Δ	Starred	by	3	users
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jamescook@chromium.org

simmonsjosh@google.com rzanoni@google.com lucmult@chromium.org corising@chromium.org collinbaker@chromium.org Majewski@chromium.org jinro...@chromium.org

Fixed (Closed)

Platform>Apps>FileManager

Jul 29, 2022

Chrome

1

Bug-Security

Status:

Owner:

CC:

Components:

Modified:

Backlog-Rank:

Editors:

EstimatedDays:

NextAction:

OS:

Pri:

Type:

M-100

reward-3000

Security_Impact-Stable Security_Severity-Medium

Arch-x86_64 allpublic

reward-inprocess

Via-Wizard-Security

CVE_description-submitted external_security_report

Target-100

FoundIn-99

FoundIn-101

merge-merged-4664

LTS-Merge-Merged-96

merge-merged-4896

merge-merged-100

Release-0-M100

CVE-2022-1141

Issue 1303253: use after free in SelectFileDialogExtension::ExtensionTerminated

Reported by wxhu...@gmail.com on Sat, Mar 5, 2022, 3:57 AM EST



UserAgent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/99.0.4844.51 Safari/537.36

```
Steps to reproduce the problem:
1.in this function SelectFileDialogExtension::ExtensionTerminated
 std::string extension id = dialog->host()->extension()->id();
// Reload the extension after a bit; the extension may not have been unloaded
// yet. We don't want to try to reload the extension only to have the Unload
// code execute after us and re-unload the extension.
//
// TODO(rkc): This is ugly. The ideal solution is that we shouldn't need to
// reload the extension at all - when we try to open the extension the next
// time, the extension subsystem would automatically reload it for us. At
// this time though this is broken because of some faulty wiring in
// extensions::ProcessManager::CreateViewHost. Once that is fixed, remove
// this.
 if (profile ) {
  base::ThreadTaskRunnerHandle::Get()->PostTask(
     FROM_HERE,
    base::BindOnce(
       &extensions::ExtensionService::ReloadExtension,
       base::Unretained(extensions::ExtensionSystem::Get(profile_)
                     ->extension service()), // the extension service will destroy after the profile destroy
       extension_id));
}
 dialog->GetWidget()->Close();
2.so it will cause uaf when lots of select file dialog extension terminated to create lots of thread callback
3.then we can sign out and login as anathor user to cause profile destoryed. -> extension_service destory -> uaf occur
4. the uaf is hard to trigger and needs a lot of ui interations, so maybe you can set security-low or medium
5. I don't have poc, because when I try to sign out linux-chromeos, it will exit and it will not execute callback.But I think in real
chrome, it may occur in a hard way.
What is the expected behavior?
What went wrong?
above all
Did this work before? N/A
```

Chrome version: 99.0.4844.51 Channel: stable

OS Version: 10.0

Comment 1 by sheriffbot on Sat, Mar 5, 2022, 4:02 AM EST Project Member

Labels: external security report

Comment 2 by wxhu...@gmail.com on Mon, Mar 7, 2022, 9:18 PM EST

since the issue 1299243 was set to won't fix, maybe this bug also should be set won't-fix

Comment 3 by bookholt@chromium.org on Tue, Mar 8, 2022, 12:57 PM EST Project Member

Status: Assigned (was: Unconfirmed) **Owner:** connily@chromium.org

Cc: collinbaker@chromium.org corising@chromium.org

Labels: Security Severity-Medium FoundIn-99 OS-Chrome OS-Fuchsia OS-Linux OS-Mac

Components: Internals>Views UI>Browser>Selection

Thanks for the report! Triggering this bug in practice seems tricky because, as you noted, it requires a user to perform a potentially large number of carefully structured interactions with the user interface.

Assigning medium severity due to potential browser UAF (typically high severity) tempered by the difficulty of practical exploitation.

This is particularly old code with comments from over a decade ago that document the undesirable behavior that contributed to this bug, so it would benefit from a fresh look by its current maintainers to see if earlier constraints have been resolved. @connily if you're not the right person to review, could you please redirect as you see fit?

