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Commit bca11ae



miss-islington and serhiy-storchaka authored on Oct 7, 2025 · ✖ 52 / 65 · Verified

[3.10] [gh-139700](#): Check consistency of the zip64 end of central directory record ([GH-139702](#)) ([GH-139708](#)) ([#139714](#))

Support records with "zip64 extensible data" if there are no bytes prepended to the ZIP file.

(cherry picked from commit [333d4a6](#))
(cherry picked from commit [162997b](#))

Co-authored-by: Serhiy Storchaka <storchaka@gmail.com>

3.10 ([#139714](#)) · v3.10.20 v3.10.19

1 parent [7317e0b](#) commit bca11ae

3 files changed +113 -23 ●●●●● ●

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- ✓ Lib
 - ✓ test
 - test_zipfile.py
 - zipfile.py
- ✓ Misc/NEWS.d/next/Security
 - 2025-10-07-19-31-34.gh-issue-139700.vNHU1O.rst

```

Lib/test/test_zipfile.py
↑
@@ -862,6 +862,8 @@ def make_zip64_file(

```

```

862 862         self, file_size_64_set=False, file_size_extra=False,
863 863         compress_size_64_set=False, compress_size_extra=False,
864 864         header_offset_64_set=False, header_offset_extra=False,
865 865         +         extensible_data=b'',
866 866         +         end_of_central_dir_size=None, offset_to_end_of_central_dir=None,
865 867     ):
866 868         """Generate bytes sequence for a zip with (incomplete) zip64 data.
867 869

```

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```

@@ -915,6 +917,12 @@ def make_zip64_file(
915 917
916 918         central_dir_size = struct.pack('<Q', 58 + 8 *
len(central_zip64_fields))
917 919         offset_to_central_dir = struct.pack('<Q', 50 + 8 *
len(local_zip64_fields))
920 920         +         if end_of_central_dir_size is None:
921 921         +             end_of_central_dir_size = 44 + len(extensible_data)
922 922         +         if offset_to_end_of_central_dir is None:
923 923         +             offset_to_end_of_central_dir = (108
924 924         +                 + 8 * len(local_zip64_fields)
925 925         +                 + 8 * len(central_zip64_fields))
918 926
919 927         local_extra_length = struct.pack("<H", 4 + 8 *
len(local_zip64_fields))
920 928         central_extra_length = struct.pack("<H", 4 + 8 *
len(central_zip64_fields))

```

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```

@@ -943,14 +951,17 @@ def make_zip64_file(
943 951         + filename
944 952         + central_extra
945 953         # Zip64 end of central directory
946 946         -         + b"PK\x06\x06,\x00\x00\x00\x00\x00\x00\x00-\x00-"
947 947         -         + b"\x00\x00\x00\x00\x00\x00\x00\x00\x00\x01\x00\x00\x00\x00\x00"
954 954         +         + b"PK\x06\x06"
955 955         +         + struct.pack('<Q', end_of_central_dir_size)
956 956         +         + b"-\x00-
\x00\x00\x00\x00\x00\x00\x00\x00\x00\x01\x00\x00\x00\x00\x00"
948 957         + b"\x00\x00\x01\x00\x00\x00\x00\x00\x00\x00"
949 958         + central_dir_size
950 959         + offset_to_central_dir

