

WebFMC Free and WebFMC Pro

for X-Plane 11

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1 License

This software is provided “as is”, without warranty of any type. Use at your own risk. This software is a property of Green Arc Studios and can not be modified, reused (as a whole or in parts), shared or distributed without permission of the authors.

WebFMC Pro only: WebFMC Pro and the license file obtained as part of the purchase are for your own use only and cannot be shared, redistributed or modified. WebFMC Pro plugin and its license can be installed on a single PC you own.

2 Introduction

WebFMC is a X-Plane 11 plugin that makes it possible to access the CDU of selected airplanes via any modern web browser running on virtually any device (phone, tablet, smart TV etc) in your local network.

WebFMC is available in two variants:

- the Free version that supports **Zibo's 737-800 modified** and **737-900/737-700 Ultimate**.
- the Pro version (payware) that supports additional 3rd party airplanes.

See [*Supported Aircraft List*](#) for a detailed list of aircraft supported by the Pro version.

WebFMC Pro will receive support for more aircraft via free updates throughout the lifetime of X-Plane 11. See www.greenarcstudios.com for details on obtaining the free version of WebFMC or purchasing the Pro version.

3 Disclaimer

We'll do our best to keep WebFMC Pro updated for future changes in supported aircraft throughout the lifetime of X-Plane 11, however we reserve the right to withdraw support for a plane if its developer makes incompatible changes that make it impossible.

4 Requirements

4.1 Plugin requirements

The general requirements for the plugin part of WebFMC are:

- X-Plane version 11.35+
- One of the supported aircraft (see [Introduction](#) for the complete list)
- Supported operating systems:
 - Microsoft Windows 7 or newer (64-bit)
 - Mac OS 10.14.x (Mojave)
 - Ubuntu Linux 16.04, 18.04, 20.04 (64-bit).

Windows systems: WebFMC plugin requires the latest "Microsoft Visual C++ Redistributable for Visual Studio 2015, 2017, 2019", which can be downloaded from [Microsoft Visual C++ downloads website](#) (the vc_redist.x64.exe file). On Windows versions older than 10, UCRT (Universal CRT) may also be required – it can be downloaded from [Microsoft Download Center website](#).

Linux systems: we build WebFMC in a way that reduces the number of dependencies on external libraries. That means WebFMC may work on other Linux distributions, but we cannot guarantee that and we only officially support Ubuntu LTS releases listed above. If in doubt, please check [WebFMC Free](#) first.

The WebFMC plugin doesn't impose any extra CPU/memory requirements on the system. It is very lightweight and was implemented with great care about performance. The part of the plugin responsible for serving FMC contents to the clients (browsers) runs as a completely separate process, so it doesn't affect the main execution loop of X-Plane and makes better use of multi-core CPUs – you should see no performance degradation in X-Plane, even with multiple WebFMC displays opened at a time. The client part of WebFMC uses modern JavaScript and websockets for efficient updates of the FMC contents.

4.2 Web browser requirements

Any modern and up-to-date web browser with JavaScript enabled should work, but we recommend the latest versions of Google Chrome on Windows or Android and Safari on iOS. We do not guarantee support for vintage and obsolete iOS devices (according to [official Apple classification](#)). If you have any compatibility concerns please try free version first.



5 Important information about data collection

WebFMC uses cookies and Google Analytics to periodically collect some generic usage data that helps us improve our add-on. This includes statistical information about screen resolutions, device models, versions of web browsers and operating systems that let us optimize and improve our graphic assets and code for setups that people use the most. We **do not** collect any data to identify users.

The first time you run WebFMC in a web browser, you will be given a choice to opt-out (disable) these statistics, but we kindly ask you to keep this functionality enabled to help us make WebFMC better. Should you ever change your mind about that, just remove WebFMC-related cookies from your browser and re-launch it to be presented with opt-out question again.

