

The problem, however, is that BreakConnections first erase the handler before using it in the next line. As the handler is now only kept alive by |active_source_handlers_|, this deletes the handler and causes UaF.

1.

https://source.chromium.org/chromium/src/+/71825939c432c440fa53ef4016372076e2c6114a:third_party/blink/renderer/modules/webaudio/offline_audio_context.cc;l=413;drc=b892cf58e162a8f66cd76d7472f129fe0fb6a7d1;bpv=1;bpt=1?originalUrl=https:%2F%2Fcs.chromium.org%2F

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https://source.chromium.org/chromium/chromium/src/+/71825939c432c440fa53ef4016372076e2c6114a:third_party/blink/renderer/modules/webaudio/constant_source_nodecc;=117;bpv=1;bpt=1?originalUrl=https:%2F%2Fcs.chromium.org%2F

3.

https://source.chromium.org/chromium/chromium/src/+/71825939c432c440fa53ef4016372076e2c6114a:third_party/blink/renderer/modules/webaudio/audio_scheduled_source_node.cci=242:bbv=1:bbt=1?originalUtl=https://schromium.org

4.

https://source.chromium.org/chromium/src/+/71825939c432c440fa53ef4016372076e2c6114a:third_party/blink/renderer/modules/webaudio/audio_scheduled_source_node.cc;=243;bpv=1;bpt=1?originalUrl=https://schromium.org%2F

https://source.chromium.org/chromium/chromium/src/+/71825939c432c440fa53ef4016372076e2c6114a:third_party/blink/renderer/modules/webaudio/audio_scheduled_source_node.cc;l=199;drc=b892cf58e162a8f66cd76d7472f129fe0fb6a7d1;bpv=1;bpt=1?originalUrl=https:%2F%2Fcs.chromium.org%2F

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https://source.chromium.org/chromium/src/+/71825939c432c440fa53ef4016372076e2c6114a:third_party/blink/renderer/modules/webaudio/offline_audio_context.cc=426cfdrc=b892cf58e162e8f66cd76d7472f129fe0fb6a7d11bov=11bot=12original Id=btths:%/F%/Fcs.chromium.org%/F

VERSION

Chromium version: master branch build e577636 Also tested on release google Chrome 80.3987.122 Operating System: linux 18.04

REPRODUCTION CASE

To reproduce the issue, run chromium with the expose-gc flag (this is just a convenient way to trigger gc and is not needed for the vulnerability)

./out/asan/chrome --js-flags=-expose-gc --user-data-dir=/tmp

Then open the attached finished.html on localhost. It should produce an asan report like the one attached

CREDIT INFORMATION

Reporter credit: Man Yue Mo of Github Security Lab

asan

22.5 KB View Download

finished.html

428 bytes View Download

Comment 1 by ClusterFuzz on Mon, Mar 2, 2020, 10:56 AM EST Project Member

 $Cluster Fuzz is analyzing your test case. Developers can follow the progress at \ https://clusterfuzz.com/test case? key=6197773337690112.$

Comment 2 by ClusterFuzz on Mon, Mar 2, 2020, 10:57 AM EST Project Member

Comment 3 by ClusterFuzz on Mon, Mar 2, 2020, 10:57 AM EST Project Member

Comment 4 by ClusterFuzz on Mon, Mar 2, 2020, 11:37 AM EST Project Member

Testcase 6197773337690112 failed to reproduce the crash. Please inspect the program output at https://clusterfuzz.com/testcase?key=6197773337690112.

Comment 5 by vakh@chromium.org on Mon, Mar 2, 2020, 1:43 PM EST Project Member

Status: Assigned (was: Unconfirmed)
Owner: rtoy@chromium.org
Cc: hongchan@chromium.org

Labels: Security_Severity-High Security_Impact-Stable OS-Android OS-Chrome OS-Linux OS-Mac OS-Windows

Components: Blink>WebAudio

Working on reproducing this locally.

Comment 6 by rtoy@chromium.org on Mon, Mar 2, 2020, 2:26 PM EST Project Member

Status: Started (was: Assigned)

Comment 7 by rtoy@chromium.org on Mon, Mar 2, 2020, 5:16 PM EST Project Member

The original test case reproduces for me with a local asan build. It looks like clusterfuzz can also reproduce this

Thanks for the nice test case and summary of the problem. Fix on the way...