```

	960	+	+ extensible_data
951	961		# Zip64 end of central directory locator
952		-	+ b"PK\x06\x07\x00\x00\x00\x001\x00\x00\x00\x00\x00\x01"
953		-	+ b"\x00\x00\x00"
	962	+	+ b"PK\x06\x07\x00\x00\x00\x00"
	963	+	+ struct.pack('<Q', offset_to_end_of_central_dir)
	964	+	+ b"\x01\x00\x00\x00"
954	965		# end of central directory
955	966		+ b"PK\x05\x06\x00\x00\x00\x00\x01\x00\x01\x00:\x00\x00\x002\x00"
956	967		+ b"\x00\x00\x00\x00"
			@@ -981,6 +992,7 @@ def test_bad_zip64_extra(self):
981	992		with self.assertRaises(zipfile.BadZipFile) as e:
982	993		zipfile.ZipFile(io.BytesIO(missing_file_size_extra))
983	994		self.assertIn('file size', str(e.exception).lower())
	995	+	self.assertTrue(zipfile.is_zipfile(io.BytesIO(missing_file_size_extra)))
984	996		
985	997		# zip64 file size present, zip64 compress size present, one field in
986	998		# extra, expecting two, equals missing compress size.
			@@ -992,6 +1004,7 @@ def test_bad_zip64_extra(self):
992	1004		with self.assertRaises(zipfile.BadZipFile) as e:
993	1005		zipfile.ZipFile(io.BytesIO(missing_compress_size_extra))
994	1006		self.assertIn('compress size', str(e.exception).lower())
	1007	+	self.assertTrue(zipfile.is_zipfile(io.BytesIO(missing_compress_size_extra)))
995	1008		
996	1009		# zip64 compress size present, no fields in extra, expecting one,
997	1010		# equals missing compress size.
			@@ -1001,6 +1014,7 @@ def test_bad_zip64_extra(self):
1001	1014		with self.assertRaises(zipfile.BadZipFile) as e:
1002	1015		zipfile.ZipFile(io.BytesIO(missing_compress_size_extra))
1003	1016		self.assertIn('compress size', str(e.exception).lower())
	1017	+	self.assertTrue(zipfile.is_zipfile(io.BytesIO(missing_compress_size_extra)))
1004	1018		
1005	1019		# zip64 file size present, zip64 compress size present, zip64 header
1006	1020		# offset present, two fields in extra, expecting three, equals
			missing
			@@ -1015,6 +1029,7 @@ def test_bad_zip64_extra(self):

```

1015 1029         with self.assertRaises(zipfile.BadZipFile) as e:
1016 1030             zipfile.ZipFile(io.BytesIO(missing_header_offset_extra))
1017 1031         self.assertIn('header offset', str(e.exception).lower())
1032 +
self.assertTrue(zipfile.is_zipfile(io.BytesIO(missing_header_offset_extra)))
1018 1033
1019 1034         # zip64 compress size present, zip64 header offset present, one field
1020 1035         # in extra, expecting two, equals missing header offset
@@ -1027,6 +1042,7 @@ def test_bad_zip64_extra(self):
1027 1042         with self.assertRaises(zipfile.BadZipFile) as e:
1028 1043             zipfile.ZipFile(io.BytesIO(missing_header_offset_extra))
1029 1044         self.assertIn('header offset', str(e.exception).lower())
1045 +
self.assertTrue(zipfile.is_zipfile(io.BytesIO(missing_header_offset_extra)))
1030 1046
1031 1047         # zip64 file size present, zip64 header offset present, one field in
1032 1048         # extra, expecting two, equals missing header offset
@@ -1039,6 +1055,7 @@ def test_bad_zip64_extra(self):
1039 1055         with self.assertRaises(zipfile.BadZipFile) as e:
1040 1056             zipfile.ZipFile(io.BytesIO(missing_header_offset_extra))
1041 1057         self.assertIn('header offset', str(e.exception).lower())
1058 +
self.assertTrue(zipfile.is_zipfile(io.BytesIO(missing_header_offset_extra)))
1042 1059
1043 1060         # zip64 header offset present, no fields in extra, expecting one,
1044 1061         # equals missing header offset
@@ -1050,6 +1067,63 @@ def test_bad_zip64_extra(self):
1050 1067         with self.assertRaises(zipfile.BadZipFile) as e:
1051 1068             zipfile.ZipFile(io.BytesIO(missing_header_offset_extra))
1052 1069         self.assertIn('header offset', str(e.exception).lower())
1070 +
self.assertTrue(zipfile.is_zipfile(io.BytesIO(missing_header_offset_extra)))
1071 +
1072 +         def test_bad_zip64_end_of_central_dir(self):
1073 +             zipdata = self.make_zip64_file(end_of_central_dir_size=0)
1074 +             with self.assertRaisesRegex(zipfile.BadZipFile, 'Corrupt.*record'):
1075 +                 zipfile.ZipFile(io.BytesIO(zipdata))
1076 +             self.assertFalse(zipfile.is_zipfile(io.BytesIO(zipdata)))
1077 +
1078 +             zipdata = self.make_zip64_file(end_of_central_dir_size=100)

