

Item	Apple TV	Mac Mini M4	Desktop PC
Overview	<p>Easy to setup/use, mostly just works so long as you don't try to do too much with it.</p> <p>You may want to install Zwift onto a desktop/laptop anyway to create/edit custom workouts, etc.</p>	<p>Seems like a solid option. For only a little bit more than a PC with used components, it would require a lot less research to set up, and that time savings may be worth the extra money</p>	<p>May only be worth it if you're looking for a new challenge/project, must have the absolute best graphics, or use the PC for something else.</p> <p>Zwift graphics are not as good as other PC games.</p>
General Source Material	<p><a href="https://zwiftinsider.com/apple-tv-pro-con/">https://zwiftinsider.com/apple-tv-pro-con/</a></p> <p>Everything is well documented. I have personal experience</p>	<p><a href="https://www.youtube.com/watch?v=oLoL_zb2lns">https://www.youtube.com/watch?v=oLoL_zb2lns</a></p> <p>video not 100% fair when comparing to PC and refers to "ultra" in a confusing manner</p> <p>Not well documented...yet. I do NOT have personal experience. I assume the Mac mini in general will be similar to desktop PCs in many cases below, unless otherwise noted</p>	<p>Easy: <a href="https://zwiftinsider.com/zwift-pc-guide-2/">https://zwiftinsider.com/zwift-pc-guide-2/</a></p> <p>more:</p> <p><a href="https://www.facebook.com/groups/zpcmr/files">https://www.facebook.com/groups/zpcmr/files</a></p> <p>Everything is well documented. I have personal experience</p>
<p><b>Quality (of graphics) / Simplicity / Cost Pick Two</b></p> <p>(to reference Keith Bontrager quote "light, good, cheap. Pick two")</p> <p>More details below</p>	<p>Simplicity &amp; Cost</p> <p>Loss of points in quality due to low graphics mode &amp; low framerate, which is most noticeable in large groups</p> <p>Loss of points in simplicity but only if you want to create custom workouts as that would require a separate install on a computer/laptop</p>	<p>Quality &amp; Simplicity</p> <p>Loss of points for Cost because you can get AppleTV or PC for less, but a PC isn't that much less</p>	<p>Quality &amp; Cost - Loss of points for simplicity because in order to save money, you really have to do a bit of research and build your own computer, with ideally a <i>used</i> video card.</p> <p>OR</p> <p>Quality &amp; Simplicity – If you go with the simple option, you're going to spend the most of any of these three options. Considerably more.</p>
Size	<p>Tiny. Even attaches to the back of a TV if you want</p>	<p>Very small. Slightly bigger than Apple TV</p>	<p>Desktop PCs take up more space. Don't be tempted to get a Small Form Factor (SFF) as GPU options will be limited.</p>
Portability	<p>Sure, but is the rest of the gear really portable?</p>	<p>Sure, but is the rest portable?</p>	<p>Desktop PC is not portable. Sure, a laptop is portable, but normal laptops with integrated graphics do not make good gaming devices, and real gaming laptops are expensive, not upgradeable, and may overheat.</p>

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<p><b>Graphics mode</b> – level of detail</p> <p>Zwift determines graphics mode from your GPU only. Cannot be overridden.</p> <p>For a good comparison, go to <a href="https://www.youtube.com/watch?v=BJqPgU55fpQ&amp;t=786s">https://www.youtube.com/watch?v=BJqPgU55fpQ&amp;t=786s</a> on a big screen, switch the quality setting to 1080p60</p>	<p>“Basic+” which is pretty good if that’s all you’re familiar with.</p> <p>Basic+ expands on basic by adding limited shadows.</p> <p>Maybe fewer bikes in group events?</p>	<p>High</p> <p>Barely noticeable difference between a Desktop PC in Ultra. See the video to the left</p>	<p>Aim for a discrete graphics card with high or ultra rating. Used NVIDIA GTX 970 from 10 years ago seem to be still popular/cheap. Anything RTX.</p> <p>In high/ultra, there are shadows on bikes, birds, planes, etc. more gradients on shadows, fog, etc. more details in the distance. More vibrant colors. Darker darks, and a bike headlight to compensate those darks.</p> <p>More Info: <a href="https://www.facebook.com/groups/zpcmr/files">https://www.facebook.com/groups/zpcmr/files</a> Graphics cards Recommendations</p>
<p><b>Resolution</b></p>	<p>1080p for the virtual world</p> <p>I believe the HUD displays at native resolution (i.e. up to 4K)</p>	<p>Up to 4K, user customizable.</p>	<p>Up to 4K, user customizable. Note that you can set in-game resolution to be different from the Windows resolution but picture quality will be limited by windows resolution.</p> <p>Ultra-wide monitors may not be supported</p>
<p><b>Frame rate</b></p>	<p>30fps max; drops in groups</p>	<p>60 fps @ 4K 80 fps @ lower resolution</p>	<p>As good as your graphics card/CPU/display will support at that resolution. Aim for 60+ which is nice and smooth.</p>

