

MICHIGAN STATE

U N I V E R S I T Y

Beta Presentation

Splitting the Atom. Again.

The Capstone Experience

Team Mozilla

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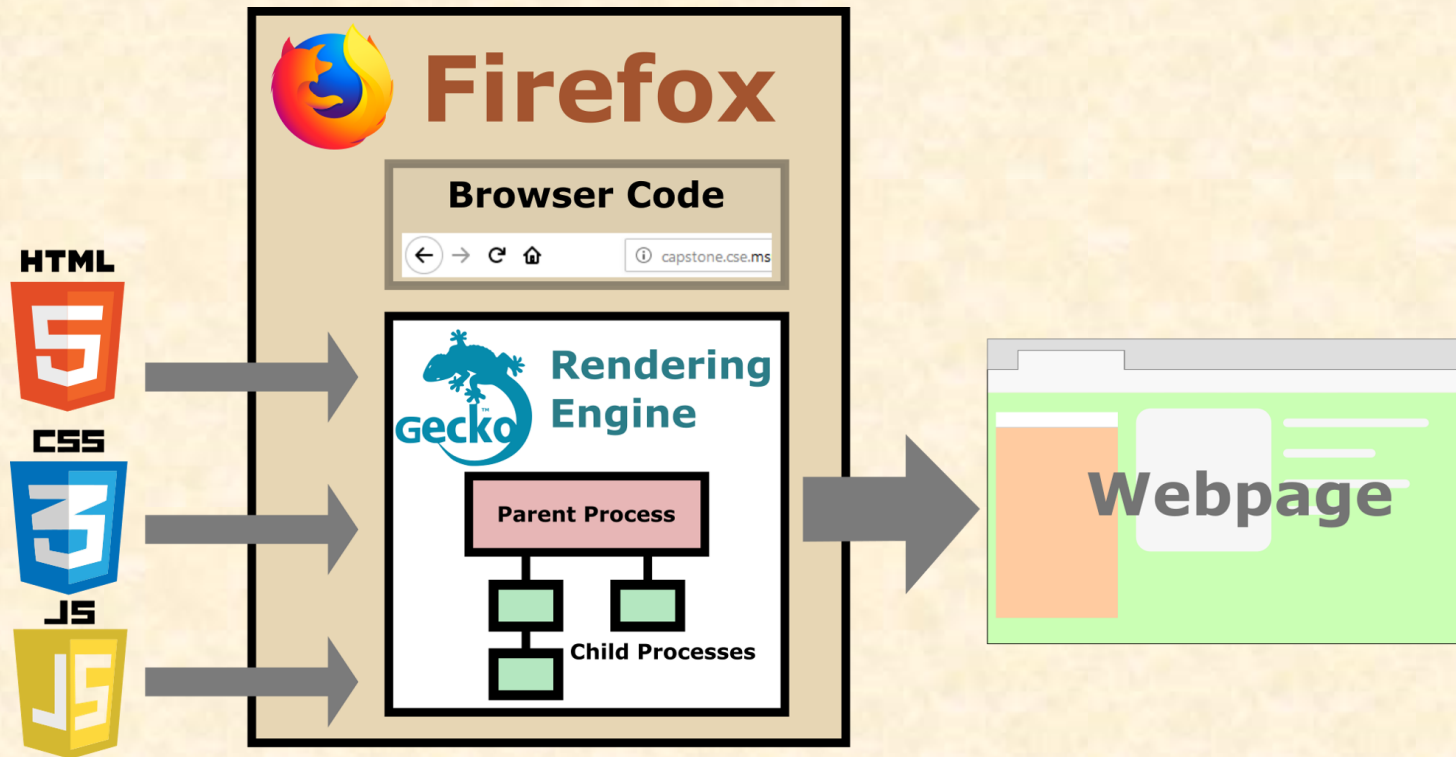
*From Students...
...to Professionals*

