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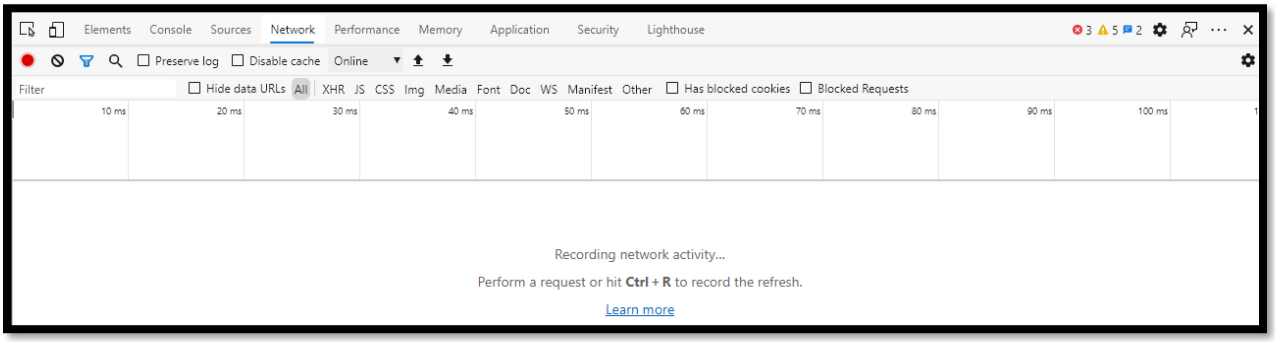
# Selenium 4 How To Automate Slow Internet Connection

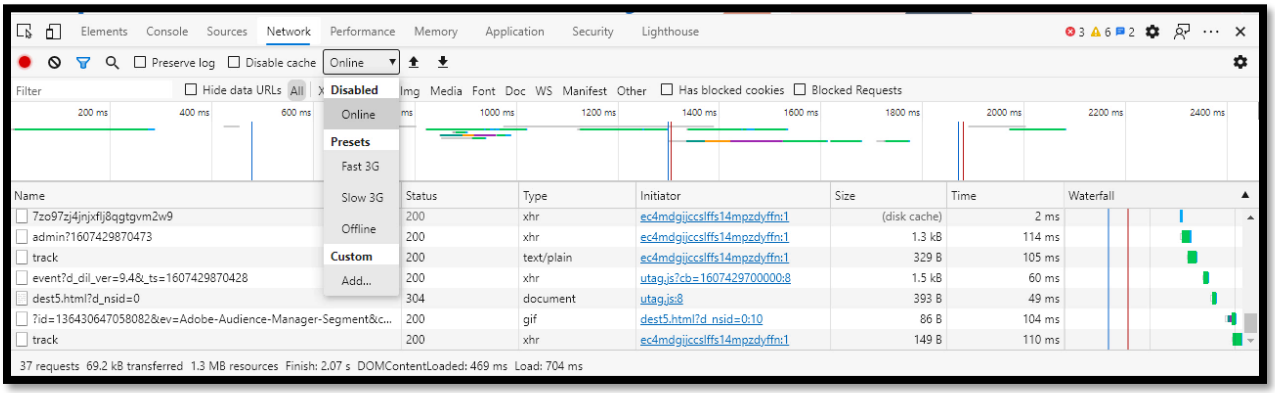
The Network panel is another way to debug a problem. It has logs to help us troubleshoot the problem. We mostly use the panel for 2 reasons. One reason is to inspect the network properties of a resource. Another reason is to make sure our resources are downloaded and uploaded as expected. When testing an application, it's easy to forget or not think about a user with a weak connection. Therefore, we are going to automate how to slow down our internet connection.

## Slow Connection

In the Network panel, there's no available request. It's empty because we must open the panel before performing an action. That's how we preserve the network traffic data.




Refresh the page and all of the network activity shows up in the Network Log. Each row in the Network Log represents a resource. Do you see 69.2 kB transferred? That's the total download size. This Network Throttle dropdown is how we emulate different connection speeds. We see Fast 3G, Slow 3G, and Offline.



