sets the current row to this number. A new worksheet or opened worksheet will always start at row 1
sheetactivate	<sheet name>	Make the named sheet the active sheet
sheetadd	after=<sheet name> before=<sheet name> name=<sheet name>	Adds a new sheet after the one named by <sheet name>. Adds a new sheet before the one named by <sheet name> Specify the name of the new sheet
sheetdelete	<sheet name>	Delete the named sheet from the workbook. There must always be at least one sheet in a workbook, so you cannot delete the named sheet if it is the only one in the workbook.
sheetrename	<sheet name>	Renames the current active sheet to the name specified.
show		Shows the Excel screen
writecell	col=<column number>  range=<range>	Specify the column number. Used in conjunction with the row= parameter. This is specified in <ref>:<ref> format or <ref> format, where <ref> is a column & row reference in A1 format where the letter specifies the column and the number the row. So A1:B5 is the range of cells from col 1, row 1 to col 2, row 5. If <ref> format is used then the reference is to a single cell.

	row=<row number>	Specify the row number. Used in conjunction with the col= parameter.
	value=	The value to be placed in the cell/range.
writerow	<cell values>	The cell values are a delimited list of values. Each item in the list will be placed in successive cells on the current row. If any value has an embedded current delimiter then the value must be enclosed in quotes. After the last cell value has been placed then next row becomes the current row.

## Excel Colours






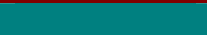
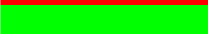

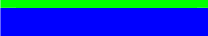




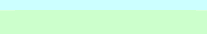

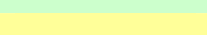























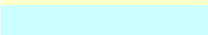















The standard 56 Excel colours are used by the 'colour=' 'shading=' and 'border<edge>colour=' parameters in the format command. The table below shows the colour numbers and the names for the colours. Where there is no name for a required colour then just use the number. Some of the colours are duplicated, in which case either colour number may be used.

Examples:

'format colour=black' is the same as 'format colour=1'

'format shading=orange' is the same as 'format shading=46'

'format range=a1:c10,borderallstyle=double,borderallcolour=53' will set the border style of all lines in the range to a double line and the colour of the lines to the brownish colour found next to colour 53 in the table below..

Colour No	Colour	Name	Colour No	Colour	Name
1		black	29		
2		white	30		
3		red	31		
4		green	32		
5		blue	33		
6		yellow	34		
7		magenta	35		
8		cyan	36		
9		darkred	37		
10		darkgreen	38		
11		darkblue	39		
12		darkyellow	40		
13		violet	41		
14		teal	42		
15		grey25	43		
16		grey50	44		
17			45		
18			46		orange
19			47		
20			48		
21			49		
22			50		
23			51		
24			52		
25			53		
26			54		
27			55		
28			56		

## PDF Commands

The CT field must always be p for PDF commands. Case insensitive.

The CMD field is made up of two parts separated by a space. The first part is a command and is always case insensitive. The second part is made up of optional parameters and is generally case insensitive. The exception is when dialog commands are used. In these instances the parameter case is as sent by the calling program.

<u>Command</u>	<u>Parameter(s)</u>	<u>Comments</u>
dialog	fileopen[=<folder>]	Prompts the operator with a File Open dialog to select a PDF document. The selected document will be opened. The optional =<folder> parameter means that you can specify the Look In folder. If =* is specified then the document folder is used. If there is no =<folder> then the default is the last folder used to open a PDF document. If the operator clicks the Close or Cancel button then this will be returned in the AO.RTN\$ variable.
opendoc	<document name>	Opens the named document in the default PDF reader. If the name starts with an * then the document name will be prefixed with the name of the document folder.

## Execute A Windows Program

The CT field must always be x for execute commands. Case insensitive.

The CMD field is made up of two parts separated by a space. The first part is a program name. The second part is made up of command line parameters which are passed unchanged to the program.

<u>Command</u>	<u>Parameter(s)</u>	<u>Comments</u>
<program name>	<command line parameters>	The program name is the name of the Windows executable. This may include the full path name – note that if the name contains spaces then it should be enclosed in quotes. The command line parameters are passed unchanged to the program.

