# 4 Security Considerations

The password verifier features available 可用in the file format (see [Password Verifier Algorithm](#Section_e8a5fbec6cdc40d89fef9ad80e4172f4)) are used to prevent 防止accidental 意外modification, rather 而than being used as security features. It is possible to remove the passwords by removing the records containing the verifier values.

The translation of passwords from a double-byte [**Unicode**](#gt_c305d0ab-8b94-461a-bd76-13b40cb8c4d8) string to a new character string in the ANSI code page of the current system converts any Unicode character that cannot be mapped 映射to the ANSI code page of the current system to the 0x3F character in that code page (as described in [[ECMA-376]](https://go.microsoft.com/fwlink/?LinkId=200054) part 4, 3.2.29). Replacing these characters with 0x3F when the [**hash**](#gt_b7e2b611-0af5-4fec-8af2-3f9ce7bad205) is verified will generate positive hash value matches. In certain 某些locales this can be a significant 重要的portion of the everyday [**character set**](#gt_5004b992-4a9c-41c9-b65c-b2e7a2b04204).

When a file in this format is saved with obfuscation 困惑or encryption (see [Encryption](#Section_0f2ea0a19fc8468d97aa9d333b72d106)), there are two primary security considerations. First, only certain storages and [**streams**](#gt_f3529cd8-50da-4f36-aa0b-66af455edbb6) are encoded during encryption (see Encryption). Second, for the records that are encrypted, the record type and size are not encrypted in the [**BIFF**](#gt_f9965de8-cd18-4e26-a9c6-adfee3d67517) streams. Therefore, the list of records present in the file can be read from the file without actually 实际上decrypting it. Further security considerations regarding the file encryption algorithms are described in [[MS-OFFCRYPTO]](file:///C:\Users\Administrator\Desktop\OfficeEncryption\%5bMS-OFFCRYPTO%5d.pdf#Section_3c34d72a1a614b52a893196f9157f083) section 4.1.3.

# 5 Appendix A: Product Behavior

The information in this specification is applicable to the following Microsoft products or supplemental software. References to product versions include updates to those products.

 Microsoft Excel 97

 Microsoft Excel 2000

 Microsoft Excel 2002

 Microsoft Office Excel 2003

 Microsoft Office Excel 2007

 Microsoft Excel 2010

 Microsoft Excel 2013

 Microsoft Excel 2016

Exceptions, if any, are noted in this section. If an update version, service pack or Knowledge Base (KB) number appears with a product name, the behavior changed in that update. The new behavior also applies to subsequent updates unless otherwise specified. If a product edition appears with the product version, behavior is different in that product edition.

Unless otherwise specified, any statement of optional behavior in this specification that is prescribed using the terms "SHOULD" or "SHOULD NOT" implies product behavior in accordance with the SHOULD or SHOULD NOT prescription. Unless otherwise specified, the term "MAY" implies that the product does not follow the prescription.

[<1> Section 2.1.7.15](#Appendix_A_Target_1): Excel 2002, Office Excel 2003, Office Excel 2007, Excel 2010, and Excel 2013 can write, load, and process the Signatures Stream in a file. Excel 97, Excel 2000 can load a file with a Signatures Stream but ignores it.

[<2> Section 2.1.7.20.1](#Appendix_A_Target_2): When saving unsupported **future records** (section [2.1.6](#Section_b660b67822684414839ed1ae9a4e4e85)), Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 will write those records at the end of the **substream** (section [2.1.3](#Section_5e380e95a9f54dfdb6d9c6998a9772f8)) in which they were encountered during load, in the order in which they were encountered.

[<3> Section 2.1.7.20.2](#Appendix_A_Target_3): When saving unsupported **future records** (section 2.1.6), Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, Excel 2010, and Excel 2013 will write those records at the end of the **substream** (section 2.1.3) in which they were encountered during load, in the order in which they were encountered.

[<4> Section 2.1.7.20.2](#Appendix_A_Target_4): If a **Continue** record (section [2.4.58](#Section_999fae21d3d942e88290639782460c67)) is needed in the **MSODRAWING** rule (section [2.1.7.20.2](#Section_da37feb48b9a462d87772a5fddd4866e)), Office Excel 2003, Office Excel 2007, Excel 2010, and Excel 2013 can write out an **MsoDrawing** record (section [2.4.170](#Section_1b0b0ea35e1d41ce8e79e27f1041331e)) instead of the first **Continue** record (section 2.4.58).

[<5> Section 2.1.7.20.3](#Appendix_A_Target_5): When saving unsupported **future records** (section 2.1.6), Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, Excel 2010, and Excel 2013 will write those records at the end of the **substream** (section 2.1.3) in which they were encountered during load, in the order in which they were encountered.