Comment 4 by sheriffbot on Tue, Mar 8, 2022, 1:13 PM EST Project Member

Labels: Security Impact-Stable

Comment 5 by sheriffbot on Tue, Mar 8, 2022, 1:18 PM EST Project Member

Labels: -Pri-2 Pri-1

Setting Pri-1 to match security severity Medium. 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 6 by connily@chromium.org on Tue, Mar 8, 2022, 6:44 PM EST Project Member

Owner: jamescook@chromium.org

This code looks ChromeOS-specific, but I'm not sure because it's unfamiliar to me. James are you still familiar with this? Do you know who might be the best owner here?

Comment 7 by jamescook@chromium.org on Tue, Mar 8, 2022, 8:50 PM EST Project Member

Cc: simmonsjosh@google.com

Labels: -OS-Linux -OS-Windows -OS-Mac -OS-Fuchsia

Components: -Internals>Views -UI>Browser>Selection Platform>Apps>FileManager

I haven't seen this code for many years...:-)

Is the concern about the base::Unretained()? That the ExtensionService object might be destroyed before the task runs? If so, we might be able to fix this with a WeakPtr -- it looks like ExtensionService::AsWeakPtr might be helpful:

nttps://source.cnromium.org/cnromium/cnromium/src/+/main:cnrome/prowser/extensions/extension_service.n;arc=459aba1 945dd88c8dd98c6fbfd617f84e62eba99;l=414

As you note I think this might be hard to repro. You would have to force extension termination for the built-in file manager app extension, and force the main thread to be busy, and convince the user to sign out during this process. AFAIK there's no way to force a profile to be destroyed on ChromeOS without signout.

Reducing affected OS to ChromeOS, since this code doesn't run on other platforms.

https://source.chromium.org/chromium/chromium/src/+/main:chrome/browser/ui/BUILD.gn;drc=459dba1945dd88c8dd98c6fbfd617f84e62eba99;l=2431

+simmonsjosh as FYI for file manager team

Comment 8 by simmonsjosh@google.com on Wed, Mar 9, 2022, 2:23 AM EST Project Member

Cc: majewski@chromium.org lucmult@chromium.org

Adding majewski@ (who worked on a slightly similar UAF in this class recently) and lucmult@ so they can share any ideas they have.

Comment 9 by sheriffbot on Wed, Mar 9, 2022, 12:52 PM EST Project Member

Labels: M-100 Target-100

Setting milestone and target because of medium severity.

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

Comment 10 by jamescook@chromium.org on Wed, Mar 9, 2022, 4:41 PM EST Project Member

Status: Started (was: Assigned)

I think we can delete this code. I'll write a CL.

AFAICT, SelectFileDialogExtension::ExtensionTerminated() is only called when the FilesSWA feature is disabled. (FilesSWA defaults to disabled, but is being enabled via Finch.). IIUC, unlike legacy Chrome Apps, SWAs do not use extensions code, so I think this is expected.

With the code deleted, if I create a file open dialog, then kill its renderer, the dialog closes. I can then reopen it with Ctrl-O and everything works properly. I suspect this code was a workaround for an issue in the extensions system that has been fixed.

Comment 11 by Git Watcher on Wed, Mar 9, 2022, 7:55 PM EST

Project Member

The following revision refers to this bug:

https://chromium.googlesource.com/chromium/src/+/214db6b05f61309e14eab393755ca3ab47857012

commit 214db6b05f61309e14eab393755ca3ab47857012

Author: James Cook <jamescook@chromium.org>

Date: Thu Mar 10 00:54:05 2022

chromeos: Remove manual extension reload from SelectFileDialogExtension

This code was added in https://codereview.chromium.org/9360005 as a workaround for some misbehavior in the extensions system for crashed component extensions. The code is no longer necessary. Deleting it avoids a potential use-after-free (the ExtensionSystem might be

dalated aliabthy bafara the profile that assess it\

deleted slightly before the profile that owns it).

I manually tested after deleting the code:

- 1. Open file manager
- 2. Open a browser, then press Ctrl-O to create the open dialog
- 3. Kill the files process in task manager
- The dialog closes
- 4. Press Ctrl-O again
- The dialog opens again and functions normally

Bug: 1303253

Change-Id: lbf94afcc2b2412704d8dcbe65b93a5595e6e55cc

Reviewed-on: https://chromium-review.googlesource.com/c/chromium/src/+/3514778

Reviewed-by: Bo Majewski <majewski@chromium.org>
Commit-Queue: James Cook <jamescook@chromium.org>

Cr-Commit-Position: refs/heads/main@{#979543}

[modify]

https://crrev.com/214db6b05f61309e14eab393755ca3ab47857012/chrome/browser/ui/views/select_file_dialog_extension.cc

Comment 12 by jamescook@chromium.org on Wed, Mar 9, 2022, 8:35 PM EST Project Member

Security team, is there anything I need to do here other than mark Fixed?

