1. HARDWARE SETUP

Recommended Setup:

- 1 gaming PC per Omni
  - **Recommended:**
    - Processor: Intel™ Core™ i7-6700 equivalent or better
    - Graphics card: NVIDIA GeForce™ GTX 1070 equivalent or better
    - RAM: 16 GB RAM or more
  - Use a wired keyboard and mouse instead of wireless to avoid empty-battery issues during operations
- 1 TV per Omni to display the player’s gameplay visuals
  - **Recommended:** screen size of 42” or more
- 1 speaker set per Omni to provide sound
  - Audio is crucial to attract customers
  - **Recommended:** use speakers instead of headphones for several reasons:
    - Headphones create additional cable management challenges (wired) or battery and RF issues (wireless)
    - Headphones prevent communication between the player and operator, which is sometimes necessary during gameplay
    - Gameplay audio attracts customers to your setup
- 1 HTC Vive HMD per Omni
  - Watch our video on how to best set up the Vive: [https://youtu.be/cQKUgjrlWx8](https://youtu.be/cQKUgjrlWx8)
  - **Recommended:** Route the Vive cable only through the top strap of the HMD, NOT the back strap, to enable a more comfortable user experience:
Multiple Omnis:

- Use only one pair of Vive base stations (Lighthouse tracking stations) to track up to 5 Vive HMDs and hand controllers
  - More than one pair of base stations will result in interference
- Connect multiple Omni PCs via a Local Area Network (LAN) for multiplayer gameplay

Staff Requirements:

- **Recommended**: 1 staff member per each Omni at all times
- During down times, 1 well-trained staff member can handle up to 2 Omnis

2. SOFTWARE SETUP

Omni Connect:

- Download and install Omni Connect from [www.virtuix.com/download](http://www.virtuix.com/download)
- Follow instructions per the Omni Connect Guide in Appendix A
  - Feel free to create a local profile instead of an Omni Online profile (Omni Online requires an internet connection and is meant for consumer-use)
- **Important notes**:
  - Connect the Tracking Pods to their designated PC via the included USB cables to link them to a designated Omni (they will not work otherwise)
    - **Recommended**: in a multi-Omi setup, mark each Pod with a numbered sticker to indicate to which Omni they are linked (number each Omni accordingly)
  - Leave your Omnis in Gamepad Mode at all times to ensure they work with Virtuix games
  - In a multi-Omi setup, set different channels for each Omni (see guide)
  - To accommodate bigger users, use the “Forward Only” functionality in the Advanced menu (see guide)
Omni Arena:

- Ensure SteamVR is running and the Vive HMD and Omni are connected and turned on prior to launching the game
- Omni Arena currently has three maps: Tutorial, Thunderdome, and Gaiana
  - **Recommended**: Start novice players with the Tutorial level followed by Thunderdome; charge for an additional gameplay session to progress to Gaiana
- For multiplayer gameplay:
  - Connect all PCs via a Local Area Network (LAN)
  - Designate one PC as the “host” of the multiplayer session by choosing “Create Match” in the game’s main menu
  - On all other PCs, select “Find Match” to find the host’s game, then double click on the match name to join the game
  - **Recommended**: When a single customer wants to play Omni Arena, try to match him with a second player for a multiplayer session or have a staff member act as second player on a second Omni (multiplayer gameplay is more exciting and fun than single-player gameplay)
- To manually kill enemies in the game, press the period key ("." ) on the keyboard (note: this can only be done on the “host” PC that has created the match)
  - **Recommended**: When a novice player is taking too long to progress through the game, press the period key ("." ) to help the game move forward
- Contact us for a more detailed guide on how to launch and play Omni Arena.

