

# Dell Precision



Great minds need great machines.



Stuart Maclean – Workstation Specialist

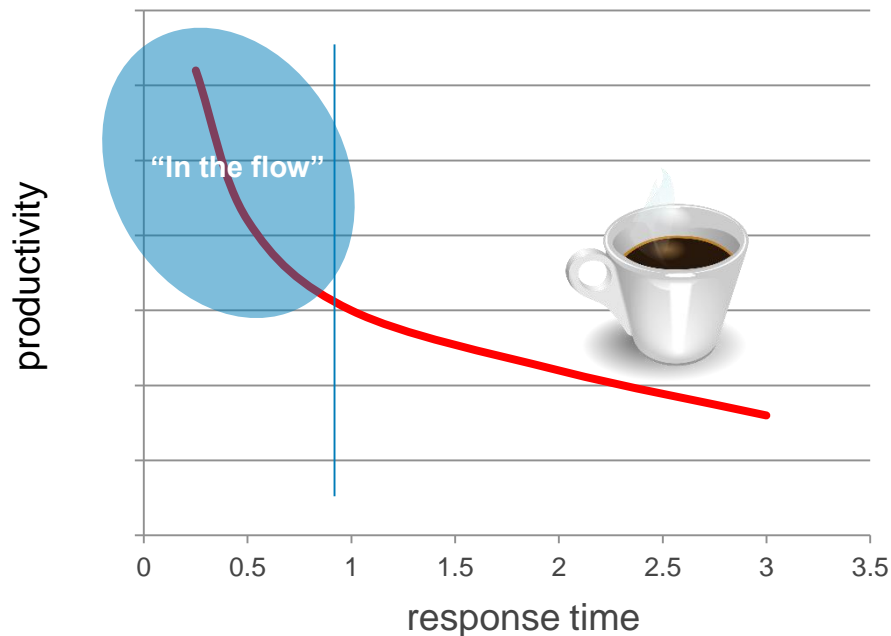


# Why is Productivity so Important?

## The Economic Value of Rapid Response Time

- **What is it?**
  - Sub second response time = dramatic increase in productivity
  - Train of thought - “in the flow”
- **Benefits**
  - Substantial cost savings
  - Improved individual productivity
  - Shortened project schedules
  - Faster time to market
  - Less physical prototypes and testing
  - Increased product quality

### Productivity vs. Response Time



[The Economic Value of Rapid Response Time](#)

By Walter J. Doherty and Ahrvind J. Thadani - IBM

# Workloads: Usage archetypes

Choosing the right CPU(s)/GPU(s) is important

- **Workstation application usages typically fall into one of two categories:**

## Interactive

Heavy user interaction

Modeling, manipulation, editing, annotating, etc.

Performance typically scales with **CPU frequency** and/or **GPU class**

## Computational

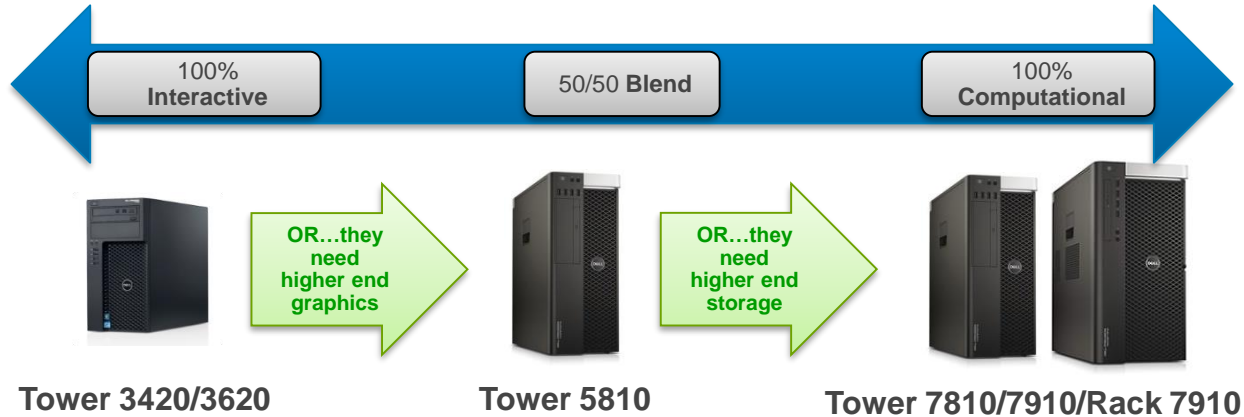
Little user interaction

Set up a model, load a data set, press a button and go get coffee

Performance typically scales with CPU **core count, frequency, cache, memory**  
**GGPUs** for certain **highly parallel** apps

