

# Computer Refresh

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IT Chair

# Purpose

Requesting approval to purchase new computers to

1. Replace old hardware
  - a. Critical machines nearing end of useful life
2. Run all of the software we're paying for
  - a. Adobe Creative Cloud
  - b. Fusion 360
  - c. CorelDraw 2023
3. Add computers for requested areas
  - a. Cosplay
  - b. Electronics
  - c. Printmaking
4. Add features that have been requested by members
  - a. 3D scanning, modeling and photogrammetry
  - b. Video production

# Where we were vs where we are now

- Then

- Small membership (< 100 members prior to 2021)
- Limited computers whose primary purpose was to run tools.
- No or Limited training on, or access to, design software offered at Makersmiths.
- Expectation was that members would have their own computers to run specialized design software.

- Now

- Larger and more diverse membership (332 members as of 2/27/24)
- Increased use of tools outside of the traditional woodworking and metal shops
- Design software running on most tool computers
  - Even on designs done elsewhere, last minute changes may be required
  - UV, Laser, 3D Printing, Sublimation, Printmaking, Classroom, Green Room
- Not all members own high powered personal computers
  - Hardware is expensive (graphics cards in particular)
  - Software license fees can be expensive and often require annual plans
  - Experimental start-ups
    - Proving viability before committing to the expense
- Frequent requests for classes on the use of design software
  - Potential for revenue to offset costs

# Old Hardware

These PCs are essential to Makersmiths offerings, but are older hardware facing an increased risk of failure. No spares on hand to replace so failure will prevent use of the tools attached

- Laser Cutter
  - Dell XPS 8500
  - Donated by Beverly Murdock
  - Mfg Date: 12/07/2012
- 3D Printing/Classroom
  - Lenovo 501S-08ISH
  - On Loan from Mike Fistler
  - Mfg Date 08/2016
- This does not include 2 computers that have already failed due to age.
  - We temporarily took the computer for printmaking to replace one, the other has not been replaced.

# Rooms without dedicated computers

- Printmaking (had one but moved to Sublimation)
- Electronics
- Cosplay

# Limited Accessibility Impacting Space Use

- Electronics Room at Leesburg
  - No computers currently
  - Difficult to work in electronics without access to Internet for circuit designs and code for Pis/Arduinos
- 3D Printing
  - Leesburg
    - Single computer leads to bottleneck in training
    - Conflicts when multiple members want to print
- Classrooms at Purcellville
  - No computer in classroom (upper or lower building)
  - Occasional conflicts for Green Room computer
- Limitations on what classes we can offer
  - Repeated requests for training on design software

# Solutions

## Dell Precision 3660

For all compute intensive software (Fusion 360, Adobe suite, 3D modeling)

- Windows 11 Pro
- 13th Gen Intel® Core™ i7-13700
- NVIDIA RTX A2000 12 GB (needed for computation, not high end graphics)
- RAM: 32GB upgradable to 64GB
- 512 GB M.2, PCIe NVMe, SSD (boot) + 2 TB, 7200 RPM, SATA, HDD (storage)

## Dell OptiPlex 7010 Tower Plus

General use to start - ability to add a graphics card later

- Windows 11 Pro
- 13th Gen Intel® Core™ i7-13700
- Integrated Intel Graphics
- RAM: 16GB upgradable to 64GB
- 1 TB, M.2, PCIe NVMe, SSD

## Inspiron 3020

Consumer Grade

- Windows 11 Pro
- 13th Gen Intel® Core™ i7-13700
- NVIDIA GeForce RTX 3050 8MB
- RAM: 16GB upgradable to 64GB
- 1 TB, M.2, PCIe NVMe, SSD

## Dell OptiPlex 7010 SFF

For general use

- Windows 11 Pro
- 13th Gen Intel® Core™ i5-13500
- RAM: 16GB upgradable to 64GB
- 512 GB, M.2, PCIe NVMe, SSD

# Solutions

Dell 27 Monitor - P2722H or S2721HS

- 27"
- Full HD
- Won't take full advantage of the full display capabilities of the graphics cards, but we're buying those more for their compute power, not high end gaming. We can always upgrade monitors.



