

Enabling TLS 1.2 in Web Browsers and Java

Feb 2020

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1. Introduction

Transport Layer Security (TLS) secures the connection between your desktop or device and the websites you want to access. As part of our continued effort to adhere to the latest cybersecurity best practices, we are configuring CitiDirect BE[®] and CitiDirect[®] Services web servers to require that your browser <u>and</u> Java software use TLS version 1.2.

We removed TLS version 1.0 in October 2018, and we are removing TLS 1.1 on March 7, 2020. So you need to make sure TLS 1.2 is enabled before that date.

DEADLINE: March 7, 2020

(Note: this is a firm, non-negotiable deadline for all clients globally)

Please **check your computer** to make sure your web browser and Java configurations are TLS 1.2 enabled. If you still need to use CitiDirect Services there is an additional step to ensure your Java configuration is TLS 1.2 is enabled.

- If you do not have TLS 1.2 enabled in your web browser, you will not be able to login to CitiDirect BE.
- If you still need to use CitiDirect Services, you will need TLS 1.2 enabled in your Java and you need to use a "Java 8" version (Java 1.8.x).

This document will guide you through the steps required to check/update/confirm that both your web browser settings and Java settings are properly configured to support TLS 1.2.

If you need additional help, please contact your company's Information Technology team or your Citi Service Representative.

IMPORTANT: our plan to remove TLS 1.1 is not specific to Citi alone. It is a global industry-agnostic initiative for security reasons. In addition, as this must be an "all or nothing" change, we cannot accommodate any client/user exception lists. All users must ensure their computers are TLS 1.2 enabled before March 7, 2020.

2. Checking that your web browser is configured correctly.

Time Sensitive: please see deadline date in the Introduction section of this document.

Most modern browsers are automatically configured to use TLS 1.2. However, as a proactive confirmation, please use the steps below to ensure that your browser is correctly configured.

Internet Explorer:

- 1. In Internet Explorer, click on "Tools" in the top menu bar of the IE browser
- 2. Click on "Internet Options"
- 3. Click on the "Advanced" tab within the Internet Options window
- 4. Scroll down in the "Advanced" tab and enable "Use TLS 1.2" Checkbox (if it not enabled already)
- 5. Click "Apply" in the Internet Options tab

| 2 | Internet Options | \frown | | | | | | | |
|----------|--|----------|--|--|--|--|--|--|--|
| \smile | General Security Privacy Content Connections Programs Advanced | 3 | | | | | | | |
| | Settings | \smile | | | | | | | |
| | Enable Enhanced Protected Mode* Enable Integrated Windows Authentication* Enable native XMLHTTP support Enable SmartScreen Filter Enable Strict P3P Validation* Use SSL 2.0 Use SSL 3.0 Use TLS 1.0 Use TLS 1.1 Use TLS 1.1 Use TLS 1.2 Warn about certificate address mismatch* Warn if changing between secure and not secure mode Warn if POST submittal is redirected to a zone that does n | | | | | | | | |
| | *Takes effect after you restart your computer | | | | | | | | |
| | Restore advanced settings | | | | | | | | |
| | Reset Internet Explorer settings | | | | | | | | |
| | Resets Internet Explorer's settings to their default Reset | | | | | | | | |
| | You should only use this if your browser is in an unusable state. | | | | | | | | |
| | OK Cancel Apply | | | | | | | | |

- For Internet Explorer, only IE 11.0 is recommended when using CitiDirect BE. Any older IE versions are not supported and run the risk of not supporting TLS 1.2.
- For example:
 - IE7 or lower TLS 1.2 is not supported (you must upgrade to IE11)
 - \circ $\:$ IE8 to IE10 users are strongly advised to check if TLS 1.2 is enabled
 - IE11 although TLS 1.2 should be enabled by default, we strongly encourage you to confirm that TLS 1.2 is enabled

Firefox:

- 1. In a new tab, type **about:config** in the address bar and press Enter/Return.
- 2. In the search box above the list, type **TLS**
- 3. If the **security.tls.version.max** preference is bolded and "user set" to a value other than 3, rightclick > Reset the preference to restore the default value of 3
- 4. If the **security.tls.version.min** preference is bolded and "user set" to a value other than 1, rightclick > Reset the preference to restore the default value of 1

The values for these preferences mean:

- 1 means TLS 1.0
- 2 means TLS 1.1
- 3 means TLS 1.2
- Firefox:
 - Firefox 23 or lower TLS 1.2 is not supported (you must upgrade)
 - Firefox 24 to Firefox 26 users are strongly advised to check if TLS 1.2 is enabled
 - Firefox 27+: although TLS 1.2 should be enabled by default, we strongly encourage you to confirm that TLS 1.2 is enabled

Chrome:

The majority of Chrome browser versions support TLS 1.2 by default. No setting change is required.