Comment 8 by bugdroid on Mon, Mar 2, 2020, 6:24 PM EST Project Member

The following revision refers to this bug:

https://chromium.googlesource.com/chromium/src.git/+/3ac8883297e17ea27828bac2bcf39fa5e009f384

commit 3ac8883297e17ea27828bac2bcf39fa5e009f384

Author: Raymond Toy <rtoy@chromium.org>

Date: Mon Mar 02 23:22:26 2020

Break connections before removing from active_source_handlers_.

In DeferredTaskHandler::BreakConnections, we want to remove finished handlers and break the connection. when a finished handler is removed from active_source_handlers__, it might be deleted, but we were still using that to create the connection. Instead, break the connection first and then remove it.

Manually ran test from the bug and it passes with this change. Without this, it failed right away.

Rug: 1057503

Change-Id: I3c9346a6842f412100d608876adb268befb80470

Reviewed-on: https://chromium-review.googlesource.com/c/chromium/src/+/2083436

Commit-Queue: Raymond Toy <rtoy@chromium.org>
Reviewed-by: Hongchan Choi <hongchan@chromium.org>
Cr-Commit-Position: refs/heads/master@{#746142}

[modify] https://crrev.com/3ac8883297e17ea27828bac2bcf39fa5e009f384/third_party/blink/renderer/modules/webaudio/deferred_task_handler.cc

Comment 9 by ClusterFuzz on Mon, Mar 2, 2020, 9:05 PM EST Project Member
Detailed Report: https://clusterfuzz.com/testcase?key=5634101410332672

Fuzzer:

Job Type: linux_asan_chrome_v8_arm

Platform Id: linux

Crash Type: Heap-use-after-free READ 4 Crash Address: 0xf314c248 Crash State:

blink::AudioHandler::BreakConnectionWithLock blink::DeferredTaskHandler::BreakConnections blink::OfflineAudioContext::HandlePostRenderTasks

Sanitizer: address (ASAN)

Recommended Security Severity: High

Regressed: https://clusterfuzz.com/revisions?job=linux_asan_chrome_v8_arm&range=635161:635170

Reproducer Testcase: https://clusterfuzz.com/download?testcase_id=5634101410332672

Additional requirements: Requires HTTP

The reproduce tool requires a ClusterFuzz source checkout. To prepare one, run:

git clone https://github.com/google/clusterfuzz && cd clusterfuzz && git checkout tags/reproduce-tool-stable

To reproduce this issue, run:

/reproduce.sh -t https://clusterfuzz.com/testcase-detail/5634101410332672 -b /path/to/build

Please use the GN arguments provided in this report when building the binary. If you have any feedback on reproducing test cases, let us know at https://forms.gle/Yh3qCYFveHi6E5iz5 so we can improve.

Comment 10 by ClusterFuzz on Mon, Mar 2, 2020, 9:08 PM EST Project Member

Detailed Report: https://clusterfuzz.com/testcase?key=5725722994868224

Fuzzer:

Job Type: linux_asan_chrome_v8_arm

Platform Id: linux

Crash Type: Heap-use-after-free READ 4

Crash Address: 0xf314c608

Crash State:

blink::AudioHandler::BreakConnectionWithLock blink::DeferredTaskHandler::BreakConnections blink::OfflineAudioContext::HandlePostRenderTasks

Sanitizer: address (ASAN)

Recommended Security Severity: High

Regressed: https://clusterfuzz.com/revisions?job=linux_asan_chrome_v8_arm&range=635161:635170

Reproducer Testcase: https://clusterfuzz.com/download?testcase_id=5725722994868224

Additional requirements: Requires HTTP

The reproduce tool requires a ClusterFuzz source checkout. To prepare one, run:

 $git\ clone\ https://github.com/google/clusterfuzz\ \&\&\ cd\ clusterfuzz\ \&\&\ git\ checkout\ tags/reproduce-tool-stable$

To reproduce this issue, run:

./reproduce.sh -t https://clusterfuzz.com/testcase-detail/5725722994868224 -b /path/to/build

Please use the GN arguments provided in this report when building the binary. If you have any feedback on reproducing test cases, let us know at https://forms.gle/Yh3qCYFveHj6E5jz5 so we can improve.

Comment 11 by rtoy@chromium.org on Tue, Mar 3, 2020, 12:08 PM EST Project Member

I think it's fixed, but waiting for clusterfuzz to verify.

Comment 12 by sheriffbot on Tue, Mar 3, 2020, 12:53 PM EST Project Member

Labels: Target-80 M-80

Setting milestone and target because of Security_Impact=Stable and high severity.