Project Overview

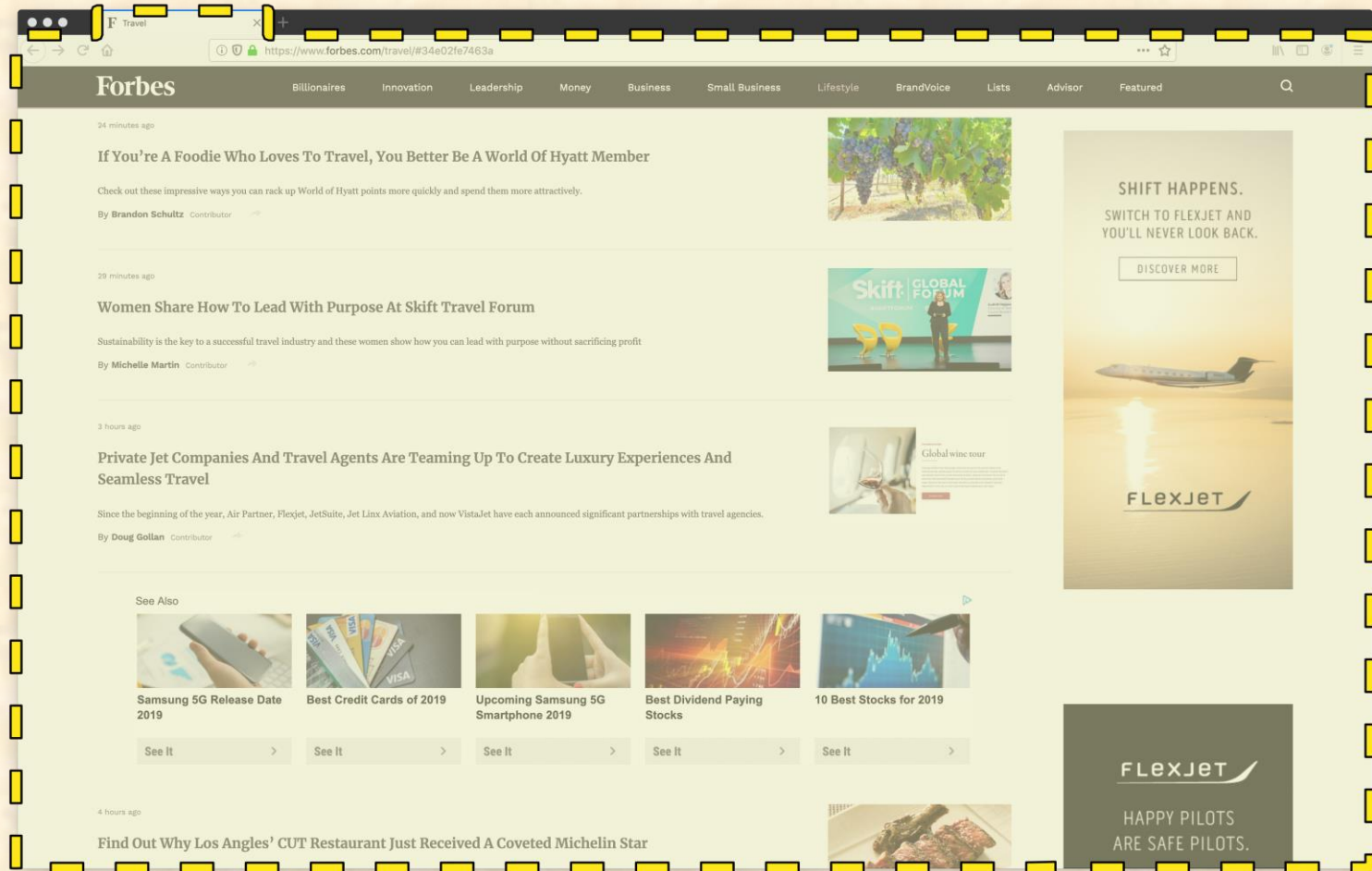
- Working to harden Firefox against Spectre and Meltdown style bugs
- Fission gives content in different frames their own processes
- Our completed work will be integrated into the release version of Firefox