6 Quick installation

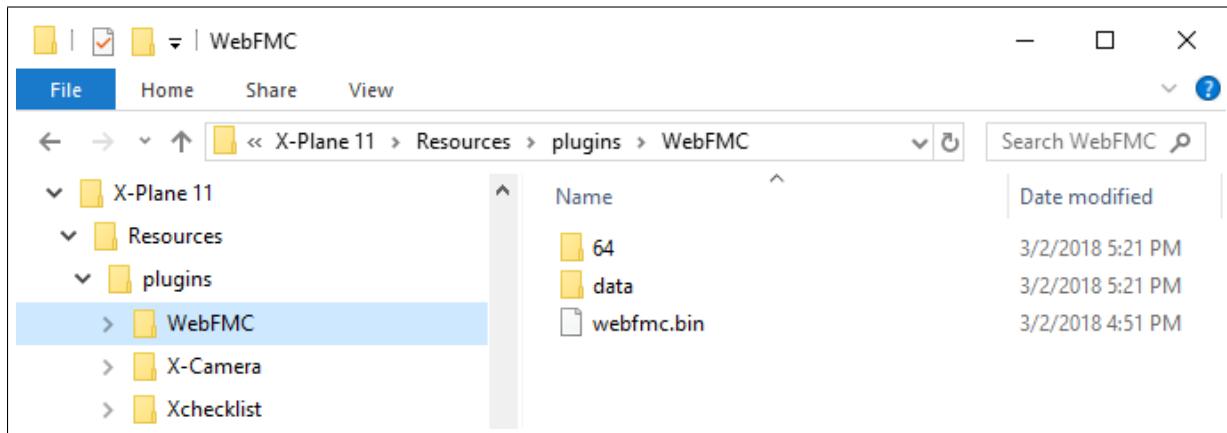
Note: these steps are for advanced X-Plane users who understand basic concepts of local networks and are familiar with plugin installation in X-Plane. Skip to [Installation](#) section (or [Troubleshooting](#) further down) if unsure or having difficulties.

1. Unpack WebFMC zip file and copy WebFMC folder to <X-Plane>/Resources/plugins folder.
2. WebFMC Pro users only: put `webfmc-lic.txt` license file that you received by email shortly after purchase into the <X-Plane>/Resources/plugins/WebFMC folder.
Keep a copy of your license somewhere safe in case of future reinstall / updates.
3. Start X-Plane.
4. Find out the IP address of your X-Plane PC and connect with a web browser running on any PC / mobile device in same local network to address `http://<IP of X-Plane PC>:9090`

7 Installation

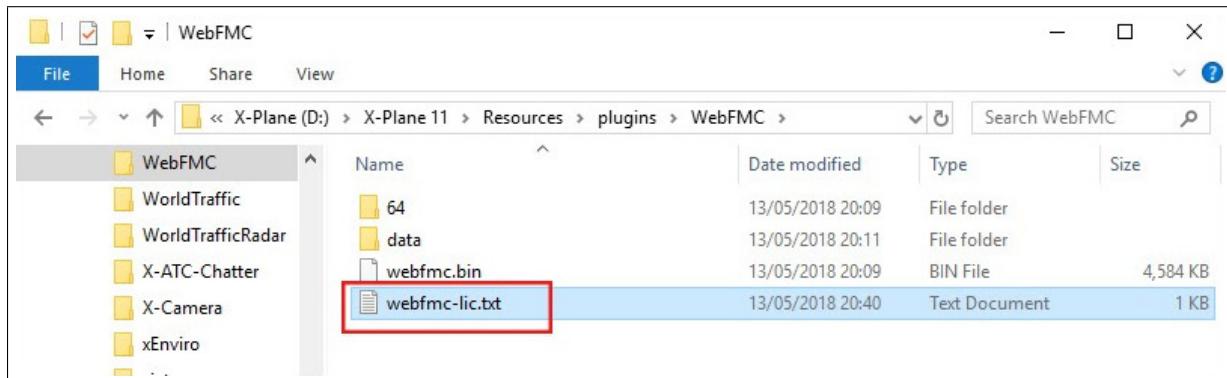
→ See the video tutorial: <https://youtu.be/RWSAOKvlzLk>

To install, just unpack the downloaded zip file and place WebFMC folder in the Resources/plugin directory of your X-Plane 11 installation. The resulting directory structure should look as follows:



Pro only The Pro version requires **license file** that you should receive shortly after your purchase. The license file – `webfmc-lic.txt` – should be copied into WebFMC folder (see the picture below). If you installed the license while X-Plane was running, it needs to be restarted for changes to take effect.

Important: WebFMC Free and Pro are different binaries. It's not enough to install just the license file over the free version – you need to remove the free version, and install the Pro version from the store.



8 Updating

To update WebFMC to the latest version, follow these steps:

1. Re-download WebFMC from your store account (if using WebFMC Pro) or from the Downloads section of the forum (if using WebFMC Free version).
2. WebFMC Pro only: make a **backup copy of `webfmc-lic.txt`** file from your existing WebFMC folder (or make sure you still have your license file in the original email received after purchase).