[<6> Section 2.1.7.20.3](#Appendix_A_Target_6): If a **Continue** record (section 2.4.58) is needed in the **MSODRAWINGGROUP** rule, Office Excel 2003, Office Excel 2007, Excel 2010, and Excel 2013 can write out an **MsoDrawingGroup** record (section [2.4.171](#Section_43e0d49645db4f19bb33bcb2464aa83c)) instead of the first **Continue** record (section 2.4.58).

[<7> Section 2.1.7.20.4](#Appendix_A_Target_7): When saving unsupported **future records** (section 2.1.6), Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 will write those records at the end of the **substream** (section 2.1.3) in which they were encountered during load, in the order in which they were encountered.

[<8> Section 2.1.7.20.5](#Appendix_A_Target_8): When saving unsupported **future records** (section 2.1.6), Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 will write those records at the end of the **substream** (section 2.1.3) in which they were encountered during load, in the order in which they were encountered.

[<9> Section 2.1.7.20.6](#Appendix_A_Target_9): When saving unsupported **future records** (section 2.1.6), Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, Excel 2010, and Excel 2013 will write those records at the end of the **substream** (section 2.1.3) in which they were encountered during load, in the order in which they were encountered.

[<10> Section 2.1.7.20.6](#Appendix_A_Target_10): Office Excel 2007, Excel 2010, and Excel 2013 can save out a CELLTABLE without a **Row** record (section [2.4.221](#Section_4aab09eb49ed4d01a3b11d726247d3c2)).

[<11> Section 2.1.7.20.6](#Appendix_A_Target_11): If a **Continue** record (section 2.4.58) is needed in the **MSODRAWING** rule (section 2.1.7.20.2), Office Excel 2003, Office Excel 2007, Excel 2010, and Excel 2013 can write out an **MsoDrawing** record (section 2.4.170) instead of the first **Continue** record.

[<12> Section 2.1.7.21](#Appendix_A_Target_12): Only Office Excel 2007 and Excel 2010 can write the **XML Signatures storage**. Only Office Excel 2007 and Excel 2010 can load and process a file with a **XML Signatures storage**; Excel 97, Excel 2000, Excel 2002, Office Excel 2003 can load a file with a **XML Signatures storage** but ignore it.

[<13> Section 2.2.3.11](#Appendix_A_Target_13): Graph Component for Excel 97, Graph Component for Excel 2000, Graph Component for Excel 2002, Graph Component for Office Excel 2003, Graph Component for Office Excel 2007, and Graph Component for Excel 2010 can create files that do not conform to these rules.

[<14> Section 2.2.3.11](#Appendix_A_Target_14): Graph Component for Excel 97, Graph Component for Excel 2000, Graph Component for Excel 2002, Graph Component for Office Excel 2003, Graph Component for Office Excel 2007, and Graph Component for Excel 2010 can create files that do not conform to these rules.

[<15> Section 2.2.3.11](#Appendix_A_Target_15): Graph Component for Excel 97, Graph Component for Excel 2000, Graph Component for Excel 2002, Graph Component for Office Excel 2003, Graph Component for Office Excel 2007, and Graph Component for Excel 2010 can create files that do not conform to these rules.

[<16> Section 2.2.3.11](#Appendix_A_Target_16): Graph Component for Excel 97, Graph Component for Excel 2000, Graph Component for Excel 2002, Graph Component for Office Excel 2003, Graph Component for Office Excel 2007, and Graph Component for Excel 2010 can create files that do not conform to these rules.

[<17> Section 2.2.3.11](#Appendix_A_Target_17): Graph Component for Excel 97, Graph Component for Excel 2000, Graph Component for Excel 2002, Graph Component for Office Excel 2003, Graph Component for Office Excel 2007, and Graph Component for Excel 2010 can create files that do not conform to these rules.

[<18> Section 2.2.4.3](#Appendix_A_Target_18): Office Excel 2007 and Excel 2010 save metadata records when cells contain formulas referencing [**cube functions**](#gt_02658bae-45d5-4aad-be23-d35b9d440af3). However, this metadata does not remain associated with the cells and is only recorded for the purpose of load and calculation optimization.

[<19> Section 2.2.9](#Appendix_A_Target_19): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 warn the user when they enter passwords that contain characters other than alphanumeric characters or punctuation symbols.

[<20> Section 2.2.10](#Appendix_A_Target_20): In Excel 97, Excel 2000, Excel 2002, and Office Excel 2003 the maximum password length is 15 characters. In Office Excel 2007 and Excel 2010 the maximum password length is 255 characters.

[<21> Section 2.2.10](#Appendix_A_Target_21): Only Excel 2002 and Office Excel 2003 will save files with XOR obfuscation.

[<22> Section 2.2.10](#Appendix_A_Target_22): Only Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 will load and save files with RC4 CryptoAPI encryption.