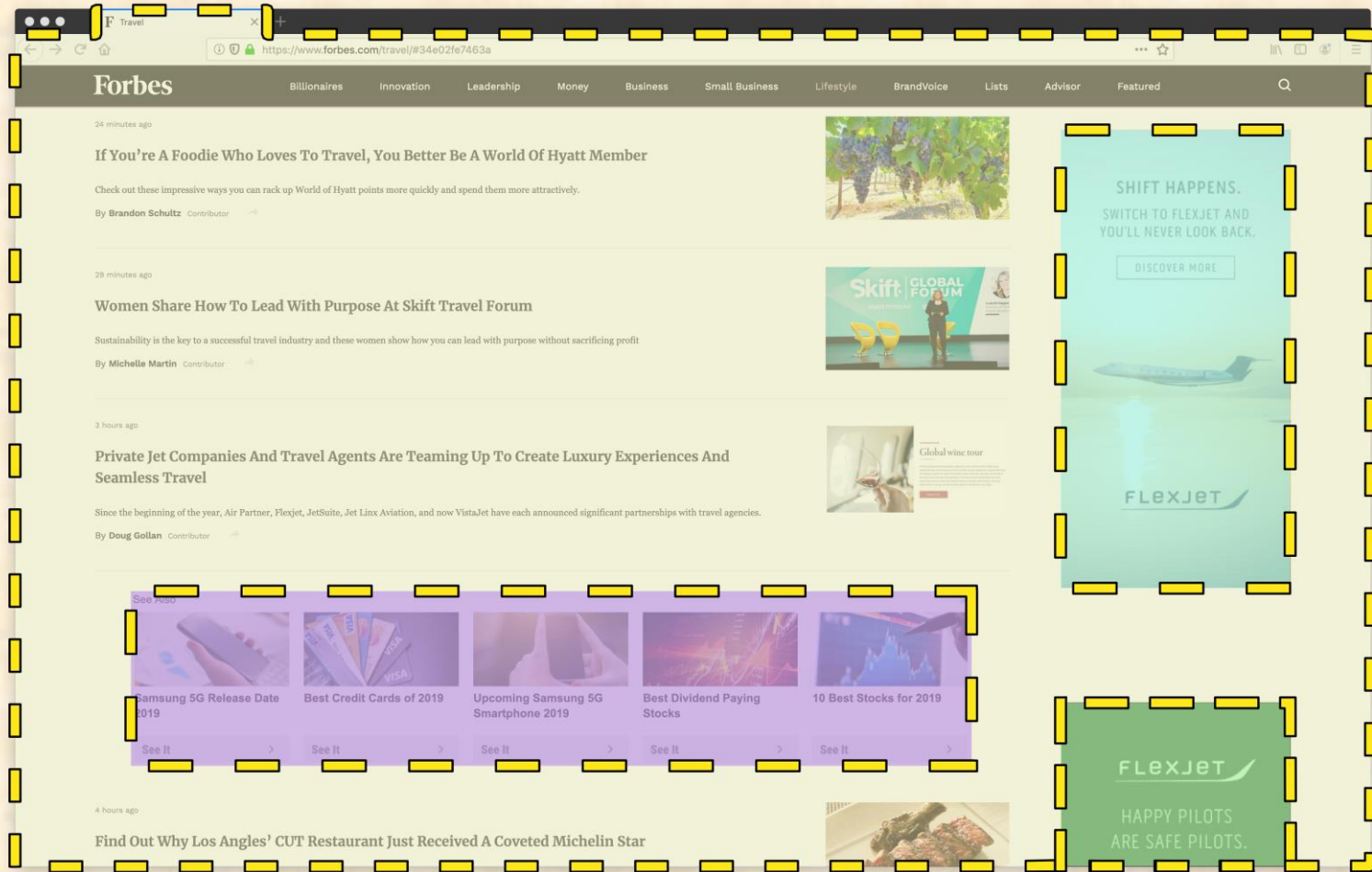
System Architecture



Pre-fission Process Separation



Post-Fission Process Separation



Example: Forbes.com

The screenshot shows a web browser window displaying a Forbes.com article. The browser's address bar shows the URL <https://www.forbes.com/travel/#4708e404463a>. The article title is "Stockholm's Vasa Museum is built around a renowned 17th century warship that was literally dredged up from the depths of the city's harbor, where it rested for more than 300 years since sinking on its maiden voyage." The author is "By Terrt Colby Contributor".

Below the article is a "See Also" section with five items:

1. Stocks to Buy Today
2. Samsung 5G Release Date 2019
3. 10 Best Stocks for 2019
4. Stocks to Invest in 2019
5. Best Investments for 2019

Each item has a "See It >" button.

The next article is "Kate Middleton And Prince William's Royal Trip To Pakistan: A Major Security Challenge" by Cecilia Rodriguez, published 2 hours ago. The text states: "The Duke and Duchess of Cambridge set off on their most complicated royal tour yet to a troubled country." A small image of Kate Middleton and Prince William is shown to the right.