3. Optional: make a backup copy of your entire WebFMC folder in case of unexpected issues, or if you need to revert back to the old version for whatever reason.
4. Remove the existing WebFMC folder from plugins directory.
5. Unpack the new version of WebFMC into plugins directory (follow [Installation](#) instructions from the previous chapter).
6. WebFMC Pro only: restore your `webfmc-lic.txt` file into the new WebFMC folder.
7. If using WebFMC with IOS (iPad/iPhone) and launching it with the homescreen icon: restart your mobile device before running X-Plane after update to ensure the IOS cache for webapps is cleared and new version of WebFMC is used (see [Known issues](#) section for more details about IOS issues affecting WebFMC).

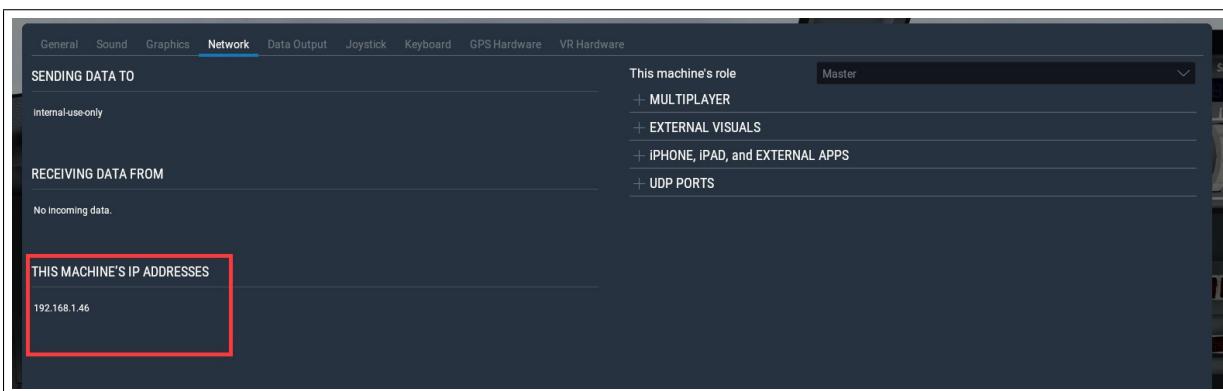
9 Connecting to WebFMC

After starting X-Plane 11 with a supported plane the FMC can be displayed by connecting to **port 9090**¹ of your PC with a web browser running on any device **in your local network**.

For example, to display the FMC from the PC running X-Plane, point your web browser at `http://localhost:9090` or `http://127.0.0.1:9090`. To display the FMC from any other device in your local network, just substitute the address with a valid local IP address of the X-Plane PC, e.g. `http://192.168.1.34:9090`.

Please note that both your X-Plane PC and the device you want to display FMC on must be connected to the same local network. It is perfectly fine to have the PC connected to your router/access point by wired ethernet and a mobile connected via WIFI as long it's same local network (which is typical for default configurations of home routers and WIFI Access Points).

To access the FMC from other devices in your local network you need to determine the IP address of your X-Plane PC. You can find it easily in the X-Plane 11 settings dialog:



¹This port is not configurable at the moment, but will be in future versions.

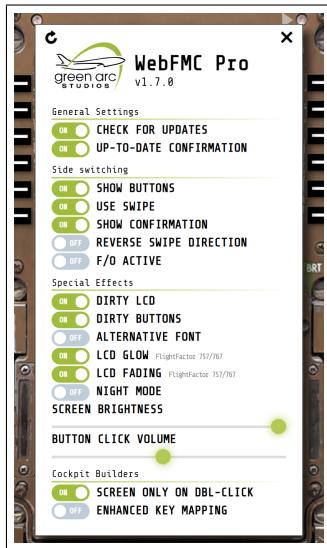
This IP address, followed by port number 9090 (e.g. <http://192.168.1.30:9090>) is the address to use when connecting to the WebFMC from your local network. **Please note that IP addresses in local networks may change**, so either verify it in X-Plane settings dialog every time, or modify the settings of your router to avoid this – see also [Hints](#) section.



10 Configuration options

Certain aspects of WebFMC look and behaviors can be configured via built-in Settings dialog. The dialog can be invoked by tapping or clicking the upper right area above FMC screen. These options are specific to every web browser instance, so you can tweak them individually for each device you're using.

Note a small reload icon in the left top corner of the configuration screen. There are some circumstances when it may be useful to refresh WebFMC client state. Clicking this has the same effect as clicking reload button on any web browser.



The options are divided into functional groups.

▪ General Settings

- Check for Updates: every time you connect to X-Plane, WebFMC will check if a new version of the plugin is available (it will not be downloaded automatically).
- Up-To-Date Confirmation: enables or disables extra notification confirming that you're on the latest version if no update has been found.

