

The exact method to backport is Typeface.create(Typeface base, int weight, boolean italic)

Motivation:

With android:textFontWeight backported (backed by the above-mentioned method) we could use text appearances with different weights - by referencing font family and weight - since API 16 (?) AppCompatActivity.

This is currently only possible since API 28.

Another potential use is a future TypeAppearanceSpanCompat.

Example:

```
res/font/raleway.xml<font-family xmlns:app="http://schemas.android.com/apk/res-auto">
    <font
        app:font="@font/raleway_thin"
        app:fontStyle="normal"
        app:fontWeight="100" />
    <font
        app:font="@font/raleway_thin_italic"
        app:fontStyle="italic"
        app:fontWeight="100" />
    <font
        app:font="@font/raleway_regular"
        app:fontStyle="normal"
        app:fontWeight="400" />
</font-family>

res/values/styles.xml<resources>
    <style name="TextAppearance.Raleway.Regular" parent="TextAppearance.AppCompat">
        <item name="android:fontFamily">@font/raleway</item>
        <item name="android:textFontWeight">400</item>
        <item name="textFontWeight">400</item>
    </style>

    <style name="TextAppearance.Raleway.Thin" parent="TextAppearance.AppCompat">
        <item name="android:fontFamily">@font/raleway</item>
        <item name="android:textFontWeight">100</item>
        <item name="textFontWeight">100</item>
    </style>

    <style name="TextAppearance.Raleway.Thin.Italic" parent="TextAppearance.AppCompat">
        <item name="android:fontFamily">@font/raleway</item>
        <item name="android:textFontWeight">100</item>
        <item name="textFontWeight">100</item>
        <item name="android:textStyle">italic</item>
    </style>
</resources>

Example implementation:

On API 26-27 we could re-implement Typeface.create mentioned above as the backing JNI method already exists.
See https://github.com/consp1racy/android-commons/blob/3a90d3341aa05c6e57d2986d6d48d5446f2d95f6/text-span/src/main/java/net/xpece/android/graphics/WeightTypefaceOreo.kt

On API 21-25 we'd need to first create a Typeface with matching italic (using the Typeface.create with style API) and then use the JNI method to create weight alias.
See https://github.com/consp1racy/android-commons/blob/3a90d3341aa05c6e57d2986d6d48d5446f2d95f6/text-span/src/main/java/net/xpece/android/graphics/WeightTypefaceLollipop.kt

On API 20 and below we could leverage the fact that the only place weight typefaces could come from are from ResourcesCompat.getFont so we use TypefaceCompat internals to find the font f and look for best match in Java.
See https://github.com/consp1racy/android-commons/blob/3a90d3341aa05c6e57d2986d6d48d5446f2d95f6/text-span/src/main/java/net/xpece/android/graphics/WeightTypefaceLegacy.kt
```

"<font-family xmlns:app=" <http://schemas.android.com/apk/res-auto> ">"

"See <https://github.com/consp1racy/android-commons/blob/3a90d3341aa05c6e57d2986d6d48d5446f2d95f6/text-span/src/main/java/net/xpece/and...>"

"See <https://github.com/consp1racy/android-commons/blob/3a90d3341aa05c6e57d2986d6d48d5446f2d95f6/text-span/src/main/java/net/xpece/and...>"

"See <https://github.com/consp1racy/android-commons/blob/3a90d3341aa05c6e57d2986d6d48d5446f2d95f6/text-span/src/main/java/net/xpece/and...>"

"I adapted the original implementation into a CL here <https://android-review.googlesource.com/c/platform/frameworks/support/+1654950>"

See all related links

COMMENTS

All comments ↓ Oldest

ki...@google.com <ki...@google.com> Apr 14, 2020 12:5

Assigned to si...@google.com.

si...@google.com <si...@google.com> Apr 14, 2020 02:1

Reassigned to an...@google.com.

ja...@gmail.com <ja...@gmail.com> [#2](#) Aug 3, 2020 08:33PM

Any updates on this?

ru...@gcpsoftware.com <ru...@gcpsoftware.com> [#3](#) Mar 25, 2021 12:17AM

Any update?

e....@gmail.com <e....@gmail.com> [#4](#) Mar 29, 2021 12:32AM

I adapted the original implementation into a CL here <https://android-review.googlesource.com/c/platform/frameworks/support/+1654950>

jh...@themeetgroup.com <jh...@themeetgroup.com> [#5](#) Apr 6, 2022 03:59AM

I see that the above CL has had some movement recently, which is great!

