VR and AR hardware: Off the shelf or build your own

I've been toying with the idea of building a PC for a while, particularly since Oculus decided not to support Macs with the Rift. When I first saw the Hololens I decided quickly that they would be my AR rig sooner rather than later, but OTOH, it's hard to walk around with a PC wrapped around your head and not be made fun of or kicked out.

AR: Hololens

In the Augmented Reality space there are few choices but, to me, there is one that merits shelling out the money: Microsoft's Hololens. It's not just an AR rig but also a full fledged Windows 10 PC and will run Windows applications without problems other than getting used to using gestures instead of mouse and with no keyboard (is bluetooth an option?)

The issue with Hololens is cost: $3000 is not pocket change and it doesn't account for the cost of a development PC that may or may not be

VR

I'm a died hard Mac user and would rather wait until Oculus gets off their high horse and decides to support Macs directly again. I find these types of quotations infuriating:

> It boils down to the fact that Apple doesn't prioritize high-end GPUs. You can a buy $6,000 Mac Pro with the top of the line AMD FirePro D700 and it still doesn't meet our recommended spec. If they prioritize higher-end GPUs like they used to for awhile back in the day, I think we'd love to support Mac.
>
> Palmer Luckey, Oculus cofounder

But there are a few other things I want to do. Some of these things include:

- AR and VR Development

- Having at least 2 simultaneous displays plugged into the computer
- Video editing

You can save yourself the aggravation and buy an Oculus ready pcs but that doesn't solve my wanting to build the rig from the ground up and explore how to squeeze the best performance I can for the money I spend.

The specs for the Vibe and Rift are not

- HTC Vive
    - Graphics Card: GeForce GTX 970 or AMD Radeon R9 290 or better
    - CPU: Intel Core i5 4590 or AMD FX 8350 or greater
    - RAM: 4GB or more
    - Video port: HDMI 1.4, DisplayPort 1.2, or better
    - USB port: 1 USB 2.0 or faster port
    - Windows 7 SP1 or newer
- Oculus Rift
    - Graphics Card: GeForce GTX 970 or AMD Radeon R9 290 or better
    - CPU: Intel Core i5 4590 or greater
    - RAM: 8GB or more
    - Video port: HDMI 1.3
    - USB port: 2 USB 3.0 ports
    - Windows 7 SP1 or newer

See: https://www3.oculus.com/en-us/blog/powering-the-rift/

My plan

The setup I'm looking at is a modified version of this build from PC gamer designated as their top of the line gaming PC.

The Rift doesn't seem to support SLI bridged video cards. So I'll go with the TitanX and will consider upgrading to SLI bridged in the future. SLI also seems to be a problem with regular games as not all games support SLI.

I chose to do 2x16MB memory sticks so I can upgrade to 64 by dropping additional chips until I hit the 128MB that will be my upper limit (and the limit of the motherboard). If I ever need more ram than that I'll go with a higher end

Zeon-based workstation.

By taking the second video card out I'm wonderng if I can put another SATA hard drive in and se the right as a file server as well. Raid 0 the SATA drives and only install essential applications in the primary drive? With 10 SATA slots (and 6 of those slots supporting RAID 0, 1, 5 and 10) it may be possible to build an internal array and do RAID 10 in the storage space.

The OS is the only no brainer that will stay the same. Hololens development needs a Windows 10 box and the Oculus is currently only running on Windows machines... and (don't laugh) I like Windows 10.

These are the specs:

- Graphic Card: EVGA GeForce GTX TITAN X)
- CPU: Intel Core i7-6850K
- Motherboard: X99A GODlike Gaming
- RAM: 32GB (2x16MB)
- Primary Storage: Samsung 960 Pro 1TB M.2 NVMe
- Data Storage: Samsung 850 Evo 2TB SATA
- Power Supply: EVGA SuperNOVA 850 T2
- Case: Phanteks Enthoo Luxe
- OS: Windows 10

Additional stuff

- HMD: Oculus Rift full setup (HMD and controllers)
- Monitor: Acer R271 bid 27-inch IPS Full HD (1920 x 1080) Display (VGA, DVI & HDMI Ports)

The computer itself comes to around $3000 (you can probably lower the cost by catching deals in Amazon... you can buy the CPU and Motherboard together for about 100 to 200 cheaper than if you buy them separately). The Oculus and the monitor add another 800 dollars to the mix... it's not a cheap idea but it should last for a few years before having to upgrade.