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<b>CPU.</b> Zwift only runs one thread at a time, so multiple cores do not benefit Zwift. CPU power is required to process updates from the servers for higher framerates, so slow CPUs, high detail (Makuri), or crowded events may suffer lower framerates	Barely good enough	Good. Unsure how it will handle large crowds or the detailed Makuri islands	Minimal 4 <sup>th</sup> generation intel. Ideally 12 <sup>th</sup> generation Intel 12100 for better framerates and best bang for your dollar.  Even Faster for more consistent framerates. Anything faster than 12400 will have diminishing returns unless you use the PC for anything other than Zwift  <a href="https://zwiftinsider.com/zwift-pc-guide-2/">https://zwiftinsider.com/zwift-pc-guide-2/</a> (“CPU Bottleneck” section)  Even More Info: <a href="https://www.facebook.com/groups/zpcmr/files">https://www.facebook.com/groups/zpcmr/files</a> Contents of above web page and more
<b>Initial app load</b>	Fastest of the options because there is less that needs to load	?	There’s an extra click after first opening the App. A little slower since there’s more to load, but not much. If you’re running an SSD it should be about 30-60 seconds. Avoid magnetic HDDs in general.  Faster performing drives don’t seem to improve app load times significantly
<b>Software installation time</b>	Several minutes? It’s been a while	?	An hour! Future updates only take a minute or more, depending on the enhancements, your internet, your PC
<b>Software updates</b>	Supposedly automatic, but I frequently needed to manually update for the latest version of both the app and tvOS.  Historically, updates were delayed by a few days due to the ecosystem, but this may be getting better.  As of 2024, I believe Apple TV only receives monthly updates.	?  Zwift updates are generally available twice monthly for PC/Mac	Windows OS: patch Tuesday. Usually easy to rollback if required.  Zwift: launcher runs in the background to auto-update or upon app launch.  Zwift updates are generally available twice monthly for PC/Mac