TRAVR: Training Ops and TRAVR: Shadow Ops

- TRAVR provides three possible movement modes under the Game Options menu:
  Coupled (walking direction is fixed to looking direction), De-Coupled (walking direction is independent from looking direction), and Soft-Coupled (combination of coupled and de-coupled)
  - **Recommended**: Select Coupled mode for novice players, as this results in the easiest gameplay experience
  - In Soft-Coupled and De-Coupled modes, the player needs to calibrate by looking forward while standing still and pressing the Vive touchpad button
- **TRAVR**: Training Ops has 10 levels of varying length and difficulty
  - **Recommended**: Start novice players with the easiest levels (starting at the top left) progressing to the more difficult levels (ending at the bottom right)
  - Press “L+1” to progress to the “Thank you for playing” screen (in case a novice user progresses too slowly) and “L+0” to return to the main menu screen
3. OMNI OPERATIONS

- **Shoe selection:**
  - **Recommended:** give players a shoe size that is a size smaller than their regular size (the Omni Shoes run approximately ½ size large and function better when fitting snugly)

- **Helping novice users in/out of the Omni and training them to walk on the Omni:**
  - **Recommended:** Follow the Training Script of Appendix B closely (given the proper verbal instructions has a major impact on a novice user’s ability to walk properly on the Omni, which determines the quality and fun of his or her experience)
  - Watch our “Novice User Training” video here: [https://youtu.be/a0uVRRB3K1s](https://youtu.be/a0uVRRB3K1s)
  - Watch a video on how to walk on the Omni here: [https://youtu.be/yNuSih79ETU](https://youtu.be/yNuSih79ETU)

- **Big players:**
  - A player with a big waist size may not be able to move the Harness forward enough in the Ring to trigger forward movement instead of backward movement or strafing. As a result, a big player may move backward inside the game instead of going forward.
  - **Recommended:** Set the “Forward Only” mode functionality in the advanced menu of Omni Connect

- **Attract crowds and customers:**
  - Visual and audio cues attract customers and spectators to the Omni spectacle.
  - **Recommended:** When no customers are playing, always have at least one staff member walking inside an Omni to attract attention
    - **Note:** if this staff member is operating the booth by himself, he need not play a game; just walking inside the Omni will attract visitors and allows the staff member to see and talk with potential customers
  - **Recommended:** Use speakers to blast gameplay audio as loud as tolerated

- **Cleaning the Omni:**
  - Keep the Omni Base clean (free of dust and particles) at all times to ensure smooth movement
  - **Recommended:** Wipe the Omni Base with a dry or damp cloth after each gameplay session (see our video with cleaning instructions here: [https://youtu.be/BmQ3zjK65rw](https://youtu.be/BmQ3zjK65rw)). Do not use wet wipes to clean the base, as they may leave a sticky reside which will negatively impact the user experience.

- **HMD:**
  - Clean the lenses of the HMD with a lens cloth after each gameplay session
  - The Vive has a turning knob at the bottom right to adjust the distance between the lenses; the average is a distance of 65mm for a comfortable experience
- **Recommended:** Verify the lens distance between gameplay sessions and adjust this setting back to the average of 65mm in case players have changed this setting during their session. Failure to do this may result in eye-strain and simulator sickness.

4. **TROUBLESHOOTING AND FAQ**

- For assistance, contact Virtuix at [support@virtuix.com](mailto:support@virtuix.com)
- For emergencies, contact Chris Shelton at [chris.shelton@virtuix.com](mailto:chris.shelton@virtuix.com)

**I am moving on the Omni but my movement is not being recognized in the game. What should I do?**

Instructions:

1. File exit from Omni Connect.
2. Turn the Omni off and then back on.
3. Turn Pods off and then back on.
4. Restart Omni Connect.
5. If Steps 1 to 4 did not solve the issue, connect the Pods to the PC via the provided USB cables. After the connected Pods have been recognized in Omni Connect, disconnect the Pods.
6. Be sure to insert the Pods into the shoe cradles. Pods will not be detected wirelessly otherwise.
My Omni Pods continuously connect/disconnect instead of staying connected. My walking is stuttering or unresponsive.

Change the “Omni Selection” number on the Tools->Advanced screen. This selection changes the Radio Frequency (“RF”) channels on which the Omni communicates. You may be experiencing RF interference because of other devices in the area. See the Omni Connect guide for step-by-step instructions in Appendix A.

How does the Omni recognize FWD vs. BACKWARD vs. STRAFE, and how can I strafe on the Omni?