Sample command (note that the executable path contains spaces, so is enclosed in quotes):

```
LET AO.CT$="x"
```

```
LET AO.CMD$="$22$+"C:\Program Files\Tester\Tester.exe"+"$22$+" -cxyz -x3"
```

```
CALL "AO_COMM",AO$
```

## Troubleshooting

### **Commands don't work as expected**

All fatal errors, such as a missing file in the opendoc or openbook commands are reported back to the calling program.

By default, non-fatal errors are not reported. For example if an unrecognised colour is used in a parameter, then that parameter is simply ignored. So first of all make sure that there are no errors in the syntax of the commands.

If this doesn't show the reasons, then you can turn on verbose error checking by ticking the Verbose Error Reporting option. This will return most non-fatal errors to the calling program.

Another option is to switch on the option to write the trace log of all commands to a file. This is done by ticking the Write To Trace Log File option. The trace log is a file named AOLog.txt and will be created in the Docs folder. This file will be created at the time the option is ticked (any existing log will be over written) and all previous commands in the current session will be written to the file. Subsequent commands will be added as they are processed. If the option is not ticked during a session then any log file present will be unchanged from the time it was created in a previous session. Since the trace log is displayed in the trace log box on the AutoOffice screen, this option is only useful if you need to send a copy of the log for someone else to look at.

### **Mail Merge prompts for delimiters**

This occurs because Word doesn't understand the delimiters in the data you are sending.

Typically there are commas embedded in one of the fields. This can be overcome by enclosing the field in quotes or by using a different character as the delimiter.

Less common, even if the fields are enclosed in quotes but one of the fields ends with a comma, Word will get confused. This is overcome by deleting the ending comma or by using a different character as a delimiter.

## **Error Codes**

### **Connection Errors**

<b><u>Error</u></b>	<b><u>Command/Comment</u></b>
C001: AO\$ is not a string template	AO\$ has not been DIMed as a template
C002: Invalid command type	The command type is not recognised
C003: Unable to open the socket	Caused by one of the following: 1. AutoOffice is not running 2. Wrong host name/IP address specified 3. Wrong port number specified
C004: Unable to find host name	Could not obtain the host name from an environment variable, global variable, 'who' command or INFO(3,1)
C005: Unable to write to socket	Possibly AutoOffice has been closed or has stopped listening
C006: No response from server	A command has been sent to AutoOffice but no reply to indicate either success or failure has returned. This is a timeout error.
C007: Lost connection with server	Same as for C006 except that this is not a timeout error.

### **Fatal Errors in Word**

<b><u>Error</u></b>	<b><u>Command/Comment</u></b>
W001: Unable to create new blank document	newdoc
W002: Unable to open document <doc name>	opendoc
W003: Unable to print the current document	print
W004: Unable to save document <doc name>	save
W005: Unable to save document <doc name>	saveas
W006: Unable to add new row to data source	mergefields Possibly the data source has been closed
W007: Unable to create temporary datasource file <filename>	mergeheader
W008: Unable to open temporary datasource file <filename>	mergeheader
W009: Unable to complete the merge	merge
W010: Unable to insert text from document <doc name>	insertdoc
W011: No mailmerge fields in document	mergeheader
W012: Mailmerge data field names do not match document field names	mergeheader