▪ Side Switching²

- Show buttons: shows triangle buttons at the top of FMC chassis
- Use Swipe: enables swipe gesture on FMC screen
- Show Confirmation: enables confirmation message each time the side is changed
- Reverse Swipe Direction: makes swipe gesture work in opposite direction if you find default one to be counterintuitive
- F/O Active: indicates and sets if F/O side is active

▪ Special Effects

- Dirty LCD: enables or disables visual effects applied to the FMC screen (such as dirt, smudges etc.)
- Dirty Buttons: enables or disables visual effects applied to FMC buttons.
- Alternative Font: enables other font on LCD screen

²If supported by the aircraft.

- LCD Glow (FlightFactor 757/767 only): mimics CDU glow effect
- LCD Fading (FlightFactor 757/767 only): adds fading effect visible when switching some CDU pages
- Night Mode: enables or disables night effect
- Screen Brightness: slider to control brightness of the CDU screen
- Button Click Volume³: slider to control sound volume

- Cockpit Builders

- Screen Only On Dbl-Click: enables or disabled access to screen only mode (see Hints section for more information on using this functionality).
- Enhanced Key Mapping: enables function and line select key mappings (see [Enhanced Key Mappings](#) for more details).

10.1 Options by URL

Several options can be set through web browser location bar hash properties:

- *brt* - values between 0 and 100
- *screen* - set 1 to go into screen only mode
- *side* - set 0 to use left (captain) side or 1 for right (F/O) side
- *night* - set 1 to turn on night mode

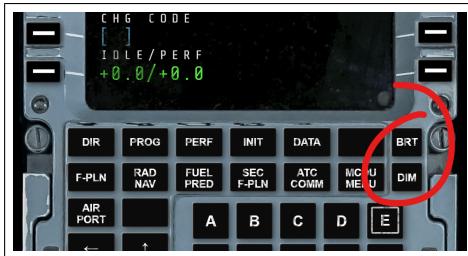
Variables can be put together as a comma separated list:

`http://<X-Plane IP>:9090/#brt=90,screen=1,side=0,night=0`

³Not available in older web browsers that don't support Web Audio API.

10.2 Screen Brightness

Note that screen brightness can be also set without going into options screen. In some cases (like Airbus) there are dedicated buttons:



while in other cases (some Boeings) hidden clickable areas have been provided around brightness control knobs:



11 Dual CDU

Switching between Captain's (left) and First Officer's (right) devices is supported by aircraft that provide such feature (see [Supported Aircraft List](#)). There are three ways to change active side.

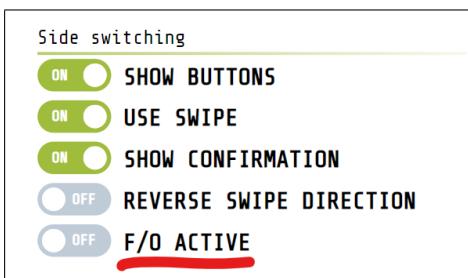
- Click arrow button pointing to the direction of a device you want to switch to.



- Swipe screen to the direction of a device you want to switch to. You can use an option described above to reverse swipe direction if you find it to be not intuitive.



- Set F/O Active option to On to switch to the right side or make it Off to change to left side.



By default a confirmation is shown each time you successfully switch side or if you want to switch to the side that you are already on. It can be turned off via settings.



12 Troubleshooting

If you can't connect to WebFMC, please follow the steps below before looking for help on the forums or contacting us:

1. Check if you can connect to WebFMC from same PC (i.e. the PC where your X-Plane is running) by visiting <http://127.0.0.1:9090>. If that works but you can't connect from any other device, than the problem lies somewhere in your network setup, or in a firewall.
2. If you can't connect to WebFMC from a mobile device, check that your mobile is actually connected to your **local wireless network**. A common mistake is to try to connect when your mobile device is only connected to LTE/3G network or connected to another wireless network (a public WIFI hotspot or another wireless network provided by local ISP).