The Omni uses sensors in the Support Ring to detect the position of the Support Harness in the Ring and infer what movement is performed by the user. To move forward, the Support Harness needs to be positioned in the forward half of the Ring. To move backward, the Support Harness needs to be positioned in the back half of the Ring. To strafe, the Support Harness needs to be positioned in the back half of the Ring. A strafe will not be detected when the Harness is positioned in the forward half of the Ring (a user typically does not lean forward when strafing).

I’m walking forward in the Omni, but my character is walking backward.

If the Harness is pushed to the back of the Ring, foot movement will result in backward motion or strafing. Ensure you have the Harness on correctly (Velcro belt across your belly), and that you are not inadvertently pushing the Harness back in the Ring while trying to walk. Also make sure the Ring cable is connected between the Ring and the left Tower.

To accommodate bigger users, please select the “Forward Only” mode in the Advanced menu of Omni Connect. See the Omni Connect guide for instructions in Appendix A.

I’m playing a Virtuix game, but the walking speed is not analog.

Check in Omni Connect that your Omni is in Gamepad mode. If it is in Keyboard mode, you may lose analog speed. See the Omni Connect guide for details in Appendix A.
A.1. SOFTWARE INSTALLATION

1. Connect both Pods to your PC using the included USB cables. Your Pods will not be detected unless they have been plugged into your PC for initial setup.


3. Run the installer and then launch Omni Connect.

4. Create a new profile or download an existing one. Click Cancel to skip this step.

5. Fill out the registration form to create an Omni Online profile.
   a. After you’ve entered your details, click “Create Profile”.
   b. You will need to verify your user profile via the verification email sent to your email address.
A.2. SELECT YOUR OMNI MODE

The Omni has several modes, accessed by clicking the controller icon.

- “Gamepad” - for games made with the Omni SDK, such as Omni Arena, or for applications that use standard gamepad input
- “Keyboard” - for legacy games or applications that use WASD for movement
- “Bluetooth” - for mobile games that use a gamepad

If you wish to use the Omni with a mobile VR headset, you will first need to pair the Omni with your phone.

  a. In Omni Connect, set the Omni to “Bluetooth” mode.
  b. From the mobile device, pair to the Omni. It may appear as “OmniV001”.
  c. The default pairing code is “0000”.
  d. The Omni will now be sending gamepad input to the mobile device.
  e. Follow your Mobile VR HMD’s instructions for launching a VR game with your device.

**NOTE:** A player with a big waist size may not be able to move the Harness forward enough in the Ring to trigger forward movement instead of backward movement or strafing. As a result, a big player may move backward inside the game instead of going forward.

To accommodate bigger users, please select the **Forward Only** mode in the Advanced menu of Omni Connect. “Forward Only” mode disables strafing and backward movements, and instead translates all movements of the user to “Forward”.

**NOTE:** The Omni Gamepad mode can emulate a standard gamepad controller but not an XBOX controller. Games that require XBOX controller input will not recognize the Omni. To do so, additional software like X360CE is needed.
A.3. MULTI-OMNI CHANNEL SELECTION

If you have multiple Omnis in close proximity, it’s important they are operating on different radio channels to avoid interference.

1. Go to the Advanced Window of Omni Connect and click on the “Change Omni Selection” button. You have a choice of 13 channels on which the Pods and Omni can communicate. Choose a unique channel number and select ‘Set’.

2. Repeat this process with any other Omni you own, but be sure to select a different channel for each Omni. You may find it helpful to physically label the Omnis with their channel number.

3. Be sure to connect the Pods intended for use with each Omni to the PC via the USB cables after you have changed the Omni selection. This is necessary to update the Pods’ radio channel setting. You may wish to label the Pods, or keep them separate so that you know which Omni they are assigned to.

Note that once set through Omni Connect, the Omni will retain its channel setting. You can swap PCs without having to reset the channel settings in the application, i.e. Omni Connect will read the channel setting saved on the Omni.
A.4. SOFTWARE AND FIRMWARE UPDATES

1. Be sure that both Pods are connected to your PC via the provided USB cables when updating your Omni software.

2. See if updates are available by clicking the Omni logo and then “Check For Updates”.

   a. If firmware updates are available, you can select “Update All”.

   b. To see the update list, select “Show Details” from the drop down menu.

   c. Once everything is up-to-date, you can close the update window.
A.5. TROUBLESHOOTING TIPS

My Pods are powered on and fully charged, but are not showing up in Omni Connect.