Out of curiosity, will this enable picking up `fontWeight` and/or `textFontWeight` from view styles/`TextAppearance` automatically (at least in `AppCompatActivity`)? Or is this *only* going to enable `TypefaceCompat.create()`? The code seems to be implementing only the `Typeface` side of this, but not actually utilizing that in `AppCompatActivity`.

Our concern has been that there's no way to define a proper `font-family` resource, set it once, and then let the `View/style/TextAppearance` select the right weight from there. That is, the way that the framework `fonts.xml` font families work.

ap...@google.com <ap...@google.com> [#6](#) Jul 2, 2022 07:24AM

Project: platform/frameworks/support
Branch: androidx-main

commit daf12216d3afba24fe01e87573da6785044a2d26
Author: Sean McQuillan <seanmcg@googole.com>
Date: Fri Apr 08 14:13:29 2022

When `TypefaceCompat.create` fallback fails don't throw

Previously: Reflection invocation could error in unknown circumstances

Now: Typeface fallback will silently defer to legacy implementation.

Bug: [b/145311058](#)
Test: `./gradlew :core:core:cAT`
Change-Id: `I8ac8ecb9ba3a631c17bab53e44e73ecd024589ad`

M core/core/src/main/java/androidx/core/graphics/TypefaceCompatBaselImpl.java
M core/core/src/main/java/androidx/core/graphics/WeightTypefaceApi21.java
M compose/ui/ui/src/androidAndroidTest/kotlin/androidx/compose/ui/AccessibilityIteratorsTest.kt
M core/core/src/main/java/androidx/core/graphics/TypefaceCompatApi21Impl.java
M core/core/src/main/java/androidx/core/graphics/TypefaceCompatApi24Impl.java
M compose/ui/ui/src/androidAndroidTest/kotlin/androidx/compose/ui/input/CursorAnchorInfoBuilderTest.kt
M core/core/src/main/java/androidx/core/graphics/TypefaceCompatApi26Impl.java
M compose/ui/ui/src/androidAndroidTest/kotlin/androidx/compose/ui/platform/AndroidFontResourceLoaderTest.kt
M core/core/src/main/java/androidx/core/graphics/WeightTypefaceApi26.java

<https://android-review.googlesource.com/2060168>

ap...@google.com <ap...@google.com> [#7](#) Jul 2, 2022 07:24AM

Project: platform/frameworks/support
Branch: androidx-main

commit 1f602ac9318d4c7368a64af93a5c53f88b795628

Author: Sean McQuillan <seanmcg@google.com>

Date: Wed Jun 29 12:38:11 2022

Move ui-test-font to testutils-fonts

This allows the test fonts to be used by both Compose and non-compose androidx modules.

Update TypefaceCompat.create tests to use new fonts.

Bug: [b/145311058](#)