# Proper System by Workload

- **Figure out the percent mix of your customer's usage model, between interactive and computation**
- **Plot them on a continuum like this:**



# Fixed Configuration Recommendations

Fixed	For the professional who works on light to moderately complex part design and light to medium sized assemblies, creates detailed drawings, schematic diagrams, and BOMs.	For the professional who works on moderately complex part design and medium sized assemblies, creates detailed drawings, schematic diagrams, and BOMs, and runs first pass Finite Element and Kinematic Analyses.	For the professional who works on complex part design and large size assemblies, creates detailed drawings, schematic diagrams, and BOMs, and runs first pass Finite Element and Kinematic Analyses.
Model	Dell Precision Tower 3000 Series (3620)	Dell Precision Tower 5000 Series (5810)	Dell Precision Tower 7000 Series (7810)
CPU	7th Gen Intel® Core™ i7-7700K (Quad Core 4.2GHz, 4.5Ghz Turbo, 8MB, w/ HD Graphics 630)	Intel® Xeon® Processor E5-1660 v4 (8C, 3.2GHz, 3.8GHz Turbo, 2400MHz, 20MB, 140W)	Dual Intel® Xeon® Processor E5-2687W v4 (12C, 3.0GHz, 3.5GHz Turbo, 2400MHz, 30MB, 160W)
GPU	AMD FirePro™ W5100, 4GB NVIDIA Quadro M2000	AMD FirePro™ W7100, 8GB NVIDIA Quadro P4000	AMD FirePro™ W8100, 8GB NVIDIA Quadro P5000
RAM	16GB (2X8GB) 2400MHz DDR4 UDIMM Non-ECC	32GB (4x8GB) 2400MHz DDR4 RDIMM ECC	64GB (4x16GB) 2400MHz DDR4 RDIMM ECC
Storage	M.2 256GB PCIe NVMe Class 40 Solid State Drive	512GB 2.5" SATA Solid State Drive	1TB 2.5" SATA Solid State Drive
Support	3 Years ProSupport with Next Business Day Onsite Service	3 Years ProSupport with Next Business Day Onsite Service	3 Years ProSupport with Next Business Day Onsite Service

# Mobile Configuration Recommendations

	For the professional who works on light to moderately complex part design and light to medium sized assemblies, creates detailed drawings, schematic diagrams, and BOMs, and runs first pass Finite Element and Kinematic Analyses.	For the professional who works on light to moderately complex part design and light to medium sized assemblies, creates detailed drawings, schematic diagrams, and BOMs, and runs first pass Finite Element and Kinematic Analyses.	For the professional who works on moderately complex part design and medium sized assemblies, creates detailed drawings, schematic diagrams, and BOMs, and runs first pass Finite Element and Kinematic Analyses.	For the professional who works on complex part designs, including tool and die design, large assemblies, creates photo-realistic renderings and marketing materials, runs first pass Finite Element and Kinematic Analyses.
<b>Model</b>	Dell Precision Tower 3000 Series (3520)	Dell Precision 5000 Series (5520)	Dell Precision 7000 Series (7520)	Dell Precision 7000 Series (7720)
<b>CPU</b>	6th Gen Intel® Core™ i7-6700 (Quad Core 3.40GHz, 4.0Ghz Turbo, 8MB, HD Graphics 530)	Intel Core i7-7820HQ (Quad Core 2.90GHz, 3.90GHz Turbo, 8MB 45W, w/Intel HD Graphics 630)	Intel Xeon E3-1505M v6 (Quad Core Xeon 3.00GHz, 4.00GHz Turbo, 8MB 45W, w/Intel HD Graphics 630)	Intel Xeon E3-1535M v6 (Quad Core Xeon 3.10GHz, 4.20GHz Turbo, 8MB 45W, w/Intel HD Graphics 630)
<b>GPU</b>	NVIDIA Quadro M620 w/2GB GDDR5 dedicated memory	NVIDIA Quadro M1200M, 4GB GDDR5	AMD Radeon Pro WX 4150 with 4GB GDDR5 or NVIDIA Quadro M2200, 4GB GDDR5	AMD Radeon Pro WX 7100 with 8GB GDDR5 or NVIDIA Quadro P4000, 4GB GDDR5
<b>RAM</b>	16GB, DDR4-2400MHz SDRAM, 1 DIMMS	16GB, DDR4-2400MHz SDRAM, 1 DIMMS	32GB, DDR4-2400MHz SDRAM, 4 DIMMS, ECC	64GB, DDR4-2400MHz SDRAM, 4 DIMMS
<b>Storage</b>	256GB M.2 PCIe Solid State Drive Class 40	512GB 2.5" SATA Solid State Drive	512GB M.2 PCIe NVMe Solid State Drive	512GB M.2 PCIe NVMe Solid State Drive
<b>Display</b>	15.6" FHD IPS (1920x1080) Non-Touch LED-backlit (72% color gamut) with Mic, No Camera, WWAN Capable	15.6" UltraSharp™ FHD IPS (1920x1080) Wide View Anti-Glare LED-backlit with Premium Panel Guarantee	15.6" UltraSharp™ FHD IPS (1920x1080) Wide View Anti-Glare LED-backlit with Premium Panel Guarantee	17.3" UltraSharp™ FHD IPS(1920x1080) AG LED-backlit with Premium Panel Guarantee (72% color gamut)
<b>Support</b>	3 Years ProSupport with Next Business Day Onsite Service	3 Years ProSupport with Next Business Day Onsite Service	3 Years ProSupport with Next Business Day Onsite Service	3 Years ProSupport with Next Business Day Onsite Service