For more details visit https://www.chromium.org/issue-tracking/autotriage - Your friendly Sheriffbot

Comment 13 by sheriffbot on Tue, Mar 3, 2020, 1:33 PM EST Project Member

Labels: Pri-1

Setting Pri-1 to match security severity High. If this is incorrect, please reset the priority. Sheriffbot won't make this change again.

For more details visit https://www.chromium.org/issue-tracking/autotriage - Your friendly Sheriffbot

Comment 14 by rtoy@chromium.org on Tue, Mar 3, 2020, 7:04 PM EST Project Member

Status: Verified (was: Started)

Both https://clusterfuzz.com/testcase-detail/5725722994868224 and https://clusterfuzz.com/testcase-detail/5634101410332672 say the issue is fixed.

Closing as verified

I'll let it bake for a day or two before requesting merges.

Comment 15 by rtoy@chromium.org on Wed, Mar 4, 2020, 10:44 AM EST Project Member

Labels: Merge-Request-81

Comment 16 by sheriffbot on Wed, Mar 4, 2020, 10:47 AM EST Project Mem

Labels: -Merge-Request-81 Merge-Review-81 Hotlist-Merge-Review-81

This bug requires manual review: We are only 12 days from stable.

Before a merge request will be considered, the following information is required to be added to this bug:

- 1. Does your merge fit within the Merge Decision Guidelines?
- Chrome: https://chromium.googlesource.com/chromium/src.git/+/master/docs/process/merge_request.md#when-to-request-a-merge
- Chrome OS: https://goto.google.com/cros-release-branch-merge-guidelines
- 2. Links to the CLs you are requesting to merge.
- 3. Has the change landed and been verified on master/ToT?
- 4. Why are these changes required in this milestone after branch?
- 5. Is this a new feature?
- 6. If it is a new feature, is it behind a flag using finch?

Please contact the milestone owner if you have questions.

Owners: benmason@(Android), bindusuvarna@(iOS), geohsu@(ChromeOS), pbommana@(Desktop)

For more details visit https://www.chromium.org/issue-tracking/autotriage - Your friendly Sheriffbol

Comment 17 by sheriffbot on Wed, Mar 4, 2020, 2:03 PM EST Project Me

Labels: -Restrict-View-SecurityTeam Restrict-View-SecurityNotify

Comment 18 by pbommana@google.com on Thu, Mar 5, 2020, 1:18 PM EST Project Member

Cc: adetaylor@chromium.org

+adetaylor@(Security TPM) for insights

Comment 19 by pbommana@google.com on Thu, Mar 5, 2020, 1:18 PM EST Project Member

Cc: pbomm...@chromium.org

Comment 20 by adetaylor@chromium.org on Thu, Mar 5, 2020, 1:58 PM EST Project Member

Labels: -Merge-Review-81 Merge-Approved-81

I am in favor of merging to M81, yes. This looks like a simple and low-risk fix. I'm going to approve merge to M81 (branch 4044) even before we get the answers to #c16, but please don't merge if there are any concerns I haven't spotted. Also, please check for unexpected canary trouble before merging.

Comment 21 by rtoy@chromium.org on Thu, Mar 5, 2020, 2:16 PM EST Project Member

crash.corp doesn't seem to show any crashes in M81 or later, but they weren't super-common to begin with. Clusterfuzz has verified that the UaF is gone. (Don't know why the two test cases didn't report this was fixed, but the webpage says it is.)

Comment 22 by bugdroid on Thu, Mar 5, 2020, 4:07 PM EST Project Member

Labels: -merge-approved-81 merge-merged-81 merge-merged-4044

The following revision refers to this bug:

https://chromium.googlesource.com/chromium/src.git/+/765cc3c01c8f68317cdfd610981f1182404f718e

commit 765cc3c01c8f68317cdfd610981f1182404f718e

Author: Raymond Toy <rtoy@chron

Date: Thu Mar 05 21:06:37 2020

Break connections before removing from active_source_handlers_.

In DeferredTaskHandler::BreakConnections, we want to remove finished handlers and break the connection. when a finished handler is removed from active_source_handlers_, it might be deleted, but we were still using that to create the connection. Instead, break the connection first and then remove it.

Manually ran test from the bug and it passes with this change. Without

this, it failed right away.