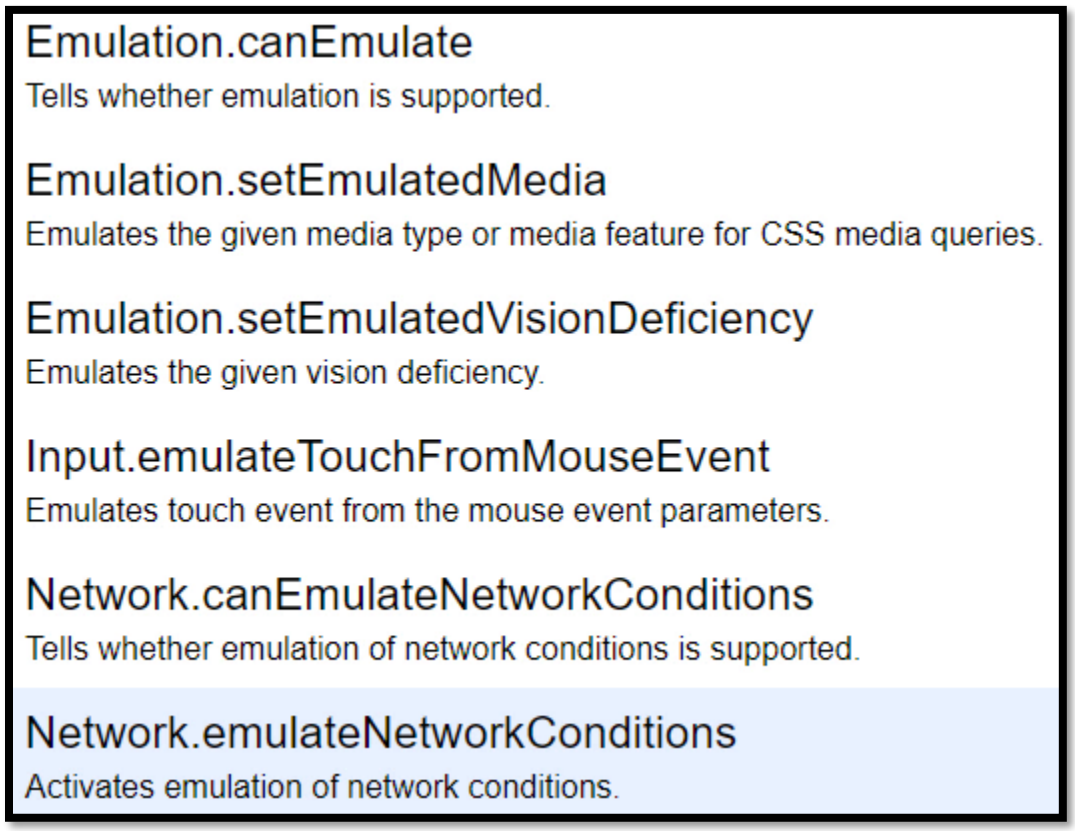
In this session, I will automate a 3G connection but next session I will take the network offline. Select any preset and the DevTools display a warning icon beside the Network tab.

For our Test Script, I have the setup method for EdgeDriver. Let me also add driver.getDevTools() assign it to devTools = . Also write DevTools devTools; up top.