Comment 13 by bookholt@chromium.org on Thu, Mar 10, 2022, 12:18 PM EST Project Member

Status: Fixed (was: Started)

Huge thanks for the fast work James! No further action is necessary now, but the release managers may be in touch if they need help merging your CL into the next release branch(es).

Comment 14 by sheriffbot on Thu, Mar 10, 2022, 12:42 PM EST Project Member

Labels: reward-topanel

Comment 15 by sheriffbot on Thu, Mar 10, 2022, 1:41 PM EST Project Member

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

Comment 16 by sheriffbot on Thu, Mar 10, 2022, 2:12 PM EST Project Member

Labels: Merge-Request-100

Requesting merge to beta M100 because latest trunk commit (979543) appears to be after beta branch point (972766).

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

Comment 17 by dgagnon@google.com on Thu, Mar 10, 2022, 6:53 PM EST Project Member

Labels: -Merge-Request-100 Merge-Review-100 Hotlist-Merge-Review

Please answer the following questions so that we can safely process your merge request:

- 1. Why does your merge fit within the merge criteria for these milestones?
- Chrome Browser: https://chromiumdash.appspot.com/branches
- Chrome OS: https://goto.google.com/cros-release-branch-merge-guidelines
- 2. What changes specifically would you like to merge? Please link to Gerrit.
- O Have the changes been released and tested an espanio

- 3. Have the changes been released and tested on canary?
- 4. Is this a new feature? If yes, is it behind a Finch flag and are experiments active in any release channels?
- 5. [Chrome OS only]: Was the change reviewed and approved by the Eng Prod Representative? https://goto.google.com/cros-engprodcomponents
- 6. If this merge addresses a major issue in the stable channel, does it require manual verification by the test team? If so, please describe required testing.

Comment 18 by jamescook@chromium.org on Thu, Mar 10, 2022, 7:23 PM EST Project Member

- 1. This is a security fix
- 2. https://chromium-review.googlesource.com/c/chromium/src/+/3514778
- 3. No. Sheriffbot requested merge for this one, not me. The risk is low, though, this eliminates some code that only ran if an extension crashed, which is uncommon. I have manually tested on device. If you want me to wait for a canary release, let me know.
- 4. No.
- 5. Not yet.

Comment 19 by dgagnon@google.com on Tue, Mar 15, 2022, 7:02 PM EDT Project Member

Cc: jinro...@chromium.org

It looks like this landed on 101.0.4937.0, can you please verify on canary?

+jinrongwu@ for engprod review - see comment #17 question #5.

Comment 20 by jamescook@chromium.org on Tue, Mar 15, 2022, 7:50 PM EDT Project Member

I verified on canary, 101.0.4937.0 / 14574.0.0 on eve

Comment 21 by bookholt@chromium.org on Tue, Mar 15, 2022, 7:51 PM EDT Project Member

Labels: FoundIn-101

Comment 22 by dgagnon@google.com on Wed, Mar 16, 2022, 7:32 PM EDT Project Member

Labels: -Hotlist-Merge-Review -Merge-Review-100 Merge-Approved-100

Merge approved for M100

Comment 23 by Git Watcher on Thu, Mar 17, 2022, 9:14 PM EDT Project Member

Labels: -merge-approved-100 merge-merged-4896 merge-merged-100

The following revision refers to this bug:

https://chromium.googlesource.com/chromium/src/+/98670c1e8709c9da41bedf10e3dab3ec32dd44bd

commit 98670c1e8709c9da41bedf10e3dab3ec32dd44bd

Author: James Cook <jamescook@chromium.org>

Date: Fri Mar 18 01:12:58 2022

M100: chromeos: Remove manual extension reload from SelectFileDialogExtension

This code was added in https://codereview.chromium.org/9360005 as a workaround for some misbehavior in the extensions system for crashed component extensions. The code is no longer necessary. Deleting it

avoids a potential use-after-free (the ExtensionSystem might be deleted slightly before the profile that owns it).