The Omni Pods will only be detected in Omni Connect when they are locked into your Omni Shoes.

I see two Pods indicated as being on the same Shoe in Omni Connect.

Unlock and then relock one of the Pods in its Shoe cradle – this should reset the radio and resolve the issue.

I’m walking forward in the Omni, but my character is walking backward.

If the Harness is pushed to the back of the Ring, foot movement will result in backward motion or strafing. Ensure you have the Harness on correctly (Velcro belt across your belly), and that you are not inadvertently pushing the Harness back in the Ring while trying to walk. Also make sure the Ring cable is connected between the Ring and the left Tower and reset the game.

To accommodate bigger users, please select the “Forward Only” mode in the Advanced Window of Omni Connect. “Forward Only” mode disables strafing and backward movements, and translates all movements of the user to “Forward”.

I’m getting slow, stuttering movement on the Omni / My character is moving when I’m not

You could be experiencing interference. Try changing the Omni Selection in the Advanced Window of Omni Connect, and connect the Pods for that Omni to the PC with the provided USB cables to update the radio channel. There are 13 channels to select from.

If you have Omnis on the same channel, i.e. you have more than 13 Omnis, keep them a maximum distance apart in your arrangement. If they still exhibit symptoms of interference, try changing their Power Level in the Advanced Menu of Omni Connect.

A High Power Level protects against background interference, while a Low Power Level protects against interference between Omnis on the same channel.

NOTE: If you need to extend Pod battery life you can adjust this setting to find a balance that works best for your environment.
**I’m playing a game that was made for the Omni, but the speed is not analog.**

Check that Omni Connect is in Gamepad mode. If it is in Keyboard mode, you may lose analog speed.

**I’m not able to move in a legacy game (an older game not made for VR).**

Check that Omni Connect is in Keyboard mode.

Check that the game itself is not set to only receive input from a gamepad.

**I’m in Keyboard mode, but it’s not picking up my steps consistently.**

Try increasing the Speed Sensitivity in the Advanced Window of Omni Connect.

**I’m in Keyboard mode, and every time I turn on the spot it triggers movement.**

Try reducing the Speed Sensitivity in the Advanced Window of Omni Connect.

**I’m trying to play a native Omni game with De-Coupled movement, but I’m always heading in the direction I am looking, or when I walk forward my character goes in a different direction.**

De-Coupled is typically selected in-game, followed by calibration. You should be prompted to press a button while looking straight ahead. If you do not see this prompt, try restarting the game and selecting ‘De-Coupled’ from the game options again.

**I am not able to play a legacy game in gamepad mode.**

The Omni Gamepad mode can emulate a standard gamepad controller but not an XBOX controller. Games that require XBOX controller input will not recognize the Omni. To do so, additional software like X360CE is needed.

Enable keyboard and mouse in the control section of your game’s options menu and put the Omni in Keyboard mode. You should be able to control your avatar via emulated WASD for forward, backward, and strafing as this control scheme is supported by most PC games.
APPENDIX B.
NOVICE USER TRAINING SCRIPT