```

```
1079 +         with self.assertRaisesRegex(zipfile.BadZipFile, 'Corrupt.*record'):
1080 +             zipfile.ZipFile(io.BytesIO(zipdata))
1081 +         self.assertFalse(zipfile.is_zipfile(io.BytesIO(zipdata)))
1082 +
1083 +         zipdata = self.make_zip64_file(offset_to_end_of_central_dir=0)
1084 +         with self.assertRaisesRegex(zipfile.BadZipFile, 'Corrupt.*record'):
1085 +             zipfile.ZipFile(io.BytesIO(zipdata))
1086 +         self.assertFalse(zipfile.is_zipfile(io.BytesIO(zipdata)))
1087 +
1088 +         zipdata = self.make_zip64_file(offset_to_end_of_central_dir=1000)
1089 +         with self.assertRaisesRegex(zipfile.BadZipFile, 'Corrupt.*locator'):
1090 +             zipfile.ZipFile(io.BytesIO(zipdata))
1091 +         self.assertFalse(zipfile.is_zipfile(io.BytesIO(zipdata)))
1092 +
1093 +     def test_zip64_end_of_central_dir_record_not_found(self):
1094 +         zipdata = self.make_zip64_file()
1095 +         zipdata = zipdata.replace(b"PK\x06\x06", b'\x00'*4)
1096 +         with self.assertRaisesRegex(zipfile.BadZipFile, 'record not found'):
1097 +             zipfile.ZipFile(io.BytesIO(zipdata))
1098 +         self.assertFalse(zipfile.is_zipfile(io.BytesIO(zipdata)))
1099 +
1100 +         zipdata = self.make_zip64_file(
1101 +             extensible_data=b'\xca\xfe\x04\x00\x00\x00data')
1102 +         zipdata = zipdata.replace(b"PK\x06\x06", b'\x00'*4)
1103 +         with self.assertRaisesRegex(zipfile.BadZipFile, 'record not found'):
1104 +             zipfile.ZipFile(io.BytesIO(zipdata))
1105 +         self.assertFalse(zipfile.is_zipfile(io.BytesIO(zipdata)))
1106 +
1107 +     def test_zip64_extensible_data(self):
1108 +         # These values are what is set in the make_zip64_file method.
1109 +         expected_file_size = 8
1110 +         expected_compress_size = 8
1111 +         expected_header_offset = 0
1112 +         expected_content = b"test1234"
1113 +
1114 +         zipdata = self.make_zip64_file(
1115 +             extensible_data=b'\xca\xfe\x04\x00\x00\x00data')
1116 +         with zipfile.ZipFile(io.BytesIO(zipdata)) as zf:
1117 +             zinfo = zf.infolist()[0]
1118 +             self.assertEqual(zinfo.file_size, expected_file_size)
```

```

1119 +         self.assertEqual(zinfo.compress_size, expected_compress_size)
1120 +         self.assertEqual(zinfo.header_offset, expected_header_offset)
1121 +         self.assertEqual(zf.read(zinfo), expected_content)
1122 +         self.assertTrue(zipfile.is_zipfile(io.BytesIO(zipdata)))
1123 +
1124 +         with self.assertRaisesRegex(zipfile.BadZipFile, 'record not found'):
1125 +             zipfile.ZipFile(io.BytesIO(b'prepended' + zipdata))
1126 +         self.assertFalse(zipfile.is_zipfile(io.BytesIO(b'prepended' +
zipdata)))

```

1053 1127

1054 1128 def test_generated_valid_zip64_extra(self):

1055 1129 # These values are what is set in the make_zip64_file method.



Lib/zipfile.py



```
@@ -210,41 +210,57 @@ def is_zipfile(filename):
```

210 210

else:

211 211

with open(filename, "rb") as fp:

212 212

result = _check_zipfile(fp)

213

- except OSError:

213

+ except (OSError, BadZipFile):

214 214

pass

215 215

return result

216 216

217 217

def _EndRecData64(fpin, offset, endrec):

218 218

"""

219 219

Read the ZIP64 end-of-archive records and use that to update endrec

220 220

"""

221

- try:

222

fpin.seek(offset - sizeEndCentDir64Locator, 2)

223

- except OSError:

224

- # If the seek fails, the file is not large enough to contain a ZIP64

221

+ offset -= sizeEndCentDir64Locator

222

+ if offset < 0:

223

+ # The file is not large enough to contain a ZIP64

225 224

end-of-archive record, so just return the end record we were given.

226 225

return endrec

227

-

226

+ fpin.seek(offset)