A grayscale photograph of a modern building's exterior, featuring a grid of rectangular panels and deep, angular shadows that create a sense of depth and architectural complexity. The building's facade is composed of large, light-colored rectangular panels arranged in a grid pattern. Deep, dark shadows are cast by the building's overhangs and recessed sections, creating a strong sense of three-dimensionality and architectural rhythm. The perspective is from a low angle, looking up at the building, which emphasizes its height and scale. The sky is a uniform, light gray, providing a neutral background for the building's dark tones.

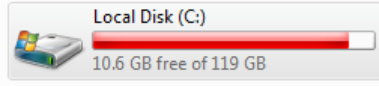
# Tuning what you have today



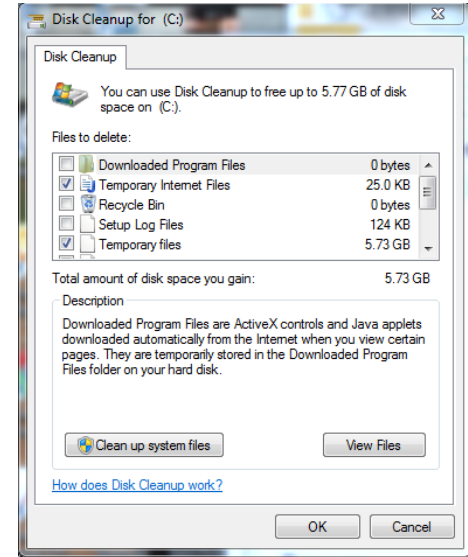
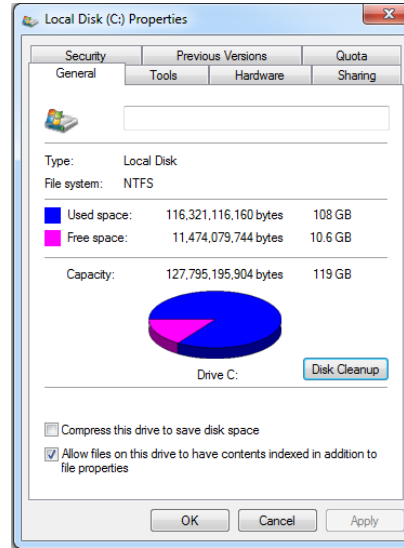
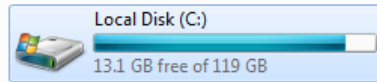
# Basic's Windows Disk Clean-up

- Right click on Properties and click Disk Clean-up
- The result on my SSD which is quite small so an extra 3GB of room is welcome