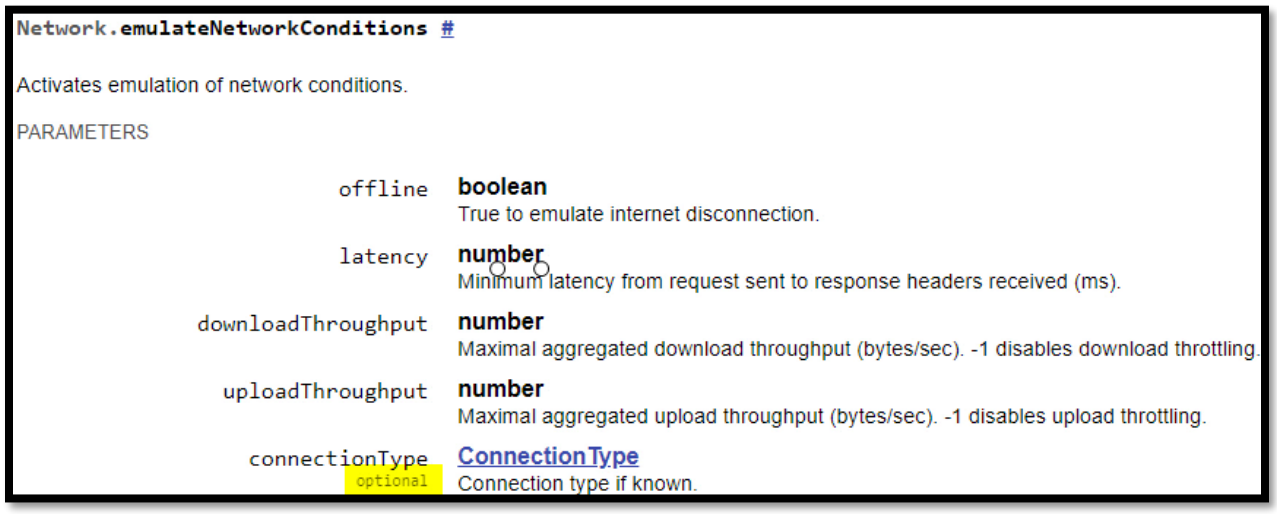
```
public class EnableNetworks {

  EdgeDriver driver;
  DevTools devTools;

  @BeforeMethod
  public void setUp () {
    WebDriverManager.edgedriver().setup();
    driver = new EdgeDriver();
    driver.manage().window().maximize();
    devTools = driver.getDevTools();
  }
```

Enable the network to slow down by writing. @Test public void enableSlowNetwork () { } Start by creating a session devTools.createSession(); then we send a command to enable the network by writing devTools.send(Network.enable(Optional.empty(), let's write this statement 2 more times. This complete statement makes it possible to deliver network tracking and events to the client. All of the parameters are Optional.empty because they are not required. In fact, the first 2 parameters are experiments.

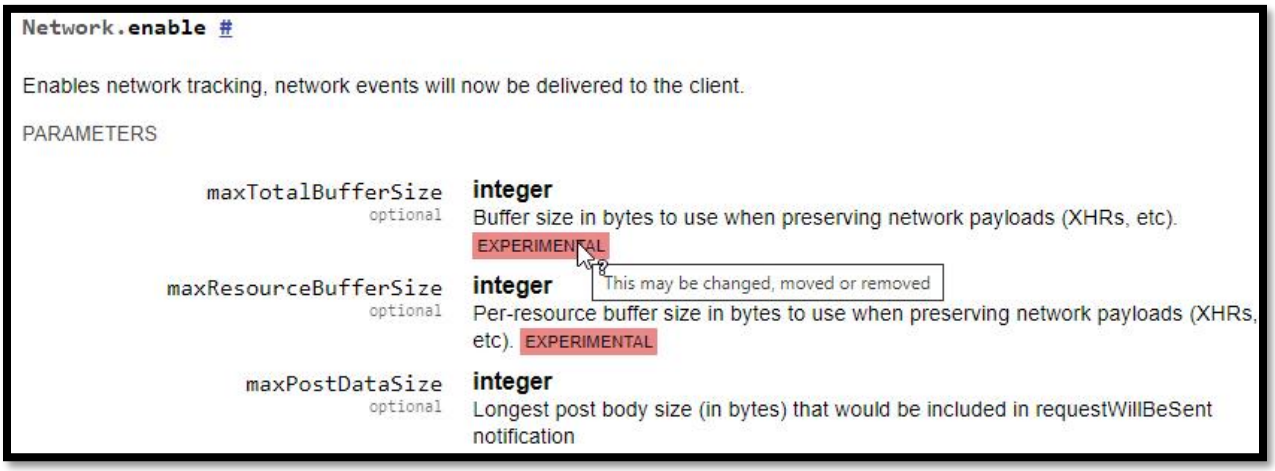
Next, is to emulate the Network Conditions. We can go to github for the method and parameters. Search for emulate. At the bottom is Network.emulateNetworkConditions. It activates emulation of network condition.




The parameters are offline, latency, downloadThroughput, uploadThroughput, and connectionType. Connection Type is the only optional parameter.




The method we wrote for enabling the network is right here and we see all 3 parameters are optional: maxTotalBufferSIze, maxResourceBufferSize, and maxPostDataSize. If I hover Experimental, the tool tip says “This may be changed, moved, or removed”.