228 227

data = fpin.read(sizeEndCentDir64Locator)

```

229 228         if len(data) != sizeEndCentDir64Locator:
230 -         return endrec
229 +         raise OSError("Unknown I/O error")
231 230         sig, diskno, reloff, disks = struct.unpack(structEndArchive64Locator,
data)
232 231         if sig != stringEndArchive64Locator:
233 232             return endrec
234 233
235 234         if diskno != 0 or disks > 1:
236 235             raise BadZipFile("zipfiles that span multiple disks are not
supported")
237 236
238 - # Assume no 'zip64 extensible data'
239 - fpin.seek(offset - sizeEndCentDir64Locator - sizeEndCentDir64, 2)
237 + offset -= sizeEndCentDir64
238 + if reloff > offset:
239 +     raise BadZipFile("Corrupt zip64 end of central directory locator")
240 + # First, check the assumption that there is no prepended data.
241 + fpin.seek(reloff)
242 + extrasz = offset - reloff
240 243 data = fpin.read(sizeEndCentDir64)
241 244 if len(data) != sizeEndCentDir64:
242 - return endrec
245 + raise OSError("Unknown I/O error")
246 + if not data.startswith(stringEndArchive64) and reloff != offset:
247 +     # Since we already have seen the Zip64 EOCD Locator, it's
248 +     # possible we got here because there is prepended data.
249 +     # Assume no 'zip64 extensible data'
250 +     fpin.seek(offset)
251 +     extrasz = 0
252 +     data = fpin.read(sizeEndCentDir64)
253 +     if len(data) != sizeEndCentDir64:
254 +         raise OSError("Unknown I/O error")
255 +     if not data.startswith(stringEndArchive64):
256 +         raise BadZipFile("Zip64 end of central directory record not found")
257 +
243 258 sig, sz, create_version, read_version, disk_num, disk_dir, \
244 259     dircount, dircount2, dirsized, diroffset = \
245 260     struct.unpack(structEndArchive64, data)
246 - if sig != stringEndArchive64:

```

247	-	<code>return endrec</code>
261	+	<code>if (diroffset + dirsize != reloff or</code>
262	+	<code>sz + 12 != sizeEndCentDir64 + extrasz):</code>
263	+	<code>raise BadZipFile("Corrupt zip64 end of central directory record")</code>
248	264	
249	265	<code># Update the original endrec using data from the ZIP64 record</code>
250	266	<code>endrec[_ECD_SIGNATURE] = sig</code>
↕		<code>@@ -254,6 +270,7 @@ def _EndRecData64(fpin, offset, endrec):</code>
254	270	<code>endrec[_ECD_ENTRIES_TOTAL] = dircount2</code>
255	271	<code>endrec[_ECD_SIZE] = dirsize</code>
256	272	<code>endrec[_ECD_OFFSET] = diroffset</code>
273	+	<code>endrec[_ECD_LOCATION] = offset - extrasz</code>
257	274	<code>return endrec</code>
258	275	
259	276	
↓		<code>@@ -287,7 +304,7 @@ def _EndRecData(fpin):</code>
↑		
287	304	<code>endrec.append(filesize - sizeEndCentDir)</code>
288	305	
289	306	<code># Try to read the "Zip64 end of central directory" structure</code>
290	-	<code>return _EndRecData64(fpin, -sizeEndCentDir, endrec)</code>
307	+	<code>return _EndRecData64(fpin, filesize - sizeEndCentDir, endrec)</code>
291	308	
292	309	<code># Either this is not a ZIP file, or it is a ZIP file with an archive</code>
293	310	<code># comment. Search the end of the file for the "end of central directory"</code>
↕		<code>@@ -311,8 +328,7 @@ def _EndRecData(fpin):</code>
311	328	<code>endrec.append(maxCommentStart + start)</code>
312	329	
313	330	<code># Try to read the "Zip64 end of central directory" structure</code>
314	-	<code>return _EndRecData64(fpin, maxCommentStart + start - filesize,</code>
315	-	<code>endrec)</code>
331	+	<code>return _EndRecData64(fpin, maxCommentStart + start, endrec)</code>
316	332	
317	333	<code># Unable to find a valid end of central directory structure</code>
318	334	<code>return None</code>
↓		<code>@@ -1345,9 +1361,6 @@ def _RealGetContents(self):</code>
↑		
1345	1361	
1346	1362	<code># "concat" is zero, unless zip was concatenated to another file</code>
1347	1363	<code>concat = endrec[_ECD_LOCATION] - size_cd - offset_cd</code>

```

1348 -         if endrec[_ECD_SIGNATURE] == stringEndArchive64:
1349 -             # If Zip64 extension structures are present, account for them
1350 -             concat -= (sizeEndCentDir64 + sizeEndCentDir64Locator)
1351 1364
1352 1365         if self.debug > 2:
1353 1366             inferred = concat + offset_cd
1354 1367
1355 1368     @@ -1928,7 +1941,7 @@ def _write_end_record(self):
1356 1369         " would require ZIP64 extensions")
1357 1370         zip64endrec = struct.pack(
1358 1371             structEndArchive64, stringEndArchive64,
1359 1372             44, 45, 45, 0, 0, centDirCount, centDirCount,
1360 1373             sizeEndCentDir64 - 12, 45, 45, 0, 0, centDirCount,
1361 1374             centDirCount,
1362 1375             centDirSize, centDirOffset)
1363 1376         self.fp.write(zip64endrec)
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