The following article is "Delta And Marriott Named Best Airline And Hotel Chain For Business Travelers" by Grant Martin, published 3 hours ago. The text states: "Atlanta-based Delta Air Lines and Bethesda-based Marriott International have been voted as the top airline and hotel chain respectively for business travelers in North America." A small image of a hotel room is shown to the right.

The final article is "The Best Places To Eat In Vail & Beaver Creek" published 4 hours ago. A small image of a sushi platter is shown to the right.

On the right side of the page, there is a large advertisement for FlexJet. The ad features a sunset background with a FlexJet airplane flying over the water. The text reads: "SHIFT HAPPENS. SWITCH TO FLEXJET AND YOU'LL NEVER LOOK BACK." Below this is a "DISCOVER MORE" button. The FlexJet logo is at the bottom of the ad.



Example: Forbes.com

Stockholm's Vasa Museum is built around a renowned 17th century warship that was literally dredged up from the depths of the city's harbor, where it rested for more than 300 years since sinking on its maiden voyage.

By **Tern Colby** Contributor

See Also

1. **Stocks to Buy Today**
See It >
2. **Samsung 5G Release Date 2019**
See It >
3. **10 Best Stocks for 2019**
See It >
4. **Stocks to Invest in 2019**
See It >
5. **Best Investments for 2019**
See It >

2 hours ago

Kate Middleton And Prince William's Royal Trip To Pakistan: A Major Security Challenge

The Duke and Duchess of Cambridge set off on their most complicated royal tour yet to a troubled country.

By **Cecilia Rodriguez** Contributor

3 hours ago

Delta And Marriott Named Best Airline And Hotel Chain For Business Travelers

Atlanta-based Delta Air Lines and Bethesda-based Marriott International have been voted as the top airline and hotel chain respectively for business travelers in North America.

By **Grant Martin** Contributor

4 hours ago

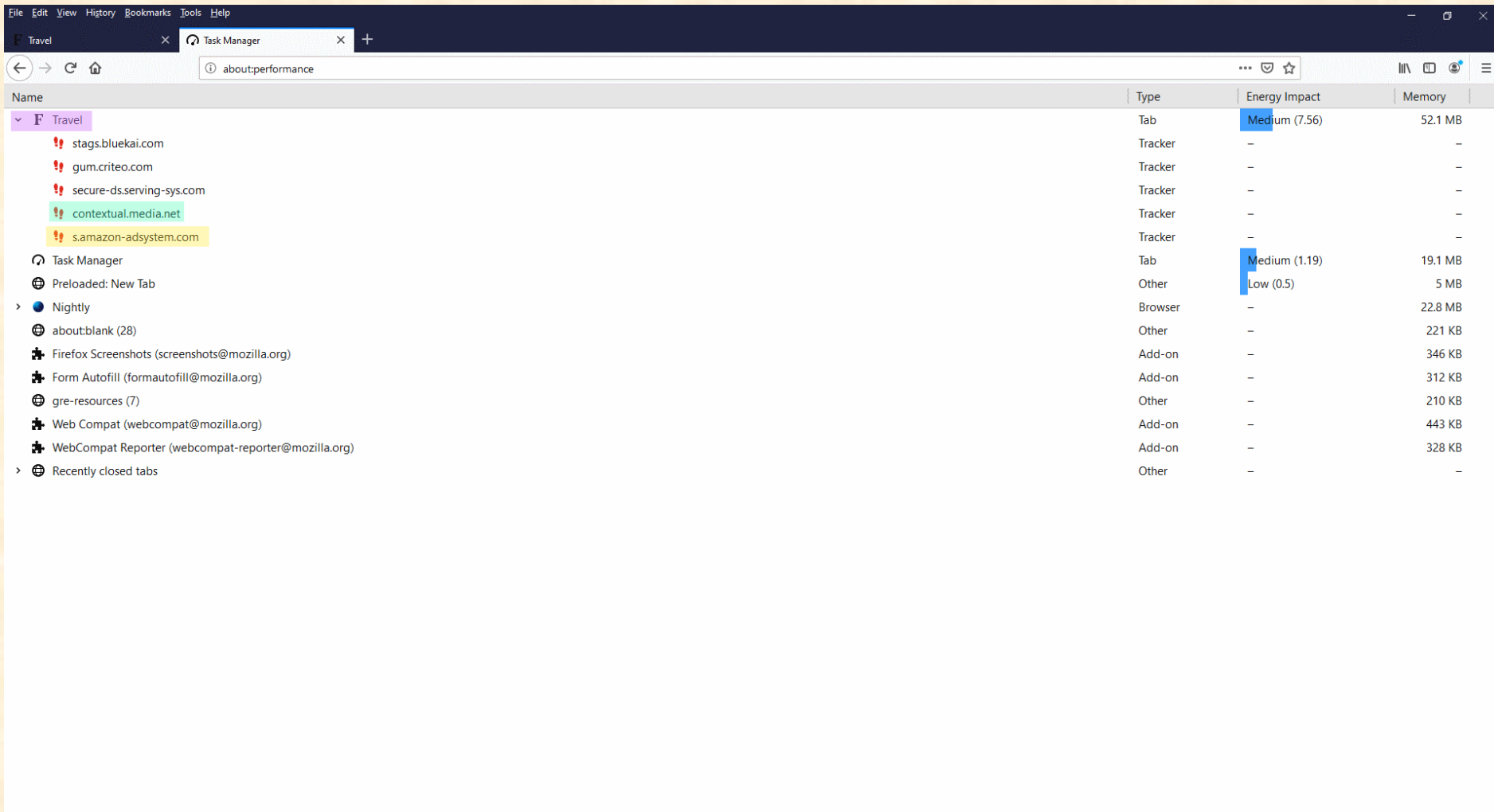
The Best Places To Eat In Vail & Beaver Creek