For our Test Script, let's complete it by writing devTools.send(Network.emulateNetworkConditions(). We want the network to stay online so we set offline to false, latency is 150, downloadThroughput is 2500, uploadThroughput is 2000. Next, is the Connection Type. Optional.of(ConnectionType.) We see different choices. We have BLUETOOTH, 2G, 3G, 4G, and WIFI. Let's go ahead and select 3G.

Let's also compare the time between this slow network and the normal way by loading an application. Know what before we compare, we must load the application for LinkedIn: driver.get("https://www.linkedin.com"). Let's also print the page title. sout("Slow " + driver.getTitle).

```
@Test
public void enableSlowNetwork () {
  devTools.createSession();
  devTools.send(Network.enable(
          Optional.empty(),
          Optional.empty(),
          Optional.empty()));
  devTools.send(Network.emulateNetworkConditions(
           offline: false,
           latency: 150,
           downloadThroughput: 2500,
           uploadThroughput: 2000,
          Optional.of(ConnectionType.CELLULAR3G)));
  driver.get("https://www.linkedin.com");
  System.out.println("Slow " + driver.getTitle());
}
```

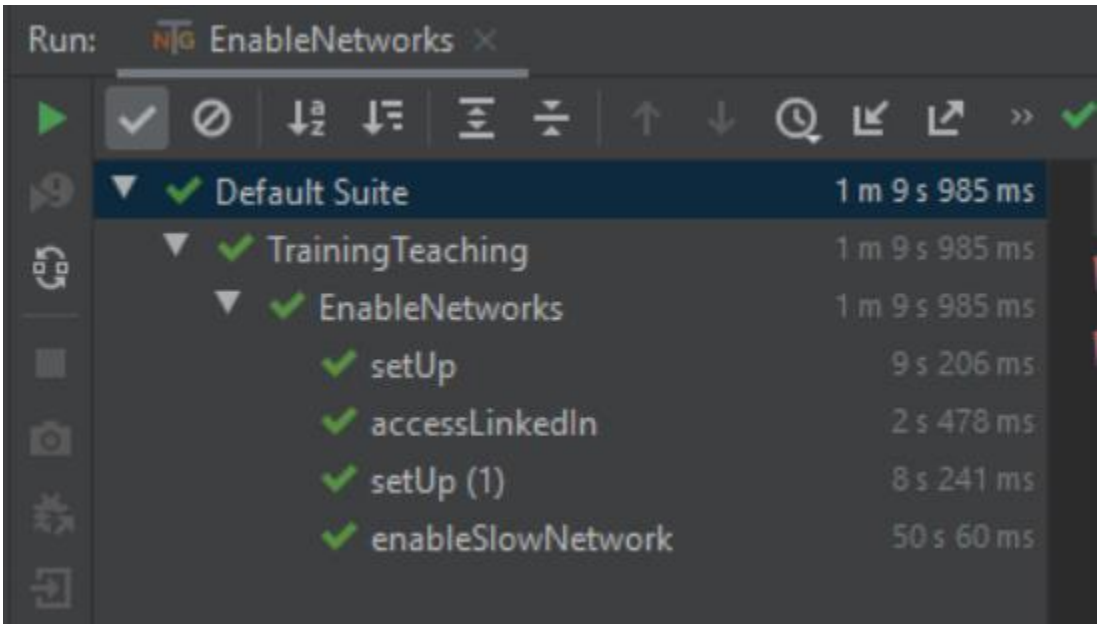
Now, let's go ahead and load LinkedIn the normal way.

@Test public void accessLinkedIn () { } driver.get("https://www.linkedin.com"). Also sout("Access " + driver.getTitle());

```
@Test
public void accessLinkedIn () {
  driver.get("https://www.linkedin.com");
  System.out.println("Access " + driver.getTitle());
}
```

Let's go ahead and run.

The Console shows accessLinkedIn loaded in 2 Seconds and 478 Milliseconds. enableSlowNetwork took longer to complete. It finished in 50 Seconds and 60 Milliseconds. Both Test Scripts show the Page Title. That's it for slowing down the Network to a slower connection.




Next, I'm going to show you have to take the Network offline. If you are interested in more videos, consider subscribing to my YouTube channel and clicking the bell icon. Also, follow me on Twitter, connect with me on LinkedIn and Facebook. The transcript and code will get placed on GitHub. Thanks for watching and I'll see you in the next session.

Contact

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