# Potential Placements

## Precision 3660

- Classroom
- UV Printer
- 3D Printing
- Green Room

## OptiPlex Tower/Inspiron/SFF

- 3D Printing (2nd computer)
- Big Red/Metal Shop

## Repurpose existing computers to

- 3D Printing → Cosplay
- Classroom → Electronics
- Green Room → Classroom or LB Classroom
- UV Printing → Printmaking

# Prices and Funding options

- Purchase
- Dell Financing
  - \$10,000 line of credit available, 90 days no interest
- Dell Lease
  - Lease up to \$15,000 of equipment

\* Pricing assumes we file for Tax Exemption certificate

Additional cables and accessories may be required

<u>Computer</u>	<u>Price*</u>
Precision 3660	\$1,726
OptiPlex Tower (integrated video upgradable later)	\$1,436
OptiPlex SFF	\$747
Inspiron 3020  (consumer grade)	\$912
27" Monitor - S2721HS (consumer grade)	\$158
27" Monitor - P2722H (commercial grade)	\$171

# Business vs Commercial Grade

- XPS and Inspiron are Consumer Grade computers
  - Designed for light use
  - Cheaper parts
  - 1 Year Basic Support. Can upgrade but is generally more expensive than business grade computers
- Precision and OptiPlex model lines are Business Grade computers
  - Designed for extended use
  - Higher quality materials
  - More resistant to damage from drops and spills
  - Discounts bring price in range with some consumer models
  - 3 Years basic support included can upgrade to next day replacement and add damage coverage for extra

# Support Options

## Precision

STANDARD COVERAGE	ENHANCED COVERAGE—FOR BUSINESS	MOST COMPREHENSIVE—FOR BUSINESS
<b>Basic Support</b> <ul style="list-style-type: none"> <li>Accidental Damage <b>optional</b></li> <li>Hardware support</li> </ul>	<b>ProSupport</b> ★★★★★ 4.2 (6451) <ul style="list-style-type: none"> <li>Accidental Damage <b>optional</b></li> <li>Hardware support</li> <li>Next Business Day onsite or Advanced Exchange Service after remote diagnosis</li> <li>Crisis monitoring &amp; management</li> <li>Direct access to in-region ProSupport experts for hardware and software issues</li> </ul>	<b>ProSupport Plus</b> ★★★★★ 4.3 (6124) <ul style="list-style-type: none"> <li>Accidental Damage <b>included</b></li> <li><b>Includes every feature from ProSupport</b></li> <li>Fixes problems before they occur</li> <li>Automated virus/malware removal</li> <li>Keep your hard drive, if this option is available for your hardware ⓘ</li> </ul>
Monthly payment <input type="radio"/> One-time payment <input checked="" type="radio"/>		
<b>Basic Onsite Service after remote diagnosis with Hardware-Only Support, 36 Month(s)</b> <b>Included</b>	3 Years + \$77.31	3 Years + \$222.20
Years 3 years		

## OptiPlex

**Dell Services:Extended Service** Which support service is right for you?

[View Limited Hardware Warranty](#)

[Onsite Service after Remote Diagnosis and Other Important Information](#)

[Service Contract Pricing/Purchase PC without Contract](#)

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Monthly payment <input type="radio"/> One-time payment <input checked="" type="radio"/>		
<b>No Warranty Upgrade, 36 Month(s)</b> <b>Included</b>	3 Years + \$88.96 <b>Dell Recommended</b>	3 Years + \$155.93
Basic Onsite Service after remote diagnosis with Hardware-Only Support, 37 Month(s) + \$7.79		

# Option 1: Full Upgrade

- Precision 3660
  - MSL Classroom
  - MSL Laser
  - 3D Printing
  - Green Room
  
- Optiplex Tower (upgrade video card later if needed)
  - 3D Printing (2nd)
  - Big Red/Metal Shop
  
- Monitors
  - P2722H Qty 4 (adding machines, so need some new monitors)

Cost: \$10,460

# Option 2 - Phased Approach

## Phase 1: Targeted upgrades to meet immediate needs

- Precision 3660
  - MSL Classroom
    - Adobe CC, CorelDraw 2023, Fusion 360
  - MSL Laser
    - Adobe CC, CorelDraw 2023
- Monitors
  - One P2722H

Cost: \$3,623

Replaces old Laser computer and covers software in use today.

One monitor needed for existing classroom computer which can be reallocated to Cosplay, Printmaking, or Electronics

# Option 2 - Phased Approach

## Phase 2: Continued Upgrades

- Precision 3660
  - MSL 3D Printing
  - MSP Green Room
- Optiplex Tower
  - MSL 3D Printing
  - Big Red/Metal shop
- Monitors
  - Three P2722H

Cost: \$6,837