[<23> Section 2.4.3](#Appendix_A_Target_23): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 write a value for this field but ignore it on load.

[<24> Section 2.4.3](#Appendix_A_Target_24): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 write a value for this field but ignore it on load.

[<25> Section 2.4.9](#Appendix_A_Target_25): When the base unit is not days, and the data is near the base value of the [**date system**](#gt_cfc29c5e-eb23-4077-b6eb-492f20f5c87f) specified by the **Date1904 record** (section [2.4.77](#Section_4a5e900a0eb043558fc181aab8f46e8b)), **catMin** value can underflow and get saved as a large number.

[<26> Section 2.4.9](#Appendix_A_Target_26): When the base unit is not days, and the data is near the maximum value of the date system specified by the **Date1904 record** (section 2.4.77), **catMax** value can overflow and get saved as a small number.

[<27> Section 2.4.21](#Appendix_A_Target_27): Excel 97 writes 0x07CC for **rupYear**.

[<28> Section 2.4.21](#Appendix_A_Target_28): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, Excel 2010, and Excel 2013 set the value to 0 on creation, and change it to 1 in subsequent loading and saving.

[<29> Section 2.4.21](#Appendix_A_Target_29): This happens only for Excel 97.

[<30> Section 2.4.21](#Appendix_A_Target_30): Excel 97.

[<31> Section 2.4.21](#Appendix_A_Target_31): Excel 2000.

[<32> Section 2.4.21](#Appendix_A_Target_32): Excel 2002.

[<33> Section 2.4.21](#Appendix_A_Target_33): Office Excel 2003.

[<34> Section 2.4.21](#Appendix_A_Target_34): Office Excel 2007.

[<35> Section 2.4.21](#Appendix_A_Target_35): Excel 2010

[<36> Section 2.4.21](#Appendix_A_Target_36): Excel 2013

[<37> Section 2.4.21](#Appendix_A_Target_37): Excel 97.

[<38> Section 2.4.21](#Appendix_A_Target_38): Excel 2000.

[<39> Section 2.4.21](#Appendix_A_Target_39): Excel 2002.

[<40> Section 2.4.21](#Appendix_A_Target_40): Office Excel 2003.

[<41> Section 2.4.21](#Appendix_A_Target_41): Office Excel 2007.

[<42> Section 2.4.21](#Appendix_A_Target_42): Excel 2010.

[<43> Section 2.4.21](#Appendix_A_Target_43): Excel 2013

[<44> Section 2.4.22](#Appendix_A_Target_44): Office Excel 2003, Office Excel 2007, and Excel 2010 will prompt the user in this case.

[<45> Section 2.4.22](#Appendix_A_Target_45): This behavior does not apply to Office Excel 2007 and Excel 2010.

[<46> Section 2.4.30](#Appendix_A_Target_46): Specifies either Excel 97, Excel 2000, Excel 2002, or Office Excel 2003.

[<47> Section 2.4.30](#Appendix_A_Target_47): Specifies either Office Excel 2007 or Excel 2010.

[<48> Section 2.4.45](#Appendix_A_Target_48): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 save negative values, but at load time the negative values are corrected to 0.

[<49> Section 2.4.45](#Appendix_A_Target_49): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 save negative values, but at load time the negative values are corrected to 0.

[<50> Section 2.4.45](#Appendix_A_Target_50): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 save negative values, but at load time the negative values are corrected to 0.

[<51> Section 2.4.45](#Appendix_A_Target_51): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 save negative values, but at load time the negative values are corrected to 0.

[<52> Section 2.4.46](#Appendix_A_Target_52): Office Excel 2007 and Excel 2010 can save values greater than or equal to 0 and less than or equal to 200. In Office Excel 2007 and Excel 2010 the view angle is determined by dividing this value by a factor of 2.

[<53> Section 2.4.46](#Appendix_A_Target_53): Office Excel 2007 and Excel 2010 can save values less than 5.

[<54> Section 2.4.46](#Appendix_A_Target_54): Office Excel 2007 and Excel 2010 can save values greater than 500.

[<55> Section 2.4.46](#Appendix_A_Target_55): Office Excel 2007 and Excel 2010 ignores this bit and will set it back to zero if the file is resaved.