3. Make sure your router doesn't have **AP Isolation** turned ON (also named Station Isolation, Client Isolation, Wireless Isolation etc. depending on router brand) as this can effectively prevent communication between devices in your local network. Either disable this option, or fine-tune it to enable connection between select devices if allowed by your router.
4. Make sure you're not trying to connect to 127.0.0.1:9090 or localhost:9090 from other devices as these addresses are only valid for connecting from same PC (X-Plane PC)! See the Installation section for more information on finding the correct IP to connect to.
5. Check that Windows Defender or other **firewall** or **antivirus** software on your system doesn't block connections to WebFMC. Refer to the documentation of that software for help on how to monitor and solve such problems.
6. Check that your **antivirus** software does not erroneously consider *webfmc-win.exe* file as a malicious software – see [Notes on Antivirus software](#) section below.
7. Check that the plugin is correctly installed in the *Resources/plugins* folder of X-Plane.
8. Check that the plugin is visible to the Plugin Admin in X-Plane. If it is not, then it's most likely installed incorrectly.
9. Examine *Log.txt* file of X-Plane and *WebFMC-log.txt* to verify that WebFMC plugin has been loaded and no errors related to it have been reported. If you see an error saying "Error Code = 1114 : A dynamic link library (DLL) initialization routine failed", that means you've reached a hard limit of plugins in X-Plane (all global plugins, plugin of current aircraft, plugins of all extra sceneries count towards this limit); this error comes from X-Plane and there is nothing WebFMC can do about it – you may need to remove some of the plugins. An error message saying "Error Code = 126 : The specified module could not be found" means you're missing MS Visual C++ Redistributable for Visual Studio – see [Requirements](#) section.

13 License errors

WebFMC Pro requires a license file (*webfmc-lic.txt*) and if it cannot be found in the WebFMC plugin folder or the file is corrupted, you will see an error message with a numeric error code. Here are the possible error codes with their meaning and possible remedy.



Error code	Meaning	Solution
40001	License file is missing, has wrong name (cannot be found) or cannot be read due to incorrect file permissions (e.g. the file is not readable for X-Plane process)	Make sure <i>webfmc-lic.txt</i> file is placed in <X-Plane>/Resources/plugins/WebFMC directory and is readable for regular users. Verify filename is exactly as the above and doesn't have any extra spaces. Make sure it doesn't have double .txt extension (i.e. <i>webfmc-lic.txt.txt</i>) which may be hard to notice at first in Windows Explorer.
40002 - 40016, 50001	License validation failed – license file is most likely corrupted	Re-install <i>webfmc-lic.txt</i> from the original email received after your purchase. Do not copy-paste the contents of license file via text editors, just save the attachment into the target folder.
400C0	The license was revoked (e.g. due to an abuse)	New license file needed.

14 Notes on Antivirus software

Note: WebRoot AntiVirus is currently known to be incompatible with WebFMC and any Go-based software, please see [Known issues](#) for more details.

We have observed a few cases (during the development, as well as with the released versions of WebFMC) where some Antivirus software classified *webfmc-win.exe* file as malware/trojan (giving it different names) and usually immediately removed it from the disk. As long as your system hasn't been infected by other means, this is definitely a **false-positive**. This binary is an executable file which provides core functionality of WebFMC and the reasons some antivirus software considers it malicious are:

- it opens a local, non-standard network port 9090 and listens for HTTP connections.
- it has relatively low number of users compared to other more common software (thus unknown or having not enough ratings in crowd-powered classifications).
- it's a static binary implemented in Go language and built with Golang compiler, making it non-standard compared to typical software built with MS toolchain and alike. The fact that it's a static executable that embeds some of the Go network and crypto libraries might be confusing/suspicious to AV tools, but that's just our guess.

If your Antivirus classifies *webfmc-win.exe* as malware, then you may need to add it to a list of AV exclusions and/or trusted applications. Before doing that make sure your system is in a good shape



(e.g. make a full AV scan of the system). Only then add an exclusion for WebFMC. How to do this largely depends on the software used – please refer to respective documentation of your antivirus software.

Some good starting points for the more popular AV tools are:

- Kaspersky: <https://help.kaspersky.com/KTS/2019/en-US/82507.htm>
- Bitdefender: <https://www.bitdefender.com/consumer/support/answer/2121/>

Important: Never, ever, under any circumstances run WebFMC as system Administrator nor disable your antivirus or firewall software completely to solve any issues with WebFMC or other aspects of X-Plane! Every good firewall / antivirus software offers functionality required to properly fix those kind of problems, so please consult their documentation for proper resolution.

15 Hints

15.1 Assign static IP or name to your X-Plane PC

Configure your home network (WIFI access point, router etc.) to set up a static IP address and/or an easy to remember name for your X-Plane PC. That way your X-Plane system will be accessible with same address every time, even after you restart the computer. It's beyond the scope of this manual to cover these aspects, so you should consult the documentation of your network device - look for the topics concerning DHCP and local DNS setup.

15.2 Add WebFMC web page to the home screen for app-like experience

On Android and iOS devices you can use “Add to homescreen” feature of the web browser (it may be named differently depending on the browser used) to create a shortcut for the WebFMC web app. That way WebFMC web page will be launched in the fullscreen mode with no navigation bar, location bar, buttons etc., providing an app-like experience. Note: this makes sense only as long as you configure your X-Plane system to use a static IP or a name (see first hint)!