I manually tested after deleting the code:

- 1. Open file manager
- 2. Open a browser, then press Ctrl-O to create the open dialog
- 3. Kill the files process in task manager
- The dialog closes
- 4. Press Ctrl-O again
- The dialog opens again and functions normally

(cherry picked from commit 214db6b05f61309e14eab393755ca3ab47857012)

Bug: 1303253

Change-Id: lbf94afcc2b2412704d8dcbe65b93a5595e6e55cc

Reviewed-on: https://chromium-review.googlesource.com/c/chromium/src/+/3514778

Reviewed-by: Bo Majewski <majewski@chromium.org>
Commit-Queue: James Cook <jamescook@chromium.org>
Cr-Original-Commit-Position: refs/heads/main@{#979543}

Reviewed-on: https://chromium-review.googlesource.com/c/chromium/src/+/3531083

Auto-Submit: James Cook <jamescook@chromium.org> Cr-Commit-Position: refs/branch-heads/4896@{#654}

Cr-Branched-From: 1f63ff4bc27570761b35ffbc7f938f6586f7bee8-refs/heads/main@{#972766}

[modify]

https://crrev.com/98670c1e8709c9da41bedf10e3dab3ec32dd44bd/chrome/browser/ui/views/select_file_dialog_extension.cc

Comment 24 by sheriffbot on Thu, Mar 17, 2022, 9:19 PM EDT Project Member

Labels: LTS-Merge-Candidate

LTS Milestone M96

This issue has been flagged as a merge candidate for Chrome OS' LTS channel. If selected, our merge team will handle any additional merges. To help us determine if this issue requires a merge to LTS, please answer this short questionnaire:

- 1. Was this issue a regression for the milestone it was found in?
- 2. Is this issue related to a change or feature merged after the latest LTS Milestone?

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

Comment 25 by jamescook@chromium.org on Fri, Mar 18, 2022, 12:40 PM EDT Project Member

- 1. Not a regression in the milestone it was found in.
- 2. Not related to a change merged to LTS

Comment 26 by rzanoni@google.com on Mon, Mar 21, 2022, 5:21 AM EDT Project Member

Labels: LTS-Evaluating-96

Comment 27 by rzanoni@google.com on Mon, Mar 21, 2022, 11:04 AM EDT Project Member

Labels: -LTS-Evaluating-96 LTS-Merge-Request-96

Comment 28 by rzanoni@google.com on Mon, Mar 21, 2022, 11:08 AM EDT Project Member

Cc: rzanoni@google.com

Comment 29 by sheriffbot on Mon, Mar 21, 2022, 2:52 PM EDT Project Member

Labels: -LTS-Merge-Request-96 LTS-Merge-Review-96

This issue requires additional review before it can be merged to the LTS channel. Please answer the following questions to help us evaluate this merge:

- 1. Number of CLs needed for this fix and links to them.
- 2. Level of complexity (High, Medium, Low Explain)
- 3. Has this been merged to a stable release? beta release?
- 4. Overall Recommendation (Yes, No)

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

Comment 30 by rzanoni@google.com on Tue, Mar 22, 2022, 5:26 AM EDT Project Member

- 1. Just https://crrev.com/c/3539861
- 2. Low, only include conflicts
- 3.100
- 4. Yes

Comment 31 by gmpritchard@google.com on Tue, Mar 22, 2022, 1:37 PM EDT Project Member

Labels: -LTS-Merge-Candidate LTS-Merge-Delayed-96

Delaying the LTS approval until M100 goes out to stable

Comment 32 by amyressler@chromium.org on Mon, Mar 28, 2022, 5:41 PM EDT Project Member

Labels: Release-0-M100

Comment 33 by amyressler@google.com on Tue, Mar 29, 2022, 1:14 PM EDT Project Member

Labels: CVE-2022-1141 CVE_description-missing

Comment 34 by gmpritchard@google.com on Tue, Mar 29, 2022, 1:29 PM EDT Project Member

Labels: -LTS-Merge-Review-96 -LTS-Merge-Delayed-96 LTS-Merge-Approved-96

Comment 35 by Git Watcher on Thu, Mar 31, 2022, 1:13 PM EDT Project Member

Labels: merge-merged-4664

The following revision refers to this bug:

https://chromium.googlesource.com/chromium/src/+/80cae5e81c10e40ad19ed14e6a10705d887b5db4

commit 80cae5e81c10e40ad19ed14e6a10705d887b5db4

Author: James Cook <jamescook@chromium.org>

Date: Thu Mar 31 17:12:41 2022

[M96-LTS] chromeos: Remove manual extension reload from SelectFileDialogExtension

M96 merge issues:

aanfliatina inaludaa

conflicting includes.