[<56> Section 2.4.49](#Appendix_A_Target_56): Excel 2000

[<57> Section 2.4.49](#Appendix_A_Target_57): Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, Excel 2010, or Excel 2013

[<58> Section 2.4.49](#Appendix_A_Target_58): Office Excel 2007

[<59> Section 2.4.49](#Appendix_A_Target_59): Excel 97

[<60> Section 2.4.49](#Appendix_A_Target_60): Excel 97

[<61> Section 2.4.49](#Appendix_A_Target_61): Excel 2000

[<62> Section 2.4.49](#Appendix_A_Target_62): Excel 2002, Office Excel 2003

[<63> Section 2.4.49](#Appendix_A_Target_63): Office Excel 2007

[<64> Section 2.4.49](#Appendix_A_Target_64): Excel 2010

[<65> Section 2.4.49](#Appendix_A_Target_65): Excel 2013

[<66> Section 2.4.49](#Appendix_A_Target_66): Excel 2000

[<67> Section 2.4.49](#Appendix_A_Target_67): Excel 2002, Office Excel 2003

[<68> Section 2.4.49](#Appendix_A_Target_68): Office Excel 2007

[<69> Section 2.4.49](#Appendix_A_Target_69): Excel 2010

[<70> Section 2.4.49](#Appendix_A_Target_70): Excel 2013

[<71> Section 2.4.54](#Appendix_A_Target_71): Specifies Office Excel 2007, or Excel 2010.

[<72> Section 2.4.54](#Appendix_A_Target_72): Specifies Office Excel 2003, Excel 2002, Excel 2000, or Excel 97.

[<73> Section 2.4.54](#Appendix_A_Target_73): Specifies Office Excel 2003, Excel 2002, Excel 2000, or Excel 97.

[<74> Section 2.4.54](#Appendix_A_Target_74): Specifies Office Excel 2003, Excel 2002, Excel 2000, or Excel 97.

[<75> Section 2.4.74](#Appendix_A_Target_75): Office Excel 2007 and Excel 2010 can sometimes save values greater than 254.

[<76> Section 2.4.74](#Appendix_A_Target_76): Though the maximum zero-based series number is 254, Office Excel 2007 and Excel 2010 sometimes save values greater than 254.

[<77> Section 2.4.91](#Appendix_A_Target_77): This structure is not loaded or saved by Office Excel 2007 and Excel 2010.

[<78> Section 2.4.97](#Appendix_A_Target_78): Office Excel 2003 , Excel 2002, Excel 2000, and Excel 97 can save out 0 for this field. In these cases, if the **xfprops** field specifies a solid fill pattern as part of the formatting properties, the pattern's color is stored in the background color instead of the foreground color.

[<79> Section 2.4.102](#Appendix_A_Target_79): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 write out this record on save.

[<80> Section 2.4.102](#Appendix_A_Target_80): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 do not ignore this record.

[<81> Section 2.4.104](#Appendix_A_Target_81): Specifies Excel 97.

[<82> Section 2.4.105](#Appendix_A_Target_82): Specifies Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, or Excel 2010.

[<83> Section 2.4.107](#Appendix_A_Target_83): Excel 97 sometimes saves out a different number of elements.

[<84> Section 2.4.109](#Appendix_A_Target_84): This record is ignored in Office Excel 2007, and Excel 2010.

[<85> Section 2.4.110](#Appendix_A_Target_85): This record is ignored in Office Excel 2007 and Excel 2010.

[<86> Section 2.4.117](#Appendix_A_Target_86): This value is 0x0001 for files created using Office Excel 2007 and Excel 2010.

[<87> Section 2.4.122](#Appendix_A_Target_87): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 can save out 0 for certain [**fonts**](#gt_f8aa3f46-99d1-49bb-858f-b4bfa546c1c2).

[<88> Section 2.4.122](#Appendix_A_Target_88): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 can also write out the value 0 to specify a black font, or the value 72 to specify the automatic color for a control.

[<89> Section 2.4.122](#Appendix_A_Target_89): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 can also write out values 0 and 100 through 1000 (inclusive).

[<90> Section 2.4.122](#Appendix_A_Target_90): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 can save values greater than 5.

[<91> Section 2.4.126](#Appendix_A_Target_91): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 save values of 383 to 392.

[<92> Section 2.4.129](#Appendix_A_Target_92): Specifies Excel 2000.

[<93> Section 2.4.129](#Appendix_A_Target_93): Specifies Excel 2002.

[<94> Section 2.4.131](#Appendix_A_Target_94): If two consecutive GelFrame records appear, the second GelFrame is a continuation of the first.

[<95> Section 2.4.131](#Appendix_A_Target_95): Excel 97 does not save OPT2.

[<96> Section 2.4.133](#Appendix_A_Target_96): Office Excel 2007 and Excel 2010 uses this [**GUID**](#gt_f49694cc-c350-462d-ab8e-816f0103c6c1) to determine if the [**VBA**](#gt_bc3968c6-4bd2-40a2-8619-5cd7695b3e4f) project needs to be recompiled on load by comparing the GUID in the file to the GUID built into the application. If the value is 0x0, the VBA project needs to be recompiled on load.

[<97> Section 2.4.150](#Appendix_A_Target_97): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 can save any value from 0 to 0xFF.