## Hard Disk Drives (2)



## Hard Disk Drives (2)





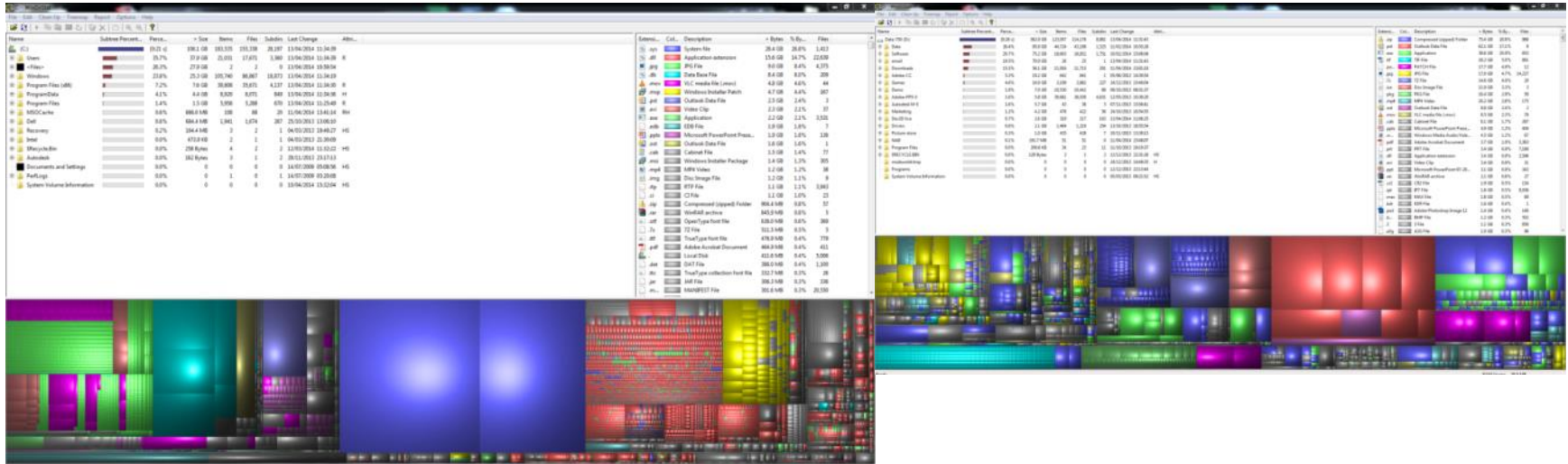
# Kill any Malware

- Not only your browser can be slow because of but can slow the general system down as well
- <https://www.malwarebytes.org/>
- SpyBot



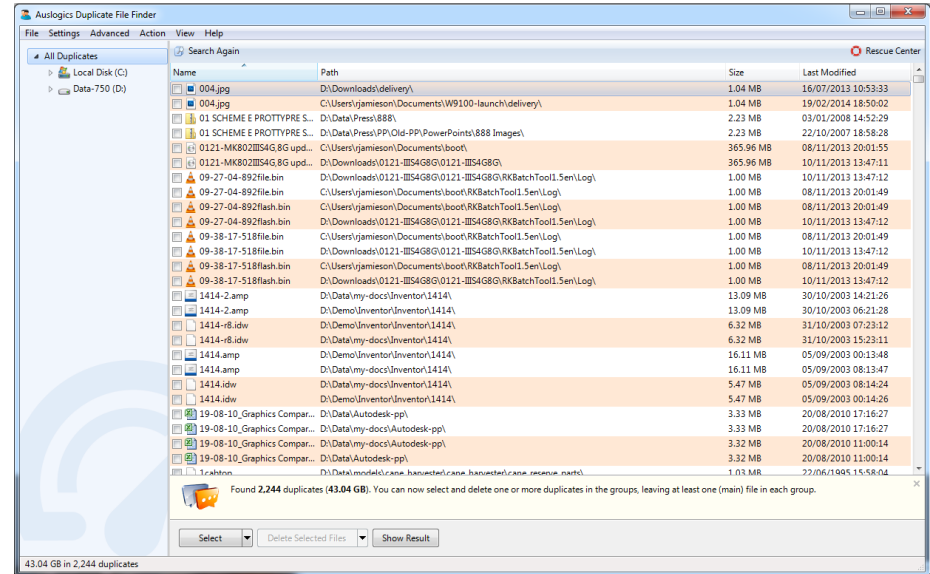
# WinDirStat look at what you are storing

- Visual drive map of what you do have on your hard disk
- <http://www.fosshub.com/WinDirStat.html>



# Find those duplicate files

- “Duplicate File Finder”
- Multiple files waste space
- <http://www.auslogics.com/en/software/duplicate-file-finder/>
- Even with me just taking out the large duplicates I saved 5GB