**Non-Fatal Errors in Word**

<b><u>Error</u></b>	<b><u>Command/Comment</u></b>
W100: Unable to write text to document	text. Possibly no document is open
W101: Unable to create new paragraph	paragraph. Possibly no document is open
W102: Unable to create bullet list	bullet. Possibly no document is open
W103: Invalid break parameter	break. Parameter not one of the valid selections
W104: Unable to insert break	break. Possibly no document is open
W105: Alignment parameter error	align. Parameter not one of the valid selections
W106: Unable to align paragraph	align. Possibly no document is open
W107: Unable to hide Word	hide. Possibly Word is not running
W108: Unable to make Word visible	show. Possibly Word is not running
W109: Unable to close Word document	close
W110: Unable to disconnect from Word	close
W111: Unable to leave Word open	leaveopen
W112: Unable to set font name <name>	font name=
W113: Unable to toggle the bold attribute	font bold
W114: Invalid font size <size>	font size= Size is not an integer
W115: Invalid underline type <type>	font underline= Underline parameter not an integer
W116: Invalid underline type <type>	font underline= Underline parameter not on of the valid integers
W117: Invalid underline type <type>	font underline= Underline parameter could not be set. Possibly Word doesn't support this type.
W118: Unable to toggle the italic attribute	font italics
W119: Unknown text colour <colour>	font colour= Colour parameter is not one of the valid colours
W120: Could not add merge field number <n> on row <n>	mergefields Probably too many columns on this row
W121: Find "<find>" and Replace with "<replace>" failed	replace
W122: Invalid left margin <margin>	pagesetup leftmargin= Parameter is not an integer
W123: Invalid left margin <margin>	pagesetup leftmargin= Parameter is less than zero
W124: Invalid right margin <margin>	pagesetup rightmargin= Parameter is not an integer
W125: Invalid right margin <margin>	pagesetup rightmargin= Parameter is less than zero
W126: Invalid top margin <margin>	pagesetup topmargin= Parameter is not an integer
W127: Invalid top margin <margin>	pagesetup topmargin= Parameter is less than zero
W128: Invalid bottom margin <margin>	pagesetup bottommargin= Parameter is not an integer
W129: Invalid bottom margin <margin>	pagesetup bottommargin= Parameter is less than zero
W130: Unknown paper size <size>	pagesetup papersize= Parameter is not one of the valid paper sizes

W131: Invalid number of columns <cols>	tablecreate Number of columns is not an integer
W132: Invalid number of columns <cols>	tablecreate Number of columns is less than one
W133: Invalid number of rows <rows>	tablecreate Number of rows is not an integer
W134: Invalid number of rows <rows>	tablecreate Number of rows is less than one
W135: Failed to create table	tablecreate
W136: Invalid column number <number>	tableformat col= Column number not an integer
W137: Invalid column number <number>	tableformat col= Column number less than one
W138: Invalid row number <number>	tableformat col= Row number not an integer
W139: Invalid row number <number>	tableformat col= Row number less than one
W140: Invalid height <height>	tableformat height= Height not an integer
W141: Invalid height <height>	tableformat height= Height less than one
W142: Invalid width <width>	tableformat width= Width not an integer
W143: Invalid width <width>	tableformat width= Width less than one
W144: Invalid fontsize <size>	tableformat fontsize= Fontsize not an integer
W145: Invalid fontsize <size>	tableformat fontsize= Fontsize less than one
W146: Invalid underline type <type>	tableformat underline= Underline type not an integer
W147: Invalid underline type <type>	tableformat underline= Underline type not one of the valid types
W148: Invalid horizontal alignment <align>	tableformat halign= Horizontal alignment not one of the valid types
W149: Invalid shading colour <colour>	tableformat shading= Background shading colour not one of the valid types
W150: Invalid font colour <colour>	tableformat colour= Font colour not one of the valid types
W151: Invalid inside line width <width>	tableformat insidewidth= Inside border line width not valid
W152: Invalid inside line style <style>	tableformat insidestyle= Inside border line style not valid
W153: Invalid outside line width <width>	tableformat outsidewidth= Outside border line width not valid
W154: Invalid outside line style <style>	tableformat outsidestyle= Outside border line style not valid
W155: Invalid font name <name>	tableformat font= Unable to set font for cell
W156: Unable to set font colour	tableformat colour= Unable to set font colour for cell
W157: Unable to set shading colour	tableformat shading= Unable to set background shading colour for cell
W158: Unable to set outside border style	tableformat outsidewidth= Unable to set outside border style for cell
W159: Unable to set bold attribute	tableformat bold Unable to set bold for cell
W160: Unable to set italics	tableformat italics Unable to set italics for cell
W161: Unable to set font size <size>	tableformat fontsize= Unable to set font size for cell
W162: Unable to set underline type <type>	tableformat underline= Unable to set underline