[<98> Section 2.4.154](#Appendix_A_Target_98): This structure is not loaded or saved by Office Excel 2007 and Excel 2010

[<99> Section 2.4.159](#Appendix_A_Target_99): This structure is not loaded or saved by Office Excel 2007 and Excel 2010.

[<100> Section 2.4.191](#Appendix_A_Target_100): If the value of the **wPassword** field of the [Password](#Section_1d0e4db7cc6a4143b72c27d972f72f05) record in the [Globals Substream](#Section_ca4c174887294a93abb94602b3a01fb1) is not 0x0000, Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 encrypt the document as specified in [[MS-OFFCRYPTO]](file:///C:\Users\Administrator\Desktop\OfficeEncryption\%5bMS-OFFCRYPTO%5d.pdf#Section_3c34d72a1a614b52a893196f9157f083), section 2.3. If an encryption password is not specified the document is encrypted with the default password of "\x56\x65\x6C\x76\x65\x74\x53\x77\x65\x61\x74\x73\x68\x6F\x70".

[<101> Section 2.4.196](#Appendix_A_Target_101): Excel 97 and Excel 2000 do not save this field as part of the record.

[<102> Section 2.4.196](#Appendix_A_Target_102): Excel 97 and Excel 2000 do not save this field as part of the record.

[<103> Section 2.4.196](#Appendix_A_Target_103): Excel 97 and Excel 2000 do not save this field as part of the record.

[<104> Section 2.4.206](#Appendix_A_Target_104): If the value of the **protPwdRev** field of the [Prot4RevPass](#Section_7ea7d419fec14f9295bbad6e3b3582c6) record is not 0x0000, Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 encrypt the document as specified in [MS-OFFCRYPTO], section 2.3. If an encryption password is not specified, the document is encrypted with the default password of "\x56\x65\x6C\x76\x65\x74\x53\x77\x65\x61\x74\x73\x68\x6F\x70".

[<105> Section 2.4.208](#Appendix_A_Target_105): In the case of Excel 97 this bit specifies whether the [**query table**](#gt_ceb1ea2c-7b55-4a25-a7f0-79b1c1011289) adjusts column width after refresh. If this bit is set to 1 and the **fPreserveFmt** field in the corresponding **dwQsiFuture** field of the [QsiSXTag](#Section_3bb6727096504455944daa8e21dbb19f) is set to 1 then the column width is not adjusted after refresh.

[<106> Section 2.4.210](#Appendix_A_Target_106): Excel 97

[<107> Section 2.4.210](#Appendix_A_Target_107): Excel 2000

[<108> Section 2.4.210](#Appendix_A_Target_108): Excel 2002

[<109> Section 2.4.210](#Appendix_A_Target_109): Office Excel 2003

[<110> Section 2.4.210](#Appendix_A_Target_110): Office Excel 2007

[<111> Section 2.4.210](#Appendix_A_Target_111): Excel 2010

[<112> Section 2.4.210](#Appendix_A_Target_112): Excel 2013

[<113> Section 2.4.216](#Appendix_A_Target_113): This structure is not loaded or saved by Office Excel 2007 or Excel 2010.

[<114> Section 2.4.218](#Appendix_A_Target_114): This record was introduced in Office Excel 2007 as a future record type. Consequently, it is preserved in [**BIFF8**](#gt_e60b71bb-c66c-4a44-ab07-0f9f20ee3dd5) format, but ignored by Office Excel 2003, Excel 2002, Excel 2000, and Excel 97.

[<115> Section 2.4.241](#Appendix_A_Target_115): If the [**workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe) contains more than 4112 [**sheets**](#gt_0b356926-f9cb-4dc2-a859-71441d62503d), then Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 can save a file in which any record that references a sheet identifier can reference the wrong sheet.

[<116> Section 2.4.248](#Appendix_A_Target_116): Office Excel 2007 and Excel 2010 will save at most 512 RefU in the rgref array of a Selection record. Office Excel 2003, Excel 2002, Excel 2000, and Excel 97 will save at most 1025 RefU in the rgref array of a Selection record.

[<117> Section 2.4.258](#Appendix_A_Target_117): This record was introduced in Office Excel 2007 as a Future Record Type. Consequently, it is preserved in BIFF8 format, but ignored by Office Excel 2003, Excel 2002, Excel 2000, and Excel 97.

[<118> Section 2.4.258](#Appendix_A_Target_118): This [**XML**](#gt_982b7f8e-d516-4fd5-8d5e-1a836081ed85) stream is ignored by Office Excel 2003, Excel 2002, Excel 2000, and Excel 97.

[<119> Section 2.4.259](#Appendix_A_Target_119): Saved only by Office Excel 2007 and Excel 2010.