Test: ./gradlew cAT test

Change-Id: Ief0d672c9571a13e5471ed03e1f35fb00cc5347f

```
A testutils/testutils-fonts/src/commonMain/java/androidx/testutils/WeightStyleFont.kt
M compose/ui/ui-text/build.gradle
A testutils/testutils-fonts/build.gradle
D compose/ui/ui-test-font/api/1.1.0-beta05.txt
M testutils/testutils-fonts/src/commonMain/resources/font/kern_font.ttf
M testutils/testutils-fonts/src/font_ttx/test_400_italic.ttx
M testutils/testutils-fonts/src/font_ttx/test_800_italic.ttx
D compose/ui/ui-test-font/api/res-1.0.0-beta07.txt
D compose/ui/ui-test-font/build.gradle
D compose/ui/ui-test-font/api/res-1.1.0-beta03.txt
M text/text/src/androidTest/java/androidx/compose/ui/text/android/LayoutGetHorizontalMultiLineTest.kt
D compose/ui/ui-test-font/api/public_plus_experimental_1.2.0-beta02.txt
M testutils/testutils-fonts/src/commonMain/resources/font/test_800_regular.ttf
D compose/ui/ui-test-font/api/1.0.0-beta02.txt
M testutils/testutils-fonts/src/commonMain/resources/font/test_700_italic.ttf
D compose/ui/ui-test-font/api/public_plus_experimental_1.0.0-beta05.txt
D compose/ui/ui-test-font/api/restricted_1.0.0-beta09.txt
M testutils/testutils-fonts/src/font_ttx/test_400_regular.ttx
M testutils/testutils-fonts/src/font_ttx/test_200_regular.ttx
D compose/ui/ui-test-font/api/restricted_1.0.0-beta05.txt
D compose/ui/ui-test-font/api/restricted_1.1.0-beta05.txt
M testutils/testutils-fonts/src/font_ttx/test_900_regular.ttx
D compose/ui/ui-test-font/api/res-1.2.0-beta04.txt
M testutils/testutils-fonts/src/commonMain/resources/font/test_300_regular.ttf
M text/text/src/androidTest/java/androidx/compose/ui/text/android/FontPaddingWithCustomFallbackTest.kt
M compose/ui/ui/src/androidAndroidTest/kotlin/androidx/compose/ui/input/CursorAnchorInfoBuilderTest.kt
D compose/ui/ui-test-font/api/res-1.1.0-beta05.txt
D compose/ui/ui-test-font/api/res-1.0.0-beta05.txt
D compose/ui/ui-test-font/api/res-1.0.0-beta03.txt
M compose/ui/ui/build.gradle
D compose/ui/ui-test-font/api/public_plus_experimental_1.0.0-beta07.txt
M text/text/src/androidTest/java/androidx/compose/ui/text/android/LayoutIntrinsicsTest.kt
D compose/ui/ui-test-font/api/1.0.0-beta09.txt
D compose/ui/ui-test-font/api/restricted_1.2.0-beta04.txt
M text/text/src/androidTest/java/androidx/compose/ui/text/android/animation/SegmentBreakerBreakSegmentTest.kt
D compose/ui/ui-test-font/api/1.2.0-beta01.txt
D compose/ui/ui-test-font/api/restricted_1.1.0-beta03.txt
D compose/ui/ui-test-font/api/restricted_1.0.0-beta03.txt
M compose/ui/ui-text/src/androidAndroidTest/kotlin/androidx/compose/ui/text/FontTestData.kt
D compose/ui/ui-test-font/api/res-1.2.0-beta02.txt
M testutils/testutils-fonts/src/font_ttx/tall_font.ttx
D compose/ui/ui-test-font/api/public_plus_experimental_1.0.0-beta08.txt
D compose/ui/ui-test-font/api/public_plus_experimental_1.1.0-beta04.txt
D compose/ui/ui-test-font/api/restricted_1.2.0-beta02.txt
D compose/ui/ui-test-font/api/restricted_1.0.0-beta02.txt
D compose/ui/ui-test-font/api/1.0.0-beta06.txt
D compose/ui/ui-test-font/api/public_plus_experimental_1.1.0-beta02.txt
M testutils/testutils-fonts/src/commonMain/resources/font/test_600_italic.ttf
M testutils/testutils-fonts/src/commonMain/resources/font/test_800_italic.ttf
D compose/ui/ui-test-font/api/res-1.0.0-beta02.txt
M testutils/testutils-fonts/src/commonMain/resources/font/test_100_regular.ttf
D compose/ui/ui-test-font/api/res-current.txt
M compose/foundation/foundation/src/androidAndroidTest/kotlin/androidx/compose/foundation/text/TextTestExtensions.kt
D compose/ui/ui-test-font/api/res-1.0.0-beta09.txt
D compose/ui/ui-test-font/api/1.1.0-beta03.txt
M testutils/testutils-fonts/src/commonMain/resources/font/test_400_italic.ttf
M testutils/testutils-fonts/src/commonMain/resources/font/test_200_italic.ttf
D compose/ui/ui-test-font/api/1.0.0-beta10.txt
D compose/ui/ui-test-font/api/1.2.0-beta04.txt
D compose/ui/ui-test-font/api/1.0.0-beta04.txt
M testutils/testutils-fonts/src/font_ttx/kern_font.ttx
D compose/ui/ui-test-font/api/current.txt
D compose/ui/ui-test-font/api/public_plus_experimental_1.0.0-beta03.txt
D compose/ui/ui-test-font/api/restricted_1.0.0-beta07.txt
M testutils/testutils-fonts/src/font_ttx/sample_font.ttx
M testutils/testutils-fonts/src/font_ttx/test_200_italic.ttx
M testutils/testutils-fonts/src/font_ttx/test_300_regular.ttx
M testutils/testutils-fonts/src/commonMain/resources/font/test_900_regular.ttf
M text/text/src/androidTest/java/androidx/compose/ui/text/android/PaintBoundsTest.kt
M testutils/testutils-fonts/src/commonMain/resources/font/test_400_regular.ttf
```