	type for cell
W163: Unable to set cell width <width>	tableformat width= Unable to set cell width for cell
W164: Unable to set cell height <height>	tableformat height= Unable to set cell height for cell
W165: Unable to set outside border width	tableformat Unable to set border width for cell
W166: Unable to set horizontal alignment	tableformat halign= Unable to set horizontal alignment for cell
W167: Invalid font name <name>	tableformat font= Unable to set font for row
W168: Unable to set font colour	tableformat colour= Unable to set font colour for row
W169: Unable to set shading colour	tableformat shading= Unable to set background shading colour for row
W170: Unable to set outside border style	tableformat outsidewidth= Unable to set outside border style for row
W171: Unable to set inside border style	tableformat outsidewidth= Unable to set inside border style for row
W172: Unable to set bold attribute	tableformat bold Unable to set bold for row
W173: Unable to set italics	tableformat italics Unable to set italics for row
W174: Unable to set font size <size>	tableformat fontsize= Unable to set font size for row
W175: Unable to set underline type <type>	tableformat underline= Unable to set underline type for row
W176: Unable to set cell width <width>	tableformat width= Unable to set cell width for row
W177: Unable to set cell height <width>	tableformat width= Unable to set cell height for row
W178: Unable to set inside border width <width>	tableformat insidewidth= Unable to set inside border width for row
W179: Unable to set outside border width <width>	tableformat Unable to set outside border width for row
W180: Unable to set horizontal alignment	tableformat halign= Unable to set horizontal alignment for row
W181: Invalid font name <name>	tableformat font= Unable to set font for column
W182: Unable to set font colour	tableformat colour= Unable to set font colour for column
W183: Unable to set shading colour	tableformat shading= Unable to set background shading colour for column
W184: Unable to set bold attribute	tableformat bold Unable to set bold for column
W185: Unable to set italics	tableformat italics Unable to set italics for column
W186: Unable to set font size <size>	tableformat fontsize= Unable to set font size for column
W187: Unable to set underline type <type>	tableformat underline= Unable to set underline type for column

W188: Unable to set cell height <height>	tableformat width= Unable to set cell height for column
W189: Unable to set horizontal alignment	tableformat halign= Unable to set horizontal alignment for column
W190: Unable to set outside border style	tableformat outsidewidth= Unable to set outside border style for column
W191: Unable to set outside border width	tableformat Unable to set border width for column
W192: Unable to set inside border style	tableformat outsidewidth= Unable to set inside border style for column
W193: Unable to set inside border width <width>	tableformat insidewidth= Unable to set inside border width for column
W194: Unable to set cell width <width>	tableformat width= Unable to set cell width for column
W195: Invalid font name <name>	tableformat font= Unable to set font for table
W196: Unable to set font colour	tableformat colour= Unable to set font colour for table
W197: Unable to set shading colour	tableformat shading= Unable to set background shading colour for table
W198: Unable to set outside border style	tableformat outsidewidth= Unable to set outside border style for table
W199: Unable to set inside border style	tableformat outsidewidth= Unable to set inside border style for table
W200: Unable to set bold attribute	tableformat bold Unable to set bold for table
W201: Unable to set italics	tableformat italics Unable to set italics for table
W202: Unable to set font size <size>	tableformat fontsize= Unable to set font size for table
W203: Unable to set underline type <type>	tableformat underline= Unable to set underline type for table
W204: Unable to set cell width <width>	tableformat width= Unable to set cell width for table
W205: Unable to set cell height <height>	tableformat width= Unable to set cell height for table
W206: Unable to set inside border width	tableformat insidewidth= Unable to set inside border width for table
W207: Unable to set outside border width	tableformat Unable to set border width for table
W208: Unable to set horizontal alignment	tableformat halign= Unable to set horizontal alignment for table
W209: Invalid indent <indent>	tableformat indent= Indent not valid
W210: Unable to indent the table <indent>	tableformat indent= Unable to indent the table by the amount specified
W211: Too many columns for table	tablerow
W212: Unable to add bookmark <bkmark>	bookadd
W213: Unable to goto bookmark <bkmark>	bookgoto

W214: Unable to copy document to clipboard	copydoc
W215: Unable to paste from clipboard	pastedoc
W216: Unable to activate <docname>	activate
W217: Unable to find table	tableformat/tablerow No table exists in the document and a tableformat or tablerow command has been given.