Dining in Vail and Beaver Creek are another reason to visit this great ski destination.

SHIFT HAPPENS.
SWITCH TO FLEXJET AND YOU'LL NEVER LOOK BACK.
DISCOVER MORE
FLEXJET



Forbes.com without Fission

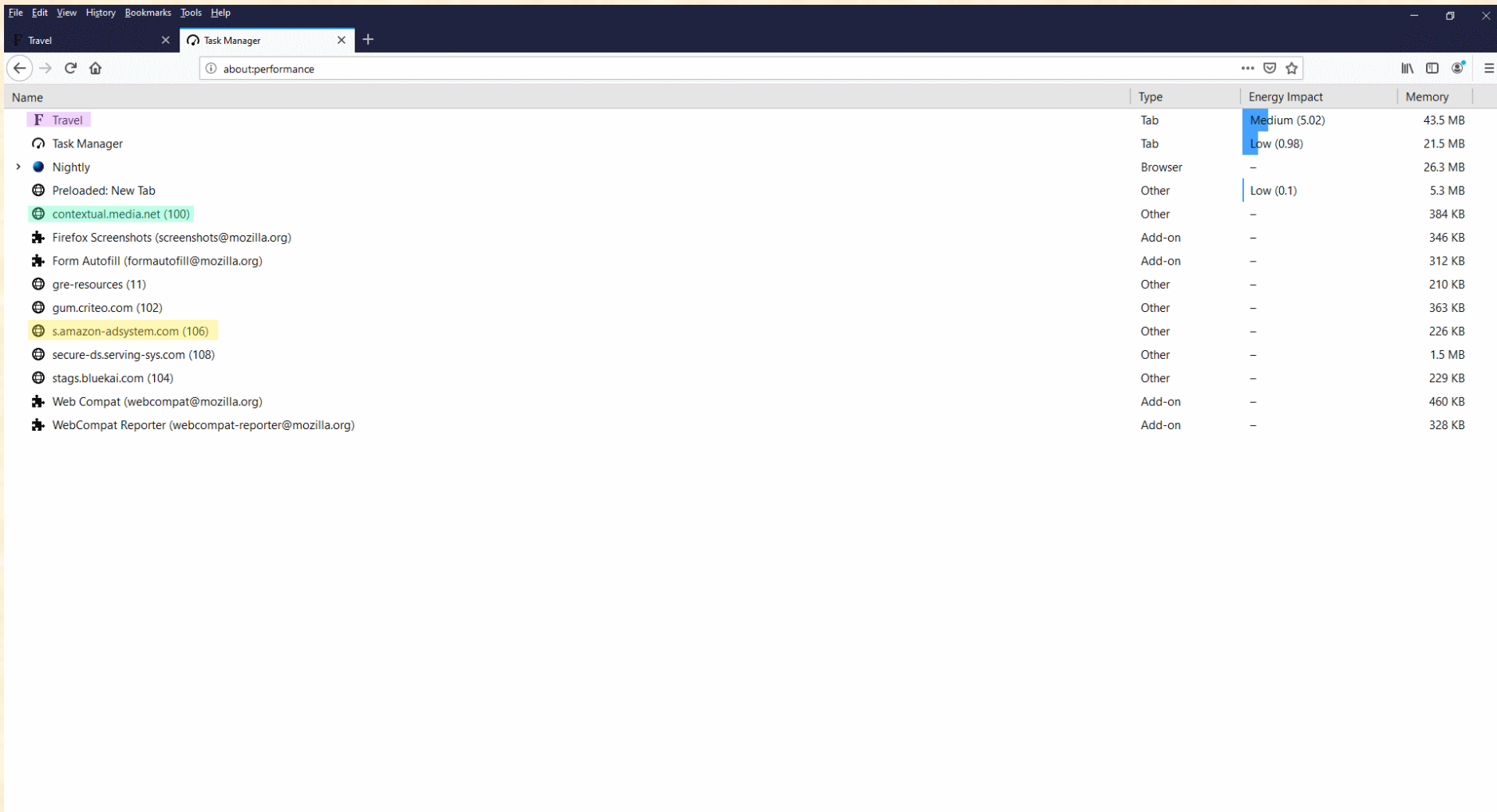


The screenshot shows the Firefox Task Manager interface. The left pane lists various components, and the right pane displays a table of performance metrics. The table has four columns: Name, Type, Energy Impact, and Memory.

Name	Type	Energy Impact	Memory
Travel	Tab	Medium (7.56)	52.1 MB
stags.bluekai.com	Tracker	-	-
gum.criteo.com	Tracker	-	-
secure-ds.serving-sys.com	Tracker	-	-
contextual.media.net	Tracker	-	-
s.amazon-adsystem.com	Tracker	-	-
Task Manager	Tab	Medium (1.19)	19.1 MB
Preloaded: New Tab	Other	Low (0.5)	5 MB
Nightly	Browser	-	22.8 MB
about:blank (28)	Other	-	221 KB
Firefox Screenshots (screenshots@mozilla.org)	Add-on	-	346 KB
Form Autofill (formautofill@mozilla.org)	Add-on	-	312 KB
gre-resources (7)	Other	-	210 KB
Web Compat (webcompat@mozilla.org)	Add-on	-	443 KB
WebCompat Reporter (webcompat-reporter@mozilla.org)	Add-on	-	328 KB
Recently closed tabs	Other	-	-



Forbes.com with Fission