(cherry picked from commit 3ac8883297e17ea27828bac2bcf39fa5e009f384)

Change-Id: I3c9346a6842f412100d608876adb268befb80470

Reviewed-on: https://chromiu /chromium/src/+/2083436

Commit-Queue: Raymond Toy <rtoy@chromium.org>

Reviewed-by: Hongchan Choi <hongchan@chromium.org> Cr-Original-Commit-Position: refs/heads/master@{#746142}

ce.com/c/chromium/src/+/2090296 Reviewed-on: https://chromium-review.googlesou

Reviewed-by: Raymond Toy <rtoy@chromium.org>
Cr-Commit-Position: refs/branch-heads/4044@{#650}

Cr-Branched-From: a6d9daf149a473ceea37f629c41d4527bf2055bd-refs/heads/master@{#737173}

 $\textbf{[modify] https://crrev.com/765cc3c01c8f68317cdfd610981f1182404f718e/third_party/blink/renderer/modules/webaudio/deferred_task_handler.cc201csf68317cdfd610981f1182404f718e/third_party/blink/renderer/modules/webaudio/deferred_task_handler.cc201csf68317cdfd610981f1182404f718e/third_party/blink/renderer/modules/webaudio/deferred_task_handler.cc201csf68317cdfd610981f1182404f718e/third_party/blink/renderer/modules/webaudio/deferred_task_handler.cc201csf68317cdfd610981f1182404f718e/third_party/blink/renderer/modules/webaudio/deferred_task_handler.cc201csf68317cdfd610981f1182404f718e/third_party/blink/renderer/modules/webaudio/deferred_task_handler.cc201csf68317cdfd610981f1182404f718e/third_party/blink/renderer/modules/webaudio/deferred_task_handler.cc201csf68317cdfd610981f182404f718e/third_party/blink/renderer/modules/webaudio/deferred_task_handler.cc201csf68317cdfd610981f182404f718e/third_party/blink/renderer/modules/webaudio/deferred_task_handler.cc201csf68317cdfd610981f182404f718e/third_party/blink/renderer/modules/webaudio/deferred_task_handler.cc201csf68317cdfd610981f182404f718e/third_party/blink/renderer/modules/webaudio/deferred_task_handler.cc201csf68317cdfd610981f182404f718e/third_party/blink/renderer/modules/webaudio/deferred_task_handler.cc201csf68317cdfd610981f182404f718e/third_party/blink/renderer/modules/webaudio/deferred_task_handler.cc201csf68317cdfd610981f182404f718e/third_party/blink/renderer/modules/webaudio/deferred_task_handler/modules/webaudio/deferred_task_handler/modules/webaudio/deferred_task_handler/modules/webaudio/deferred_task_handler/modules/webaudio/deferred_task_handler/modules/webaudio/deferred_task_handler/modules/webaudio/deferred_task_handler/modules/webaudio/deferred_task_handler/modules/webaudio/deferred_task_handler/modules/webaudio/deferred_task_handler/modules/webaudio/deferred_task_handler/modules/webaudio/deferred_task_handler/modules/webaudio/deferred_task_handler/modules/webaudio/deferred_task_handler/modules/webaudio/deferred_task_handler/modules/webaudio/deferred_task$

Comment 23 by rtoy@chromium.org on Fri, Mar 6, 2020, 3:15 PM EST Project Member

Given that the M81 branch cut is very soon, I'm going to assume that a merge to M80 is not warranted.

Comment 24 by adetaylor@chromium.org on Fri, Mar 6, 2020, 3:33 PM EST Project Member

Agreed.

Comment 25 by mmoroz@google.com on Tue, Mar 10, 2020, 1:04 PM EDT Project Member

Labels: VulnerabilityAnalysis-Requested

rtoy@, thank you for fixing this issue. Chrome Security team needs your knowledge to prevent that whole class of bugs from happening elsewhere. We would greatly appreciate if you could tell us more about the issue by filling out the following form: https://forms.gle/VWKDUv9a8GXCCRWm7

Comment 26 by adetaylor@google.com on Fri, Mar 13, 2020, 1:44 PM EDT Project Member

Labels: Release-0-M81

Comment 27 by adetaylor@chromium.org on Fri, Mar 13, 2020, 2:30 PM EDT Project Member

Labels: CVE-2020-6428 CVE description-missing

Labels: merge-merged-3987 137

The following revision refers to this bug:

https://chromium.googlesource.com/chromium/src.git/+/a5f00911c397b8b3d9234ddf5366d6ef1024e51d14e51d14e51d

commit a5f00911c397b8b3d9234ddf5366d6ef1024e51d

Author: Raymond Toy <rtoy@chromium.org>

Date: Mon Mar 16 05:58:01 2020

Break connections before removing from active source handlers

In DeferredTaskHandler::BreakConnections, we want to remove finished handlers and break the connection. when a finished handler is removed from active_source_handlers_, it might be deleted, but we were still using that to create the connection. Instead, break the connection first and then remove it.