## Fatal Errors in Excel

<u>Error</u>	<u>Command/Comment</u>
E001: Unable to open a new book	newbook
E002: Unable to open workbook <name>	openbook
E003: Unable to save <name>	save
E004: Unable to save <name>	saveas

## Non-Fatal Errors in Excel

<u>Error</u>	<u>Command/Comment</u>
E100: Invalid row number <number>	setrow Number is not an integer
E101: Invalid row number <number>	setrow Number is must be greater than zero
E102: Unable to print document	print
E103: Unable to make workbook visible and disconnect from Excel	leaveopen
E104: Invalid row number <number>	format row= Row number not an integer
E105: Invalid row number <number>	format row= Row number less than one
E106: Invalid column number <number>	format col= Column number not an integer
E107: Invalid column number <number>	format col= Column number less than one
E108: Invalid underline number <number>	format underline= Underline type not an integer
E109: Invalid underline number <number>	format underline = Underline type not one of the valid types
E110: Invalid shading colour <colour>	format shading= Shading colour not one of the valid types
E111: Invalid text colour <colour>	format colour= Text colour not one of the valid types
E112: Invalid font size <size>	format size= Size is not an integer
E113: Invalid font size <size>	format size= Size is less than one
E114: Invalid width <number>	format width= Width is not an integer
E115: Invalid width <number>	format width= Width is less than one
E116: Invalid height <number>	format height= Height is not an integer
E117: Invalid height <number>	format height= Height is less than one
E118: No valid Row, Column or Range specified	format Must specify at least one of row, col or range
E119: Invalid Range specified	format The range or row, column converted into a range is invalid
E120: Could not set bold attribute	format
E121: Could not set font size <size>	format
E122: Could not set font name <name>	format
E122: Could not set italics attribute	format

E123: Could not set number format <format>	format
E124: Could not set font colour	format
E125: Could not set shading colour	format
E126: Invalid horizontal alignment <align>	format
E127: Invalid vertical alignment <align>	format
E128: Invalid column width <width>	format
E129: Invalid column height <height>	format
E130: Could not set autofit on columns	format
E131: Could not set underline style	format
E132: Invalid column number <number>	writecell Column number is not an integer
E133: Invalid column number <number>	writecell Column number is less than one
E134: Invalid row number <number>	writecell Row number is not an integer
E135: Invalid row number <number>	writecell Row number is less than one
E136: Invalid range specified <range>	writecell
E137: Could not write cell value	writecell When row & column specified
E138: Could not write cell values to range	writecell When range specified
E139: No range or row,column specified	writecell
E140: Unable to write values to row	writerow
E141: Invalid fitwidth <width>	pagesetup Width is not an integer
E142: Invalid fitwidth <width>	pagesetup Width is less than one
E143: Invalid fitheight <height>	pagesetup Height is not an integer
E144: Invalid fitheight <height>	pagesetup Height is less than one
E145: Could not set gridlines option	pagesetup
E146: Unable to set fitwidth	pagesetup
E147: Unable to set fitheight	pagesetup
E148: Unknown paper size <papersize>	pagesetup
E149: Invalid border style	format
E150: Invalid border weight	format
E151: Invalid border colour	format
E152: Unable to apply inside line style	format
E153: Unable to apply inside line weight	format
E154: Unable to apply inside line colour	format

### **Fatal Errors in PDF**

P001: Windows is out of memory or resources
P002: File not found
P003: Path not found
P004: Windows denied access to this file
P005: Filename association incomplete
P006: No application associated with this filename extension
P007: Sharing violation on this file

## **Fatal Errors in executing a program**

X001: Windows is out of memory or resources
X002: File not found
X003: Path not found
X004: Windows denied access to this file
X005: Sharing violation on this file