The screenshot shows the Firefox Task Manager interface. The browser window title is 'Travel' and the address bar shows 'about:performance'. The table below lists various components and their performance metrics.

Name	Type	Energy Impact	Memory
Travel	Tab	Medium (5.02)	43.5 MB
Task Manager	Tab	Low (0.98)	21.5 MB
Nightly	Browser	-	26.3 MB
Preloaded: New Tab	Other	Low (0.1)	5.3 MB
contextual.media.net (100)	Other	-	384 KB
Firefox Screenshots (screenshots@mozilla.org)	Add-on	-	346 KB
Form Autofill (formautofill@mozilla.org)	Add-on	-	312 KB
gre-resources (11)	Other	-	210 KB
gum.criteo.com (102)	Other	-	363 KB
s.amazon-adsystem.com (106)	Other	-	226 KB
secure-ds.serving-sys.com (108)	Other	-	1.5 MB
stags.bluekai.com (104)	Other	-	229 KB
Web Compat (webcompat@mozilla.org)	Add-on	-	460 KB
WebCompat Reporter (webcompat-reporter@mozilla.org)	Add-on	-	328 KB



What's left to do?

- Our team will continue to work on new bugs as Mozilla assigns them
- Fission is on a good track to be completed within a year or so, to be put up for Firefox beta users by early next year
- Full release to be in 2021
- For the rest of the semester, we will continue work on bugs assigned by Mozilla



Questions?

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