1. Place the correct size of Omni Harness inside and resting on top of the Support Ring, orientated so that the User can step into it once you have opened the hatch.
2. Be sure the Back Straps are entirely loosened. This is important to avoid that you need to start fiddling with the straps in the user’s back after he is already inside the harness (*awkward*).
3. Open the hatch, and have the User step carefully onto the Omni platform and into the Omni Harness with both hands on the Support Ring, one foot at a time.
4. With at least one hand on the Ring at all times, have the User turn around 180 degrees so that he/she is facing the instructor and the open hatch, and then close it – ensuring it is properly locked into place.
5. The Omni Harness should be positioned slightly above the User’s waist when resting on the Ring. If necessary, adjust the height of the Support Ring.
6. Fasten the Velcro belt around the User’s waist, ensuring it fits snugly.
7. Push each of the thigh straps from behind through the User’s legs, one at a time, so that the User can grab each thigh strap and click it into the thigh buckle. Say “this is for the left leg”, “this is for the right leg” as you do this. Explain how to tighten the thigh straps – “Pull the green tabs out to the side, but they don’t have to be too tight”.
8. Tighten all other straps so they are comfortable but secure. Especially tighten the two straps in the back of the User, as they will provide maximum support.
9. First Steps Training: Instructor positions himself to the side of the User while facing the same direction as the User.
   a. Do not face the User, but stand next to the User while demonstrating.
   b. The instructor’s positioning is to ensure the User can properly see and understand each movement as the instructor explains and demonstrates how to use the Omni (as opposed to a mirrored view).
10. Hold the metal frame of the Harness firmly in one hand and push the Harness and User forward inside the Ring. Keep the User pushed forward against the Ring throughout the training exercise.
11. Instruct the User to place his front foot near the outer edge of the Omni while putting his weight on that forward foot.
a. “Take one step forward and put your weight on your forward foot, and let it slide back via gravity.” Encourage the User to take a full step and lean forward on their forward foot.

b. “Lean forward / shift your weight forward and lean into your gait, placing your weight on your forward foot.”

c. The User can keep both hands on the Ring during this initial training phase.

d. Instructor needs to physically demonstrate the actions instructed.

e. After the first step the User will proceed to do the same with the other foot.

f. Make sure the User is not shuffling his feet but taking actual steps.

g. The instructor can make the analogy with a bike: “Feels a bit awkward at first, but after a few minutes the movement will become second nature. It’s a matter of finding the right balance and getting used to the movement.”

12. Next instruct the User to walk forward normally at a slow and steady pace.

a. Continue to hold the metal frame of the Harness and continue to push the Harness and User forward against the Ring.

b. If the User has trouble, make sure to mirror the User (standing by his side) and show him to shift his weight forward / lean forward and put his weight on his forward foot. Both hands can be on the Ring for extra support.

c. Make sure the User does not attempt to run or let go of the Ring if he needs more time to practice.

d. After these initial steps, tighten the two straps in the back of the User once more for maximum support.

e. The User should continue to walk for another 1-2 minutes to get a proper feel for the Omni.

13. Ask the User to “look up while walking forward” (instead of downwards at his/her feet). This will automatically straighten the User’s posture.

14. Next the User should be given the controller.

a. Have the User walk for 2-3 minutes while holding the controller.

b. Explain the controller layout (Triggers and Buttons).

15. Do not allow anyone to put on the HMD until he is fully accustomed to walking comfortably on the Omni. Continue the training as long as necessary.

16. Once the instructor deems the User is ready for Omni VR, give the User the HMD to start the VR experience.

a. Be sure to hold the controller for the User while he is putting on the HMD, then hand the controller back to the User.

b. Tighten the two back straps one more time before gameplay.

17. During gameplay, ensure the HMD cable is out of the User’s way. Do not let the cable wrap around his face or neck.
**Do the following after each gameplay session:**

1. Once play has ended, take the User’s hand controllers and HMD. To ensure the User exits the Omni safely, adhere to these steps:
   a. Ask the User to unclip the buckles on the thigh straps
   b. Unfasten the Velcro belt and undo the belt strap.
   c. **Open the door and ensure the User holds onto the Ring while exiting (but not onto the Ring door).** Ensure the User does not put his weight onto the Ring door or put his hand between the door and the Ring.
   d. Tell the User to step onto the Deck first, and then carefully step off the Omni.
   e. Do not let the Harness come out of the Ring.
   f. As soon as the User has dismounted, remove the Pods from his Shoes.
   g. **Do not let the User walk away from the Omni while wearing the Shoes.**

2. Prepare the station for the next user:
   a. Uncoil the HMD cable and clean / replace the HMD face covering.
   b. Check that the HMD is set to an IPD of 65.0mm, in case the user adjusted it (use the turning knob at the bottom left of the Vive HMD).
   c. Wipe down the Base (**do not use wet wipes**).
   d. **Loosen the Harness back straps.**