- Chrome:
 - Chrome 29 or lower (2013 and earlier):
 - TLS 1.2 is not supported (you must upgrade)
 - Chrome 30+ (2013 and later):
 - Although TLS 1.2 should be enabled by default, we strongly encourage you to confirm that TLS 1.2 is enabled

macOS Safari:

Safari 7+ supports TLS 1.2 by default. No setting change is required.

3. How to find the Java version on your computer?

Time Sensitive: please see deadline date in the Introduction section of this document.

If you still need to use CitiDirect Services, you must ensure your Java configuration is TLS 1.2 is enabled.

To find the Java version currently installed on your computer, follow the steps below for your Operating System.

Windows 10:

- 1. Click "Start" button
- 2. Scroll through the applications and programs listed until you see the Java folder
- 3. Click on the Java folder, then "About Java" to see the Java version

Windows 8:

- 1. Right-click on the screen at bottom-left corner and choose "Control Panel" from the pop-up menu
- 2. When the Control Panel appears, select "Programs"
- 3. Click "Programs and Features"
- 4. The installed Java version is listed

Windows 7:

- 1. Click "Start" button
- 2. Select "Control Panel"
- 3. Select "Programs"
- 4. Click "Programs and Features"
- 5. The installed Java version is listed



macOS

- 1. From the Apple Menu, choose "System Preferences" and click on the Java icon. If you do not see the Java icon, you do not have Java installed
- 2. Click the "Update" tab at the top

4. What to do if your Java version does not have TLS 1.2 option?

Time Sensitive: please see deadline date in the Introduction section of this document.

When the Java Control Panel does not have TLS 1.2 option under Advanced Security Settings, check your current Java version.

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|---------------------------|------------------------|----------------------------------|---------------------------|----------------|-----------------|---------------------|------------|-----------|
| 4 | 🕹 Jav | va Runti | me Enviror | nment Settings | ; | | | |
| | Use | er Syste | em | | | | | |
| | F | Platform | Product | Location | Path | Runtime Para | Enabled | Architect |
| | 1 | .8 | 1.8.0_131 | http://java | C:\Progra | | V | x86 |
| | | | | | | Find | Add | Remove |
| | | | | | | ОК | Cancel | Apply |

If the Java version is 1.6 then it will not support TLS 1.2. And we no longer support Java 1.6.

<u>IMPORTANT</u>: If you need Java, we <u>require</u> that you use Java version 1.8 ("Java 8") which uses TLS 1.2 by default and has a stronger cipher (better security).

5. What to do if your Java version has TLS 1.2 option enabled but CitiDirect Services is not working?

When the Java Control Panel does show the TLS 1.2 option in the Advanced Security Settings but CitiDirect Services is not launching, check your current Java version

| Java (| Control Par | nel | | | | | |
|---------|-------------|-------------|----------------|-----------------|----------------------|------------|-----------|
| eneral | Java Sec | urity Adva | anced | | | | |
| View ar | nd manage i | Java Runtim | e versions and | settings for Ja | ava applications and | d applets. | ïew |
| 4 | Java Runti | me Enviror | nment Setting | s | | | |
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| L. | USEI Systi | em | | | | | |
| | Platform | Product | Location | Path | Runtime Para | Enabled | Architect |
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| | | | | | Find | Add | Remove |
| L | | | | | | ОК | Cancel |
| | | | | | | | |

If the Java version is 1.7 then it supports TLS 1.2 <u>but with weak cipher</u>. And we no longer support Java 1.7.

<u>IMPORTANT</u>: If you need Java, we <u>require</u> that you use Java version 1.8 ("Java 8") which uses TLS 1.2 by default and has a stronger cipher (better security). No Java 1.7 version is an option due to weak cipher.

6. CitiDirect BE Mobile and CitiDirect BE Tablet

All modern mobile browsers support TLS 1.2 by default.

However, some very old mobile phones may require an upgrade to a more recent mobile browser version. When in doubt, please contact your IT Department or mobile phone providers for additional guidance and detailed instructions.

7. CitiDirect BE Tablet

No change is required.