Manually ran test from the bug and it passes with this change. Without this, it failed right away.

(cherry picked from commit 3ac8883297e17ea27828bac2bcf39fa5e009f384)

Change-Id: I3c9346a6842f412100d608876adb268befb80470

view.googlesource.com/c/chromium/src/+/2083436 Reviewed-on: https://chromium-re

Commit-Queue: Raymond Toy <rtoy@chromium.org>

Reviewed-by: Hongchan Choi hongchan@chromium.org Cr-Original-Commit-Position: refs/heads/master@{#746142}

/chromium/src/+/2104827

Reviewed-by: Krishna Govind <govind@chromium.org>

Reviewed-by: Prudhvi Kumar Bommana pbommana@google.com>

Cr-Commit-Position: refs/branch-heads/3987_137@{#6}

Cr-Branched-From: 55c16ce255e7a7feca588abeb4f082026b35e1ef-refs/branch-heads/3987@{#989} Cr-Branched-From: c4e8da9871cc266be74481e212f3a5252972509d-refs/heads/master@{#722274}

Comment 29 by rtoy@chromium.org on Mon, Mar 16, 2020, 1:51 PM EDT Project Member

If you are going to merge this bug fix to M80, you should also probably get the fix in iesus 1050686. It's closely related, and this fix didn't fix all the cases. Iesus

Comment 30 by gov...@chromium.org on Mon, Mar 16, 2020, 8:42 PM EDT Project Member

Labels: Merge-Approved-80

Approving merge to M80 branch 3987, please merge ASAP. Thank you.

Comment 31 by bugdroid on Mon, Mar 16, 2020, 8:56 PM EDT

Labels: -merge-approved-80 merge-merged-3987 merge-merged-80

The following revision refers to this bug:

https://chromium.googlesource.com/chromium/src.git/+/ee14ad040d6acd683eaa1bbb5acb8e979d1b9560

commit ee14ad040d6acd683eaa1bbb5acb8e979d1b9560

Author: Raymond Toy <rtoy@chromium.org>

Date: Tue Mar 17 00:54:20 2020

Break connections before removing from active_source_handlers_.

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Change-Id: I3c9346a6842f412100d608876adb268befb80470

Reviewed-on: https://chromium-review.googlesource.com

Commit-Queue: Raymond Toy <rtov@chromium.org> Reviewed-by: Hongchan Choi <hongchan@chromium.org>

Cr-Commit-Position: refs/heads/master@{#746142}

(cherry picked from commit 3ac8883297e17ea27828bac2bcf39fa5e009f384)

TBR=rtoy@chromium.org

Change-Id: I3c9346a6842f412100d608876adb268befb80470

Reviewed-on: https://chromium-review.googlesource.com/c/chromium/src/+/2106771

Reviewed-by: Krishna Govind <govind@chromium.org> Commit-Queue: Krishna Govind <govind@chromium.org>

Cr-Commit-Position: refs/branch-heads/3987@{#1007}

Cr-Branched-From: c4e8da9871cc266be74481e212f3a5252972509d-refs/heads/master@{#722274}

 $[modify] \ https://crrev.com/ee14ad040d6acd683eaa1bbb5acb8e979d1b9560/third_party/blink/renderer/modules/webaudio/deferred_task_handler.cc$

Comment 32 by adetaylor@google.com on Tue, Mar 17, 2020, 11:17 AM EDT Project Member

Labels: -Release-0-M81 Release-5-M80

Comment 33 by gov...@chromium.org on Tue, Mar 17, 2020, 4:33 PM EDT Project Member

Cc: prashanthpola@chromium.org

Comment 34 by adetaylor@chromium.org on Thu, Mar 19, 2020, 6:30 PM EDT Project Member

Labels: -CVE_description-missing CVE_description-submitted

Comment 35 by adetaylor@google.com on Wed, Mar 25, 2020, 3:31 PM EDT Project Member

Cc: achuith@chromium.org

Comment 36 by sheriffbot on Wed, Jun 10, 2020, 2:59 PM EDT Project Member

Labels: -Restrict-View-SecurityNotify allpublic

This bug has been closed for more than 14 weeks. Removing security view restrictions.

For more details visit https://www.chromium.org/issue-tracking/autotriage - Your friendly Sheriffbot

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