# Process Explorer

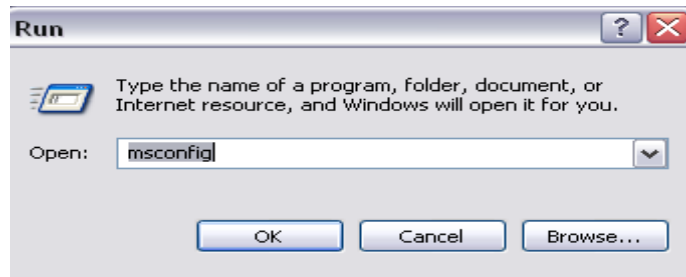
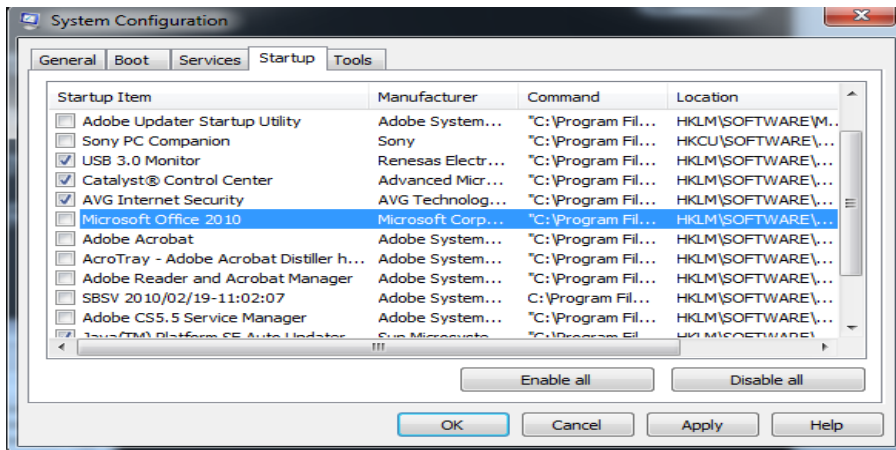
- A good tool to see what is happening in your system
- You can see what programs are sapping your performance
- <https://technet.microsoft.com/en-gb/sysinternals/bb896653>

[illegible]