Important: if using this functionality on IOS (iPad/iPhone), please see the Known Issues section at the end of this document for known IOS problems (and workarounds) affecting WebFMC and this mode.

- See the video tutorial for Android: <https://youtu.be/WAfKx827g6o>
- See the video tutorial for iOS: <https://youtu.be/bmCf4IDP9nA>

15.3 Prevent screen from locking on mobile devices

Web browsers on mobile devices cannot prevent screen from getting dimmed or locked after a period of inactivity. Therefore, for best experience on mobile devices we recommend you either turn screen saver off, or install an extra application that temporarily prevents the screen from locking.

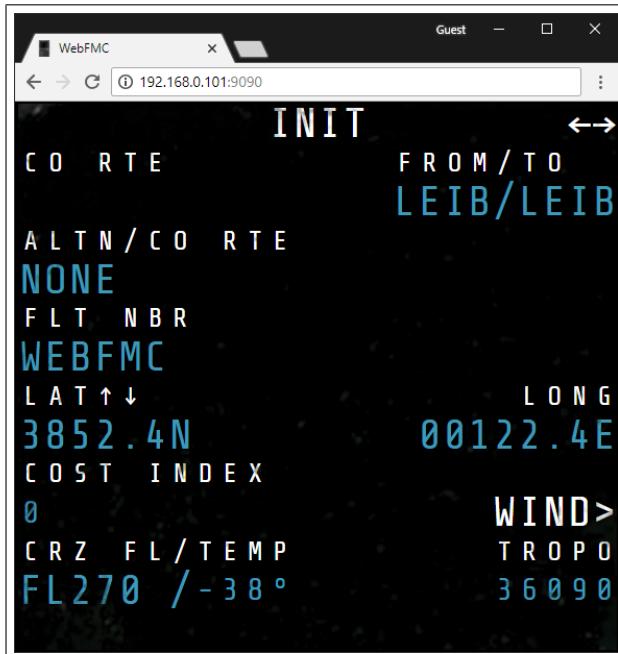
15.4 Use physical keyboard on the desktop

On the desktops you can use physical keyboard to easily enter data into the WebFMC. Apart from the regular alphanumeric keys WebFMC maps arrow keys and Page Up/Down keys to CDU arrows and PrevPage/NextPage keys (where applicable) and Enter key for Exec button in Boeing aircraft.

By turning on Enhanced Key Mapping option you will get all FMC keyboard mappings. For more details see [Enhanced Key Mappings](#).

15.5 Screen only mode

This feature is disabled by default, as it may be useful only in some specific scenarios like placing CDU screen contents inside external hardware (eg. Opencockpits FMC). Enable “Screen Only On Click” option in the Settings dialog and then click (or tap) on CDU screen to enter or leave screen only mode.



16 Contact

For technical questions, issues or bug reports please use [the official WebFMC forum](#). Please do not post your license or store order number / receipts on the forums.

For other matters, including problems with your license, please contact us at contact@greenarcstudios.com.

Before reporting any issue please first check the [Troubleshooting](#) section of this document as well as the list of [Known issues](#) below. If you think you found a bug, please provide the following:

- Clear description of the problem.
- Steps to reproduce it (if the problem can be reproduced).
- X-Plane's *Log.txt* and *WebFMC-log.txt* log file. **Note, these files must be collected after the problem occurred and before starting X-Plane again as they will get overwritten!**

17 Known issues

This is the list of currently known issues, some of which may be bugs of the planes or 3rd party software.

1. WebRoot AntiVirus software (Windows): WebRoot prevents WebFMC from working at all, causing random crashes of webfmc-win.exe. This affects all Go-based software and has been discussed via Go issues [40878](#) and [41138](#). It has been confirmed that only uninstalling WebRoot completely fixes the issue with Go runtime – just disabling it is not enough.
2. ToLiss A319
 - (a) Small up/down arrows right to the scratchpad area of the flightplan page are not displayed by WebFMC because they are not exposed by MCDU-related datarefs. The problem has been confirmed with ToLiss and will be addressed in future update of A319 and WebFMC.
 - (b) Due to a small alignment issue of the datarefs responsible for MAG/WIND values on the APPR page, the “degree” character may be missing (overwritten by overlapping number value). Workaround for this might get implemented in WebFMC with later update (if it’s not corrected by ToLiss).
3. EADT x737 (x737UFMC)
 - (a) FMC datarefs do not include color information. WebFMC implements a simple workaround for this for the LEGS page to show the first waypoint in blue, however it may not always work. No colors are present on other pages.