This code was added in https://codereview.chromium.org/9360005 as a workaround for some misbehavior in the extensions system for crashed component extensions. The code is no longer necessary. Deleting it avoids a potential use-after-free (the ExtensionSystem might be deleted slightly before the profile that owns it).

I manually tested after deleting the code:

- 1. Open file manager
- 2. Open a browser, then press Ctrl-O to create the open dialog
- 3. Kill the files process in task manager
- The dialog closes
- 4. Press Ctrl-O again
- The dialog opens again and functions normally

(cherry picked from commit 214db6b05f61309e14eab393755ca3ab47857012)

Bug: 1303253

Change-Id: lbf94afcc2b2412704d8dcbe65b93a5595e6e55cc

Reviewed-on: https://chromium-review.googlesource.com/c/chromium/src/+/3514778

Commit-Queue: James Cook <jamescook@chromium.org> Cr-Original-Commit-Position: refs/heads/main@{#979543}

Reviewed-on: https://chromium-review.googlesource.com/c/chromium/src/+/3539861

Reviewed-by: James Cook <jamescook@chromium.org>
Reviewed-by: Michael Ershov <miersh@google.com>
Commit-Queue: Michael Ershov <miersh@google.com>
Owners-Override: Michael Ershov <miersh@google.com>
Cr-Commit-Position: refs/branch-heads/4664@{#1565}

Cr-Branched-From: 24dc4ee75e01a29d390d43c9c264372a169273a7-refs/heads/main@{#929512}

[modify]

https://crrev.com/80cae5e81c10e40ad19ed14e6a10705d887b5db4/chrome/browser/ui/views/select_file_dialog_extension.cc

Comment 36 by amyressler@google.com on Thu, Mar 31, 2022, 5:15 PM EDT Project Member

Labels: -reward-topanel reward-unpaid reward-3000

*** Boilerplate reminders! ***

Please do NOT publicly disclose details until a fix has been released to all our users. Early public disclosure may cancel the provisional reward. Also, please be considerate about disclosure when the bug affects a core library that may be used by other products. Please do NOT share this information with third parties who are not directly involved in fixing the bug. Doing so may cancel the provisional reward. Please be honest if you have already disclosed anything publicly or to third parties. Lastly, we understand that some of you are not interested in money. We offer the option to donate your reward to an eligible charity. If you prefer this option, let us know and we will also match your donation - subject to our discretion. Any rewards that are unclaimed after 12 months will be donated to a charity of our choosing.

Please contact security-vrp@chromium.org with any questions.

Comment 37 by amyressler@chromium.org on Thu, Mar 31, 2022, 5:44 PM EDT Project Member

Congratulations, raven! The VRP Panel has decided to award you \$3,000 for this report. In assessing the security impact and exploitation potential, the reward amount was determined based on the low exploitation potential and the high degree

or specific user interaction that would be required to trigger this issue as described. I nank you for your efforts and reporting this issue to us.

Comment 38 by voit@google.com on Fri, Apr 1, 2022, 8:20 AM EDT Project Member

Labels: -LTS-Merge-Approved-96 LTS-Merge-Merged-96

Comment 39 by wxhu...@gmail.com on Fri, Apr 1, 2022, 9:56 AM EDT

thank you 😊

Comment 40 by amyressler@google.com on Fri, Apr 1, 2022, 4:05 PM EDT Project Member

Labels: -reward-unpaid reward-inprocess

Comment 41 by sheriffbot on Thu, Jun 16, 2022, 1:32 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

Comment 42 by amyressler@google.com on Fri, Jul 22, 2022, 7:36 PM EDT Project Member

Labels: CVE description-submitted -CVE description-missing

Comment 43 by amyressler@chromium.org on Fri, Jul 29, 2022, 5:26 PM EDT Project Member

Labels: -CVE_description-missing --CVE_description-missing

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