[<120> Section 2.4.267](#Appendix_A_Target_120): Excel 97

[<121> Section 2.4.267](#Appendix_A_Target_121): Excel 2000

[<122> Section 2.4.267](#Appendix_A_Target_122): Excel 2002

[<123> Section 2.4.267](#Appendix_A_Target_123): Office Excel 2003

[<124> Section 2.4.267](#Appendix_A_Target_124): Office Excel 2007

[<125> Section 2.4.267](#Appendix_A_Target_125): Excel 2010

[<126> Section 2.4.267](#Appendix_A_Target_126): Excel 2013

[<127> Section 2.4.269](#Appendix_A_Target_127): Excel 2010, Office Excel 2007, Office Excel 2003, Excel 2002, Excel 2000, and Excel 97 save out an [XLUnicodeString](#Section_36ca6de7be1648bcaa5e3eaf4942f671) structure with 0 characters.

[<128> Section 2.4.273.9](#Appendix_A_Target_128): Excel 2000 has a maximum value of 8000. Excel 2002 and Office Excel 2003 have a maximum value of 32500. Values greater than these are treated as these maximums by these applications.

[<129> Section 2.4.273.108](#Appendix_A_Target_129): In certain circumstances Office Excel 2003, Excel 2002, and Excel 2000 can save out a higher value.

[<130> Section 2.4.281](#Appendix_A_Target_130): Office Excel 2007 and Excel 2010 can save out **wbe** with a value of 0x2B

[<131> Section 2.4.310](#Appendix_A_Target_131): Excel 97 does not create this field and ignores it if present.

[<132> Section 2.4.324](#Appendix_A_Target_132): Excel can write numbers larger than 4000 due to rounding while editing small charts.

[<133> Section 2.4.324](#Appendix_A_Target_133): Excel can write numbers larger than 4000 due to rounding while editing small charts.

[<134> Section 2.4.324](#Appendix_A_Target_134): Excel can write numbers larger than 4000 due to rounding while editing small charts.

[<135> Section 2.4.324](#Appendix_A_Target_135): Excel can write numbers larger than 4000 due to rounding while editing small charts.

[<136> Section 2.4.325](#Appendix_A_Target_136): This record was introduced in Office Excel 2007 as a Future Record Type. Consequently, it is preserved in BIFF8 format, but ignored by Office Excel 2003, Excel 2002, Excel 2000, and Excel 97.

[<137> Section 2.4.326](#Appendix_A_Target_137): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 can sometimes save value 123820, which also indicates default [**theme**](#gt_8b5eb4c0-949b-47d9-8b63-b9bda81d61b8).

[<138> Section 2.4.329](#Appendix_A_Target_138): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 also use the value "2" to specify justify low alignment. Justify low occurs when Arabic kashida justification is applied to the text. Justify low lengthens kashidas slightly.

[<139> Section 2.4.329](#Appendix_A_Target_139): Justified alignment is not supported in Office Excel 2007 and Excel 2010 and is treated as middle alignment.

[<140> Section 2.4.329](#Appendix_A_Target_140): Excel 97 – East Asian version, Excel 2000 – East Asian version, Excel 2002 – East Asian version, Office Excel 2003 – East Asian version, or Office Excel 2007 – East Asian version, or Excel 2010 – East Asian version.

[<141> Section 2.4.335](#Appendix_A_Target_141): Excel 97, Excel 2000, Excel 2002, and Office Excel 2003 do not set this bit to 1.

[<142> Section 2.4.337](#Appendix_A_Target_142): Excel 97, Excel 2000, Excel 2002, and Office Excel 2003 can save out a value of 0x0001, indicating that natural language formulas are enabled. This feature is deprecated in Office Excel 2007 and Excel 2010.

[<143> Section 2.4.344](#Appendix_A_Target_143): Stream does not exist in Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, or Excel 2010.

[<144> Section 2.4.346](#Appendix_A_Target_144): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 truncate **wScaleSLV** into a byte when saving.

[<145> Section 2.4.346](#Appendix_A_Target_145): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 truncate **wScaleNormal** into a byte when saving.

[<146> Section 2.4.353](#Appendix_A_Target_146): If the Transition Navigation Keys option is turned on, the set of prefix characters is single quote, double quote, caret, and backslash, which indicate left-alignment, right-alignment, center-alignment, and fill alignment, respectively. If the Transition Navigation Keys option is turned off, the only possible prefix character is single quote, which has no alignment significance but indicates (like all prefix characters) that the cell contents are to be treated as a string literal.

[<147> Section 2.4.353](#Appendix_A_Target_147): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 can save 0 in this field when **fStyle** equals 1.

[<148> Section 2.5.4](#Appendix_A_Target_148): Can sometimes be 0 if **year** is equal to 1900 and **month** is equal to 1 and the calendar is Gregorian.