text/text/src/androidTest/java/androidx/compose/ui/text/android/TextLayoutFillBoundingBoxesTest.kt
testutils/testutils-fonts/src/font_ttx/asset_font.ttx
compose/ui/ui-test-font/api/public_plus_experimental_1.2.0-beta03.txt
compose/ui/ui-test-font/api/restricted_1.0.0-beta08.txt
testutils/testutils-fonts/src/font_ttx/test_600_italic.ttx
text/text/src/androidTest/java/androidx/compose/ui/text/android/TextLayoutTest.kt
compose/ui/ui-test-font/api/public_plus_experimental_1.0.0-beta04.txt
testutils/testutils-fonts/src/font_ttx/test_800_regular.ttx
compose/ui/ui-test-font/api/restricted_1.1.0-beta02.txt
compose/ui/ui-test-font/api/restricted_1.0.0-beta06.txt
compose/ui/ui-test-font/api/public_plus_experimental_1.0.0-beta02.txt
compose/ui/ui-inspection/src/androidTest/java/androidx/compose/ui/inspection/inspector/LayoutInspectorTreeTest.kt
text/text/src/androidTest/java/androidx/compose/ui/text/android/LayoutGetHorizontalTest.kt
compose/ui/ui-test-font/api/public_plus_experimental_1.0.0-beta10.txt
compose/ui/ui-test-font/api/res-1.1.0-beta02.txt
compose/ui/ui-test-font/api/res-1.0.0-beta06.txt
compose/ui/ui-test-font/api/public_plus_experimental_current.txt
testutils/testutils-fonts/src/commonMain/resources/font/tall_font.ttf
compose/ui/ui-test-font/api/res-1.1.0-beta04.txt
testutils/testutils-fonts/src/commonMain/resources/font/test_900_italic.ttf
compose/ui/ui-test-font/api/public_plus_experimental_1.0.0-beta06.txt
compose/ui/ui-test-font/api/public_plus_experimental_1.2.0-beta01.txt
core/core/build.gradle
compose/ui/ui-test-font/api/1.0.0-beta08.txt
compose/ui/ui-test-font/api/1.2.0-beta02.txt
compose/ui/ui-test-font/api/restricted_1.1.0-beta04.txt
compose/ui/ui-test-font/api/restricted_1.0.0-beta04.txt
testutils/testutils-fonts/OWNERS
testutils/testutils-fonts/src/commonMain/resources/font/sample_font.ttf
text/text/src/androidTest/java/androidx/compose/ui/text/android/FontPaddingTest.kt
compose/foundation/foundation/build.gradle
testutils/testutils-fonts/src/font_ttx/test_500_regular.ttx
testutils/testutils-fonts/src/commonMain/resources/font/test_700_regular.ttf
testutils/testutils-fonts/src/font_ttx/test_100_regular.ttx
compose/ui/ui/src/androidAndroidTest/kotlin/androidx/compose/ui/AccessibilityIteratorsTest.kt
compose/ui/ui-test-font/api/restricted_1.2.0-beta03.txt
text/text/src/androidTest/java/androidx/compose/ui/text/android/TextLayoutIntrinsicWidthTest.kt
testutils/testutils-fonts/src/commonMain/resources/font/test_200_regular.ttf
compose/ui/ui/src/androidAndroidTest/kotlin/androidx/compose/ui/platform/AndroidFontResourceLoaderTest.kt
compose/ui/ui-test-font/api/res-1.0.0-beta04.txt