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<b>General usability</b>	Navigating with the Apple TV remote has gotten better, but still cumbersome at times.	Keyboard and mouse will win over a remote control, unless the size is an issue.	Keyboard and mouse will win over a remote control, unless the size is an issue.
<b>Stability</b>	Generally very good, if you are within the Bluetooth limit. Stability may suffer if you require connections through the companion app.	?	Good depending on what else you have installed on the system. Occasionally, windows/drivers updates could theoretically cause problems
<b>Connectivity (ANT+ or Bluetooth)</b>  Bluetooth is more reliable	Native Bluetooth only	Native Bluetooth OR dongles for BLE or ANT+	Native Bluetooth OR dongles for BLE or ANT+
<b>Bluetooth limit</b> You can exceed the limit by pairing through the zwift companion app, but this is an extra “hop”	3, <i>including</i> the remote. Some people unpair the remote and use an iPhone as their remote	7	7, but the limit may depend on your system
<b>Diagnosing problems</b>	N/A - ATV is a black box. Literally	You can upload logs to <a href="https://youtu.be/BJqPgU55fpQ">Zwiftalizer</a> . Watch the <i>long</i> video for details: <a href="https://youtu.be/BJqPgU55fpQ">https://youtu.be/BJqPgU55fpQ</a>	You can upload logs to <a href="https://youtu.be/BJqPgU55fpQ">Zwiftalizer</a> . Watch the <i>long</i> video for details: <a href="https://youtu.be/BJqPgU55fpQ">https://youtu.be/BJqPgU55fpQ</a>
<b>Tweaking</b>	N/A - ATV is a black box. Literally	?	You can tweak config files for various reasons
<b>Pausing rides</b> - Rides pause and shift to lurker mode after a while, allowing you to complete a long route over long periods of time	I haven’t had success with spanning a long ride beyond 2 halves and a couple of days. When it fails, you cannot recover the lost ride. (take photos)	?	In theory, if windows updates are disabled, this will be more likely.
<b>Crashes mid-ride</b>	In theory you can resume the ride after power failure or crash or whatever, but results may vary. There is no way to grab in-process rides and upload to Strava.	?	In the event of crashes, you should be able to resume the ride, but results may vary. Recover the lost ride activity and post to Strava. <a href="https://zwiftinsider.com/retrieve-lost-ride/">https://zwiftinsider.com/retrieve-lost-ride/</a> If you want to resume after power failure, make a backup of the in-process FIT file before resuming, in case you end up corrupting the FIT file
<b>Setup Support</b>	None, but it’s usually not needed, Various online communities including Zwift Riders: <a href="https://www.facebook.com/groups/340461319493513">https://www.facebook.com/groups/340461319493513</a>	?	Many PDFs explaining the minimum setup for Zwift PCs, including misc FAQs. Be sure to read <i>all</i> of the PDFs before posting a question! Beyond that, the group is helpful <a href="https://www.facebook.com/groups/zpcmr/">https://www.facebook.com/groups/zpcmr/</a>

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<b>Training</b> – makes you stronger	+1	+1.01	+1.01 (only makes you stronger if you like the graphics so much better that you end up using it more and/or creating your own custom workouts, etc)
<b>Remote Control</b>	Remote control is difficult in many scenarios, even after 2022’s improvements. Does not allow you to create custom workouts.	Keyboard for full control. You can optionally get a wireless keyboard with a touchpad for maximum control from the bike.	Keyboard for full control. You can optionally get a wireless keyboard with a touchpad for maximum control from the bike. <a href="https://www.amazon.com/dp/B01E0BUPW2">https://www.amazon.com/dp/B01E0BUPW2</a>
<b>Random Features</b>	No feedback	Some features that get added negatively affect performance. For instance, the general recommendation is to disable video screenshots as it’s a constant performance drain and the coolness factor is minimal  Multitask with other apps. Eg. Streaming, TrainerRoad, etc	Some features that get added negatively affect performance. For instance, the general recommendation is to disable video screenshots as it’s a constant performance drain and the coolness factor is minimal  Multitask with other apps. Eg. Streaming, TrainerRoad, etc
<b>Nerd Factor</b> – Zwift by itself has some nerd factor, that’s a given	-1	+1	+1 if you use a pre-built PC +20 or better if you build your own. Extra points if you can maintain 4K 60fps with minimal cost.
<b>Cost</b>	\$180ish for Apple TV 4K; less if used  \$200ish if you get a new model with Ethernet built-in for more stability	\$540  Does not include keyboard/mouse	Varies. Minimally ~\$450 if you build mostly new (used GPU), though you can buy used/upgrade for less than a new Apple TV (Frankenstein PC)  Here’s a sample part list from the ZPCMR Facebook group: <a href="https://pcpartpicker.com/list/4c3RqR">https://pcpartpicker.com/list/4c3RqR</a> (video card is an estimated used price)  Does not include keyboard/mouse

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Ease of setup	Mostly Plug and Play. Logging into tvOS is more complicated if you don't use an iPhone.	Should be pretty easy, especially if you're already familiar with macOS	<p>This will take the most time, research, energy</p> <p>More info: <a href="https://zwiftinsider.com/zwift-pc-guide-2/">https://zwiftinsider.com/zwift-pc-guide-2/</a></p> <p>Even more info: <a href="https://www.facebook.com/groups/zpcmr/files">https://www.facebook.com/groups/zpcmr/files</a></p>