- (b) The formatting of text provided by x737UFMC datarefs is sometimes inconsistent, therefore there may be small discrepancies in alignment and spacing between what you see in WebFMC and in the cockpit.
 - (c) The dataref for N1LIMIT button is missing in x737UFMC, therefore this button cannot be activated from WebFMC. Note, it doesn't work in the x737 cockpit either, so to invoke N1 LIMIT page you need to either use the x737UFMC popup window in the cockpit, or reach the page via the MENU → THRUST LIMIT page of the FMC.
4. SSG E170/E190, Boeing 747-8
- (a) With E-Jets as well as 747-8v2, WebFMC interacts with the co-pilot (right-side) FMC. This is due of the limitation of the datarefs of these aircraft. Also, opening up in-cockpit popup CDU temporarily switches internal datarefs to first CDU affecting WebFMC operations. Closing the popup restores normal operation of WebFMC.
 - (b) Note that to revise flight plan on co-pilot FMC you need to use right side ND.
 - (c) FMC datarefs have various inconsistencies when it comes to colors, formatting and alignment of the text, therefore some differences may be observed between FMC pages in the cockpit and in WebFMC.
 - (d) Datarefs and in result WebFMC screen contents are not being updated while in external views (Circle view, Forward with nothing view, etc.).
5. General
- (a) Some aircraft provide FMC data even when powered off, so you will see FMC contents in WebFMC even if cockpit FMC is empty. This will be addressed on plane-by-plane basis in future updates.
 - (b) Some of Enhanced key mappings may not work correctly in selected browsers other than Google Chrome.
 - (c) Since WebFMC version 1.6.0 button click sound is not supported in older web browsers that don't support Web Audio API.
6. iOS
- (a) If running WebFMC via a homescreen icon, make sure WebFMC app on your mobile **is started after X-Plane**, as otherwise the connection error will be cached by iOS and a restart of your mobile device will be required in order to reconnect. This is an issue of iOS, not WebFMC.
 - (b) If running WebFMC via a homescreen icon, make sure to restart your mobile device after installing a new WebFMC update, as otherwise iOS may still serve an old version from its internal cache (with undefined behavior at best, or non-working WebFMC at worst). Again, this is a known issue of web app caching on iOS.
7. Jar Design 320



- (a) ~~Airways are not displayed when editing flight plan. This is due to a bug of the aircraft as respective dataref is not populated correctly. The problem has been confirmed with Jar Design and should be fixed in future updates of JD320.~~
(fixed in JD320 v3.4+)
- (b) ~~Due to inconsistencies in the text alignment of the MCDU datarefs exposed by JD320 and the use of non-monospace fonts, some MCDU lines in WebFMC may have slightly different alignment than on the MCDU in the cockpit.~~
(fixed in JD320 v3.4+)

18 Authors

WebFMC authors are:

- Paweł Stołowski - plugin and backend programming
- Adam Różewicki - web client programming

Special thanks to:

- *Hanna Bastian (Bastian Grafik-Design) for Green Arc Studios logo design.*
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- *Steve Wilson (X-Crafts) for specification of Tekton FMS and for Tekton textures.*

19 Third-party licenses

WebFMC incorporates third party components whose licenses are listed below:

- Share Tech Mono, VT323 fonts - released under the terms of Open Font License -
http://scripts.sil.org/cms/scripts/page.php?site_id=nrsi&id=OFL_web



- Roboto font - released under the terms of Apache License, Version 2.0 -
<http://www.apache.org/licenses/LICENSE-2.0>
- ProFontWindows - released under the terms of ProFont License -
<https://www.fontsquirrel.com/license/ProFontWindows>
- Vue.js, Vuex, vue-notification, vue-js-toggle-button, vuex-persist, es6-promise, compare-versions, whatwg-fetch - released under the MIT license
- Boost library - released under the Boost Software License -
<http://www.boost.org/users/license.html>
- Tekton FMC images used with permission from X-Crafts.