testutils/testutils-fonts/src/font_ttx/test_100_italic.ttx
text/text/build.gradle
testutils/testutils-fonts/src/androidMain/assets/subdirectory/asset_font.ttf
compose/ui/ui-test-font/api/restricted_current.txt
testutils/testutils-fonts/src/commonMain/resources/font/sample_font2.ttf
text/text/src/androidTest/java/androidx/compose/ui/text/android/TextLayoutSpanTest.kt
core/core/src/androidTest/res/font/weighttestfont.xml
compose/ui/ui-test-font/api/public_plus_experimental_1.1.0-beta03.txt
testutils/testutils-fonts/src/font_ttx/test_500_italic.ttx
compose/ui/ui-test-font/api/res-1.0.0-beta10.txt
compose/ui/ui-test-font/api/1.0.0-beta05.txt
testutils/testutils-fonts/src/font_ttx/test_700_italic.ttx
testutils/testutils-fonts/src/font_ttx/test_900_italic.ttx
compose/ui/ui-test-font/api/res-1.2.0-beta01.txt
compose/ui/ui-test-font/api/res-1.2.0-beta03.txt
compose/foundation/foundation/src/androidAndroidTest/kotlin/androidx/compose/foundation/textfield/TextFieldTest.kt
core/core/src/androidTest/java/androidx/core/graphics/TypefaceCompatTest.java
testutils/testutils-fonts/src/font_ttx/test_600_regular.ttx
testutils/testutils-fonts/src/commonMain/resources/font/test_600_regular.ttf
compose/ui/ui-test-font/api/1.1.0-beta02.txt
compose/ui/ui-test-font/api/public_plus_experimental_1.0.0-beta09.txt
compose/ui/ui-test-font/api/restricted_1.0.0-beta10.txt
compose/ui/ui-test-font/api/public_plus_experimental_1.1.0-beta05.txt
compose/ui/ui-test-font/api/1.0.0-beta07.txt
compose/ui/ui-test-font/api/restricted_1.2.0-beta01.txt
text/text/src/androidTest/java/androidx/compose/ui/text/android/SegmentBreakerTest.kt
testutils/testutils-fonts/src/androidMain/AndroidManifest.xml
compose/ui/ui-test-font/api/1.2.0-beta03.txt
settings.gradle
compose/ui/ui-test-font/api/1.0.0-beta03.txt
testutils/testutils-fonts/src/commonMain/resources/font/test_500_italic.ttf
testutils/testutils-fonts/src/commonMain/resources/font/test_500_regular.ttf
testutils/testutils-fonts/src/font_ttx/test_700_regular.ttx
testutils/testutils-fonts/src/commonMain/resources/font/test_300_italic.ttf
compose/ui/ui-test-font/api/1.1.0-beta04.txt
text/text/src/androidTest/java/androidx/compose/ui/text/android/StaticLayoutFactoryTest.kt
testutils/testutils-fonts/src/commonMain/resources/font/test_100_italic.ttf
testutils/testutils-fonts/src/commonMain/resources/font/invalid_font.ttf
docs-tip-of-tree/build.gradle
compose/ui/ui-test-font/api/public_plus_experimental_1.2.0-beta04.txt
compose/ui/ui-inspection/build.gradle
compose/ui/ui-test-font/api/res-1.0.0-beta08.txt
testutils/testutils-fonts/src/font_ttx/test_300_italic.ttx