[<149> Section 2.5.9](#Appendix_A_Target_149): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 can save XL8\_ITBLJAPAN2, XL8\_ITBLJAPAN3, XL8\_ITBLJAPAN4, and XL8\_ITBLNONE\_JPN as 0x0000, 0x0001, 0x0002, and 0x0003. In this case, values 0x0000 through 0x0010 are saved as 0x0004 through 0x0014.

[<150> Section 2.5.10](#Appendix_A_Target_150): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 can save bBoolErr with an error value instead of a Boolean value when fError is 0x00.

[<151> Section 2.5.16](#Appendix_A_Target_151): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 save out 0xFF.

[<152> Section 2.5.20](#Appendix_A_Target_152): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 also save out 0 to specify a black background.

[<153> Section 2.5.21](#Appendix_A_Target_153): The Alpha channel value in the [LongRGBA](#Section_ef480296bdc34bcbbd1ecd354b79d7c2) structure is ignored and set to 0xFF (opaque).

[<154> Section 2.5.27](#Appendix_A_Target_154): If Office Excel 2007 or Excel 2010 save different values for **cp** in the [CFEx](#Section_60d13d2f8eb741bf975c8a1a51ad58b6) and [CF](#Section_d6dcadf27e074f7da60a0f643780225d) records, then the value in CFEx takes precedence over the value in CF.

[<155> Section 2.5.32](#Appendix_A_Target_155): Office Excel 2007 and Excel 2010 will not apply any coloring to a cell when its CFVO value falls outside of the range of the interpolation curve and **fClamp** is not set.

[<156> Section 2.5.60](#Appendix_A_Target_156): Specifies Excel 97.

[<157> Section 2.5.60](#Appendix_A_Target_157): Specifies Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, or Excel 2010.

[<158> Section 2.5.60](#Appendix_A_Target_158): Specifies Excel 97.

[<159> Section 2.5.60](#Appendix_A_Target_159): Specifies Excel 2000.

[<160> Section 2.5.63](#Appendix_A_Target_160): The following table shows the maximum [data functionality levels](#Section_2bcedd76ef064e6084c718ea55042ed6) that different application versions support:

| Value | Maximum data functionality level for |
| --- | --- |
| 0 | Excel 97 and Excel 2000 |
| 1 | Excel 2002 and Office Excel 2003 |
| 3 | Office Excel 2007 |
| 4 | Excel 2010 |

[<161> Section 2.5.63](#Appendix_A_Target_161): In Excel 97, Excel 2000, Excel 2002, and Office Excel 2003, the values of some data functionality level fields do not always reflect the correct data functionality level.

[<162> Section 2.5.65](#Appendix_A_Target_162): In the 1900 date system, Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 treat the year 1900 as though it was a leap year. That is, the value 59 corresponds to February 28, and the value 61 corresponds to March 1, allowing the (non-existent) date February 29 to have the value 60.

[<163> Section 2.5.91](#Appendix_A_Target_163): Office Excel 2007 and Excel 2010 sometimes saves a value greater than 15 and less than 255.

[<164> Section 2.5.113](#Appendix_A_Target_164): This value is only possible in the context of a [Feature12](#Section_4c95f0ddd35745758b77792dbe2c0d5e) record, and cannot be written by Office Excel 2003.

[<165> Section 2.5.113](#Appendix_A_Target_165): Office Excel 2003 does not save the **totalFmla** field; **fLoadTotalFmla** is 0.

[<166> Section 2.5.118](#Appendix_A_Target_166): This structure only exists in the context of a Feature12 record, and cannot be written by Office Excel 2003.

[<167> Section 2.5.127](#Appendix_A_Target_167): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 can write out values 0x13 through 0x24.

[<168> Section 2.5.129](#Appendix_A_Target_168): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 can sometimes save out values 511 through 1022.

[<169> Section 2.5.129](#Appendix_A_Target_169): These 4 default structures are saved out as identical [Font](#Section_291a910ccb694799875ea201845d4fd1) structures. They are placeholders for their respective font formatting properties.

[<170> Section 2.5.130](#Appendix_A_Target_170): This value is ignored in Office Excel 2007 and Excel 2010.

[<171> Section 2.5.134](#Appendix_A_Target_171): The [Feature11](#Section_4c78a7d3a3ff48e28e2cc89785519322) and Feature12 records set the **ref8.rwFirst**, **ref8.rwLast**, **ref8.colFirst**, and **ref8.colLast** fields even if **fFrtRef** is 0.

[<172> Section 2.5.143](#Appendix_A_Target_172): Excel 97, Excel 2000, Excel 2002, and Office Excel 2003 all write out a value of 0 for this field and ignore it on load.

[<173> Section 2.5.162](#Appendix_A_Target_173): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 sometimes write out [Icv](#Section_b7160f4eabe8444da76c8f076a007d98) values 0x0000 and 0x0001. Office Excel 2007 and Excel 2010 sometimes also writes out Icv values that are greater than or equal to 0x0002 and less than or equal to 0x0007.