A Supported Aircraft List

As of time of writing this document, Web FMC Pro supports the following FMCs/aircraft:

Aircraft	Remarks	Dual CDU
Default X-Plane FMC	requires X-Plane 11.35+	Yes ⁵
A319 by ToLiss		Yes
A320 Ultimate by FlightFactor		Yes
A320 by Jar Design	requires JD320 v3.4r1+	No
A321 by ToLiss		Yes
A330 by Jar Design	requires JD330 v3.1r2+	No
A350 XWB Advanced by FlightFactor	old style CDU only	No
B737-300 by IXEG		Yes
B737-800 Zibo Mod		Yes
B737-900U Ultimate		Yes
B737-700U Ultimate		Yes
EADT x737 with x737UFMC	all variants; requires x737UFMC	No
EADT x737 with Default FMC	all variants	Yes ⁶
B747-8 by SSG (VMAX)	all variants; old v1.9.2+ and new v2.1+	No ⁷
B757v2 by FlightFactor	all variants; requires 757 v2.2.13+	Yes
B767 by FlightFactor	all variants; requires 767 v1.2.6+	Yes
B777 by FlightFactor	all variants;	No
CRJ-200 by JRollon		No
Embraer E170 by SSG	requires v1.4+	No ⁷
Embraer E195 by SSG	requires v1.4+	No ⁷
ERJ Family by X-Crafts		Yes ⁸
MD-80 by Rotate	requires MD-80 v1.42+	No

⁵Depending on the aircraft implementation, only one of the CDUs may be present in the cockpit and in use and it may sometimes be F/O CDU. WebFMC will always let you switch between both CDUs even if only one of them is present in the aircraft.

⁶WebFMC supports dual CDU with Default FMC, but x737 uses only one side.

⁷While the aircraft has dual CDUs in the cockpit, due to technical limitations WebFMC has access to just one, and it's always F/O CDU – see Known Issues section for more details.

⁸TektonFMS on the left side, Default FMC on the right side



B Enhanced Key Mappings

Following table depicts function and line select key mappings when Enhanced Key Mapping option is set to ON. Note that it may prevent default behaviors of certain key assignments in the browser.

Key	Boeing								Airbus		
	Zibo / Ultimate	FF 757/767	IXEG 737	Default FMC	FF 777	SSG 747	EADT x737	Toliss A319/A321/A350	FF A320	JD 320/330	
F1 - F6	LSK1 - LSK6										
F7 - F12	RSK1 - RSK6										
cursor	next page / prev page								slew up/down/left/right		
page up/down									slew up/down		
Enter	exec										
Insert	init_ref	initref	index	init_ref	INITREF			DirTo	Page1	dir	
Home	rte		fpln	rte	RTE			Prog	Page2	prog	
End	clb			dep_arr	DEPARR	CLB.x737		Perf	Page3	perf	
[crz			altn	ATC	CRZ.x737		Init	Page3	int	
]	des			vnav	VNAV	DES		Data	Page4	data	
:	menu	dir	menu	dir.intc	fix	FIX	MENU	Fpln	Page5	fpln	
' (quote)	legs				LEGS			RadNav	Page6	radnav	
\	dep_app	dep_arr	deparr	dep_arr	hold	HOLD	DEPARR	FuelPred	Page7	fuel	
' (backtick)	hold				fmc_comm	FMCCOM	HOLD	SecFpln	Page8	sec	
=	prog				PROG			ATC	Page9	atc	
*	n1_lim	mcdu_menu	mcdu_menu	fix	mcdu_menu	MENU	NAVRAD	Menu	Page10	mcdumenu	
Control	fix			navrad	nav_rad	NAVRAD	FIX	Airport	Page11	airp	
Alt									Overfly	Page12	ovfy

Key	Other				
	Rotate MD-80	SSG EJets	JRollon CRJ-200	X-Crafts ERJs	
F1 - F6	LSK1 - LSK6				LSK1 - LSK5
F7 - F12	RSK1 - RSK6				RSK1 - RSK5
cursor	slew up/down/left/right				
page up/down	next / prev				
Enter	EXEC		exec		
Insert	INIT	INITREF	dir.intc	AIRP	
Home	DIR	VNAV	fpln	VOR	
End	RTE	LEGS	dep_arr	NDB	
[LEGS	PROG	hold	FIX	
]	CLB	RTE	index	LATLON	
:	CRZ	MENU	legs	SELECT	
' (quote)	DES	FMCCOM	vnav		
\	MENU	NAVRAD	mcdu_menu		
' (backtick)	FIX		radio		
=	DEAR		perf		
*	HOLD		mfld_menu		
Control	PROG				
Alt					

C Global Javascript Variables

Global web browser javascript object `window.webfmc.lights` provides WebFMC indicator lights state. Following lights are available depending on aircraft implementation:

- `dash_light`
- `dspl_fail_light`
- `dspy_light`
- `exec_light`
- `fail_light`
- `fm1_light`
- `fm2_light`
- `fm_light`
- `ind_light`
- `menu_light`
- `msg_light`
- `ofst_light`
- `rdy_light`