<https://android-review.googlesource.com/2057107>

Project: platform/frameworks/support
Branch: androidx-main

commit 76a0566121b58e1d9722352ac1e70e35dd1098fe
Author: Sean McQuillan <seanmcg@google.com>
Date: Tue Mar 29 15:07:23 2022

TypefaceCompat create falls back to Typeface.create

On API 14-20 fall back to platform Typeface.create if compat impl cannot resolve.

Also remove extra logging from TypefaceCompat.create path.

Test: ./gradlew :core:core:cAT

Bug: [b/145311058](#)

Relnote: "TypefaceCompate.create(..., weight, italic) will fallback to platform Typeface.create when compat impl cannot resolve on API 14-20"

Change-Id: I1ee34c7e38fc36174151d88d363adaee4371cb51

M core/core/src/main/java/androidx/core/graphics/TypefaceCompatBaselImpl.java
M core/core/src/androidTest/java/androidx/core/graphics/TypefaceCompatTest.java
M core/core/src/main/java/androidx/core/graphics/WeightTypefaceApi21.java
M core/core/src/main/java/androidx/core/graphics/TypefaceCompat.java
M core/core/src/main/java/androidx/core/graphics/WeightTypefaceApi26.java
M core/core/src/main/java/androidx/core/graphics/WeightTypefaceApi14.java

<https://android-review.googlesource.com/2048027>

ap...@google.com <ap...@google.com> #9

Jul 2, 2022 07:24AM

Project: platform/frameworks/support
Branch: androidx-main

commit 553679730518b7cf295642500603b4adb90191d3
Author: Eugen Pechanec <e.pechanec@gmail.com>
Date: Sun Mar 28 13:56:43 2021

Backport Typeface.create(Typeface, int weight, boolean italic)

API 28+ uses public API.

API 26-27 uses existing private JNI method.

API 21-25 does this in two steps, first create Typeface with matching italics, then adjust weight, both using existing private JNI methods.

API < 19 leverages the fact that the only place a Typeface family with multiple weights could come from is TypefaceCompat.

All implementations use a small cache that mimics the one on API 28. Fallback to API < 19 implementation, if new private API isn't available, or return unaltered input, if that fails.

Typeface#isBold works on API 26+ (same as public API) so that any font with *requested* weight 600+ is bold. This is not possible to mimic on API 21+ without diverging from intended font weight resolution path. On API < 21 (loading font from temp file) setting style is impossible.

Relnote: Backported `Typeface#create(Typeface, int, boolean)` which allows creating typeface with specific weight from a font family

Test: Run TypefaceCompatTest#testTypeFaceCompatCreateWithExactStyle

BUG: 145311058

Change-Id: I342dc928edd1e8e5dbc018ca5375cceb047425e5

M core/core/src/main/java/androidx/core/graphics/TypefaceCompatBaselImpl.java
A core/core/src/androidTest/res/font/weighttestfont.xml
M core/core/api/public_plus_experimental_current.txt
M core/core/src/main/java/androidx/core/graphics/TypefaceCompatApi24Impl.java
M core/core/api/current.txt
A core/core/src/main/java/androidx/core/graphics/WeightTypefaceApi26.java
M core/core/api/restricted_current.txt
M core/core/src/androidTest/java/androidx/core/graphics/TypefaceCompatTest.java
A core/core/src/main/java/androidx/core/graphics/WeightTypefaceApi21.java
M core/core/src/main/java/androidx/core/graphics/TypefaceCompatApi28Impl.java
M core/core/src/main/java/androidx/core/graphics/TypefaceCompatApi21Impl.java
M core/core/src/main/java/androidx/core/graphics/TypefaceCompat.java
M core/core/src/main/java/androidx/core/graphics/TypefaceCompatApi26Impl.java
M core/core/src/main/java/androidx/core/graphics/TypefaceCompatApi29Impl.java
A core/core/src/main/java/androidx/core/graphics/WeightTypefaceApi14.java

<https://android-review.googlesource.com/1654950>



e....@gmail.com <e....@gmail.com> #10

Sep 7, 2023 09:56PM

This can be closed now