

PC/Windows Workstation

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Purpose

This is the recommendation for any purchases with regards to a Windows based computer for UCSB usage.

General Configuration

Minimum Configuration

As of September 2019, ECI recommends that any computer being looked at should have the following:

- Current Generation Processor (Intel i5 Core or AMD A10)
- 16 Gigabytes of RAM Minimum
- 512 Gigabytes of Drive Space Minimum
- 3-5 Year Warranty on the machine for Parts (depending on how long the machine will be expected to be in service)
- Supported operating system such as Windows 10. Windows 7 end of life is January 14, 2020 and Microsoft now charges for upgrades from Windows 7 to 10.

The reasons for this recommendation is the following:

- Processors below the recommended will often be slower as time goes on. Most modern applications, as they update, will be expecting better processors.
- The amount of memory affects how fast a computer can work when running multiple applications. Spreadsheets, Mail, and multiple browsers will take more and more memory depending on how much is open.
- Some software and mail clients can take up lots of space over time.
- Some hardware cannot be serviced easily on campus anymore. Ideally, if the computer does break down, having the manufacturer repair it is more effective, especially under warranty.

Suggested Manufacturers

We currently suggest you buy your computer from a manufacturer that has repair centers in town and is not under US sanctions such as Dell, HP, Lenovo, Microsoft, Toshiba, Samsung, etc...

If you are doing research at UCSB and either you or your research group have received **any** State or Federal grant money, please note the following:



The National Defense Authorization Act (NDAA) §889 part B includes a prohibition against the *use* by any organization that contracts with the Federal government of equipment from 5 Chinese manufacturers and their subsidiaries and affiliates. The five manufacturers are:

- Huawei Technologies Company
- ZTE Corporation
- Hytera Communications Corporation
- Hangzhou Hikvision Digital Technology Company
- Dahua Technology Company

At present, personally owned devices from the above 5 manufacturers can be used on ResNet and campus wireless networks provided that the equipment is not used in any way to support research. *The equipment can not be on any wired network.*

Suggested Upgrades

Solid State Drive

Instead of the traditional drive, go with a Solid State Drive (SSD).

Pros

- Faster read/write ability, meaning the computer will start up faster, load applications faster and save information quickly.
- Does not require as much disk maintenance such as Disk Defragmenting to improve performance.
- Uses less power over all.

Cons

- SSDs tend to be a bit more expensive per Gigabyte, and often limited to how much space can be offered at the moment. The more space you want, the more expensive it can get.
- SSDs do have a usage limit. Heavy read/writing on SSDs can shorten the lifetime of an SSD. Not ideal for dealing with constant data manipulations over a long period of time.

Dual Video Output

Most computer systems are only expecting 1 video connection.

For some work, you may want to consider a computer that will support more than one monitor.

Optional Sticker Containing Software Serial Numbers

DELL, HP, and several other brands no longer include stickers on their machines with license keys for Windows or Microsoft Office for free if said software comes with the machine.

While this information is generally included in a email at time of purchase, it is very easy to loose email, especially if machines suffer hardware issues or viral infection.

Stickers with software licensing information are generally less that \$5 for all info. Depending on the brand, users may be charged **\$15-\$50 per email** to recover keys they already paid for.

Gateway Accessible Purchases

Dell Precision 3430

The Dell Precision 3430 can be purchased via Gateway.

This computer is a Small Form Factor computer, meaning it is meant to take the smallest amount of space.

We recommend the Dell Precision 3430 as it is meant to be a workstation computer and with better wear and tear.

While the Optiplex version is cheaper, they are designed for very general purpose use or home use with an expected replacement within 2 or 3 years.

Pros

- Small Form Factor for places that you can't have a full size computer (Roughly 3.75"w x 11.5"d x 11.5"h)

Cons

- Space saving limits the amount of additional items that can be added
- Not ideal for environments that can get stuffy or dirty.

Optional Peripherals

Monitor Stand Fixture

The Dell Precision 3420 can have an optional Monitor Stand Fixture that can support most of the Dell Monitors and have the machine attached behind it, saving some space.

Displayport to HDMI/DVI/VGA Adapter

The base model comes with 2 Displayport, 1 HDMI connections, and possibly a DVI output for Video (Depends on the configuration).

If you wish to have a multi-monitor setup, you may need to have a Displayport to HDMI, Displayport to VGA or Displayport to DVI adapter to supplement for the extra monitor.

Dell Precision 3630

The Dell Precision 3630 can be purchased via Gateway.

This computer is a mid tower computer.

We recommend the Dell Precision 3630 as it is meant to be a workstation computer and with better wear and tear.

While the Optiplex version is cheaper, they are designed for very general purpose use or home use with an expected replacement within 2 or 3 years.

Pros

- More room to allow additions such as extra hard drives

Cons

- A bit bigger than the Precision 3420 (Roughly 6.75"w x 17.25"d x 14.25"h)

Optional Peripherals

Displayport to HDMI/DVI/VGA Adapter

The base model comes with 2 Displayport, 1 HDMI connections for Video (Depends on the configuration).

If you wish to have a multi-monitor setup, you may need to have a Displayport to HDMI, Displayport to VGA or Displayport to DVI adapter to supplement for the extra monitor.

GPU Video Card

The base model uses an Intel Based video chipset.

If some of your work requires a Graphics Processor Unit (GPU), Dell does offer optional GPU cards that can be installed.

The nVidia Quadro K420 card is available for both the Precision 3420 and 3620.

Contour Rollermouse free3 (ergonomic and glove safe)

A good option for those who have trouble with standard sized mice, the rollermouse free3 features a large bar than can easily be moved with either hand.

Large physical keys instead of small embedded mouse buttons mean you can easily use it while wearing thick gloves. Perfect for the post COVID-19 world.

In use by several staff members with arthritis who need to switch off which hand they use regularly.

<https://www.contourdesign.com/product/rollermouse-free-3/>

Pictured below with their large key keyboard (also ergonomic and glove safe)