[<174> Section 2.5.164](#Appendix_A_Target_174): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 sometimes writes out Icv values greater than or equal to 0x01 and less than or equal to 0x07, or the value 0x48, which specifies the system color for text in windows.

[<175> Section 2.5.165](#Appendix_A_Target_175): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 can write values greater than or equal to 0x017F and less than or equal to 0x0188, but they will not be loaded.

[<176> Section 2.5.198.18](#Appendix_A_Target_176): In Office Excel 2007 and Excel 2010, [**natural language formulas**](#gt_d0a0a676-1ee8-4783-8862-15d57fb9456b) are transformed into [**A1**](#gt_950691d0-4b64-4e03-84ae-10d6c872bbdb) references.

[<177> Section 2.5.198.23](#Appendix_A_Target_177): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 can sometimes write out an **rgce** which contain [PtgArray](#Section_61167ac8b0ca42e5b82c41a25d12324c).

[<178> Section 2.5.198.104](#Appendix_A_Target_178): Excel 97, Excel 2000, Excel 2002 and Office Excel 2003 write out these [Ptg](#Section_9310c3bbd73f4db0834228e1e0fcb68f)s. Office Excel 2007 and Excel 2010 convert these Ptgs to equivalent [PtgArea](#Section_b3c714c24fcf48889e151cbf17e4d5d3)s or [PtgAreaErr](#Section_bbc29b52b5814417b18ca4ac430a8dc0)s on load and never introduces these Ptgs.

[<179> Section 2.5.203](#Appendix_A_Target_179): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 expect the **cbKey** field in the **PictFmlaKey** structure to be an even value.

[<180> Section 2.5.244](#Appendix_A_Target_180): ltExternalData is only read and saved by Office Excel 2007 and Excel 2010.

[<181> Section 2.5.248](#Appendix_A_Target_181): Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 can save out 0 for certain fonts.

[<182> Section 2.5.248](#Appendix_A_Target_182): Office Excel 2003, Office Excel 2007, and Excel 2010 can also write out 0.

[<183> Section 2.5.266](#Appendix_A_Target_183): Office Excel 2003 has unique table identifiers per sheet rather than per workbook. On load, Office Excel 2007 and Excel 2010 reassigns new identifiers if identical ones exist within a same workbook.

[<184> Section 2.5.266](#Appendix_A_Target_184): Set to 0x1 in case of Web-based [**data provider**](#gt_33fa4cdc-ae58-4a6c-8111-31377e1d292e) list [**data source**](#gt_e091613c-6901-4874-b9b2-27273ead1075) for [**worksheets**](#gt_2fdc6291-fa6a-48a6-afbb-04f910d68615) created using Office Excel 2003.

[<185> Section 2.5.266](#Appendix_A_Target_185): Office Excel 2007 and Excel 2010 will only write out the value of 1 for this field.

[<186> Section 2.5.266](#Appendix_A_Target_186): Office Excel 2003 saves 0xB, Office Excel 2007 saves 0xC, Excel 2010 saves 0xE.

[<187> Section 2.5.266](#Appendix_A_Target_187): Office Excel 2003, Office Excel 2007, and Excel 2010 do not ignore this field.

[<188> Section 2.5.272](#Appendix_A_Target_188): For files last saved in East Asian versions of the application, **lastRun** can sometimes be a [Run](#Section_d738ffef2bad4c6f88bee9e174a0b5c8) instead of a [TxoLastRun](#Section_6fb4c0e329c34a329c30e12a895c4074).

[<189> Section 2.5.282](#Appendix_A_Target_189): Specifies Office Excel 2007.

[<190> Section 2.5.314](#Appendix_A_Target_190): Office Excel 2007 and Excel 2010 can save values larger than 500.

[<191> Section 2.5.342](#Appendix_A_Target_191): Under certain circumstances, Excel 97, Excel 2000, Excel 2002, Office Excel 2003, Office Excel 2007, and Excel 2010 persist these values.

[<192> Section 2.5.344](#Appendix_A_Target_192): Office Excel 2003, Office Excel 2007, and Excel 2010 can sometimes save a value of -1 on the **itabLast** field for either a workbook-level or a sheet-level reference to an [external workbook](#Section_c8bd9cdbb0784622a3bffb87f35a36cc) if an [**Information Rights Management (IRM)**](#gt_ff35237a-a497-42aa-b0d5-7a0116328759) authorization failure occurred during a refresh of that workbook's data.

[<193> Section 2.6.2](#Appendix_A_Target_193): Web-only view is only used by Excel 97, Excel 2000, Excel 2002, and Office Excel 2003.

# 6 Change Tracking

No table of changes is available. The document is either new or has had no changes since its last release.