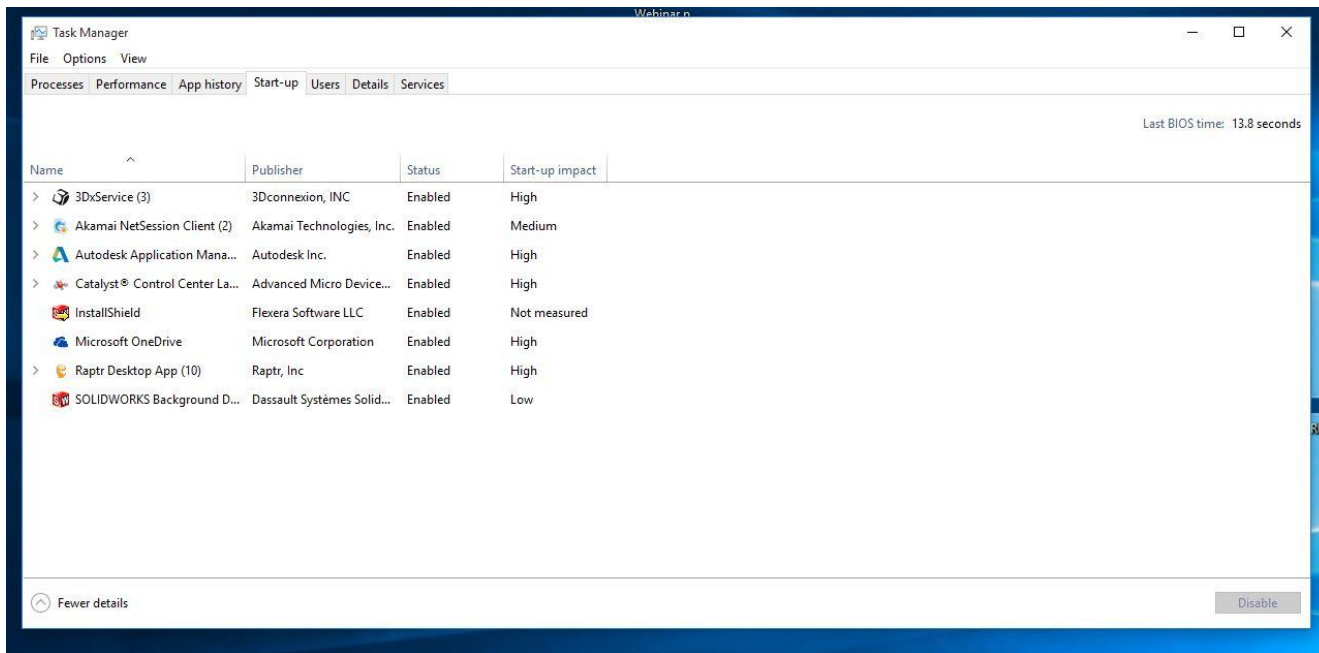
Process	CPU	Private Bytes	Working Set	PID	Description	Company Name
System Idle Process	36.87	0 K	24 K	0		
System	0.10	428 K	3,248 K	4		
smss.exe	0.17	0 K	0 K	n/a	Hardware Interrupts and DPCs	
svchost.exe		724 K	1,424 K	304		
avgvsa.exe	< 0.01	43,468 K	49,628 K	396		
avgvsa.exe		22,524 K	138,776 K	436		
csrss.exe		3,336 K	6,108 K	844		
csrss.exe	< 0.01	1,430 K	3,400 K	1929		
wininit.exe		6,072 K	5,304 K	916		
services.exe		2,936 K	13,424 K	984		
smss.exe		5,148 K	12,236 K	324	Host Process for Windows S...	Microsoft Corporation
lsass.exe		6,032 K	6,376 K	2956		
smss.exe		2,560 K	11,844 K	2168		
WinPnSrv.exe		2,728 K	7,668 K	3928	Windows host process (Pun...	Microsoft Corporation
smss.exe		7,968 K	17,968 K	4604	Smk to receive asynchronou...	Microsoft Corporation
lsass.exe		4,888 K	10,316 K	6472	Microsoft Spell Checking Fa...	Microsoft Corporation
POWERPNT.EXE	0.20	133,096 K	167,564 K	6892	Microsoft PowerPoint	Microsoft Corporation
smss.exe		2,528 K	5,832 K	8392	Print driver host for 32bit spt...	Microsoft Corporation
smss.exe		2,428 K	5,832 K	8536	Preview Handler Service	Microsoft Corporation
svchost.exe		8,120 K	12,672 K	1048	Host Process for Windows S...	Microsoft Corporation
svchost.exe		2,304 K	5,216 K	1182	AMD External Events Servic...	AMD
svchost.exe		3,588 K	7,828 K	1732		
svchost.exe		27,124 K	26,168 K	1188	Host Process for Windows S...	Microsoft Corporation
audiodg.exe	< 0.01	17,992 K	18,700 K	6416		
svchost.exe		15,584 K	23,048 K	1224	Host Process for Windows S...	Microsoft Corporation
svchost.exe		9,932 K	19,536 K	1920		
WUDFHost.exe		2,464 K	6,728 K	3664		
WUDFHost.exe		2,164 K	5,656 K	3748		
smss.exe		44,076 K	49,956 K	3968	Desktop Window Manager	Microsoft Corporation
svchost.exe	< 0.01	16,980 K	12,772 K	1272	Host Process for Windows S...	Microsoft Corporation
svchost.exe	< 0.07	36,076 K	52,740 K	1332	Host Process for Windows S...	Microsoft Corporation
stacsv64.exe	< 0.01	7,040 K	8,016 K	1312	IDT PC Audio	IDT, Inc.
svchost.exe		14,144 K	17,520 K	1752	VPN Agent Service	Microsoft Corporation
svchost.exe	< 0.01	15,380 K	18,792 K	1832	Host Process for Windows S...	Microsoft Corporation
spoolsv.exe	< 0.01	9,212 K	16,228 K	2028	Spooler SubSystem App	Microsoft Corporation
svchost.exe		8,960 K	15,336 K	1136	Host Process for Windows S...	Microsoft Corporation
svchost.exe		15,344 K	18,584 K	1488	Host Process for Windows S...	Microsoft Corporation
AESTS64.exe		1,364 K	3,524 K	1480	Andrew filters APO access se...	Andrew Electronics Corpor...
avgvsgent.exe	< 0.01	22,000 K	13,588 K	2600	AVG Identity Protection Ser...	AVG Technologies CZ, s.r.o.
avgvprdx.exe	< 0.01	11,476 K	22,144 K	2108	AVG Watchdog Service	AVG Technologies CZ, s.r.o.
avgvsa.exe		12,248 K	17,620 K	2520		
avgvsa.exe		4,504 K	9,564 K	2556		
delphptAPIService.exe		3,836 K	9,004 K	2196	DraftSight API Service	Dassault Systèmes

# Clean up your Ram

- Stop non important programs starting and fragmenting your memory
  - MSCONFIG from the run command
    - works on Win 7 and Win 8.1 and 10
- Restart you system to clean your RAM

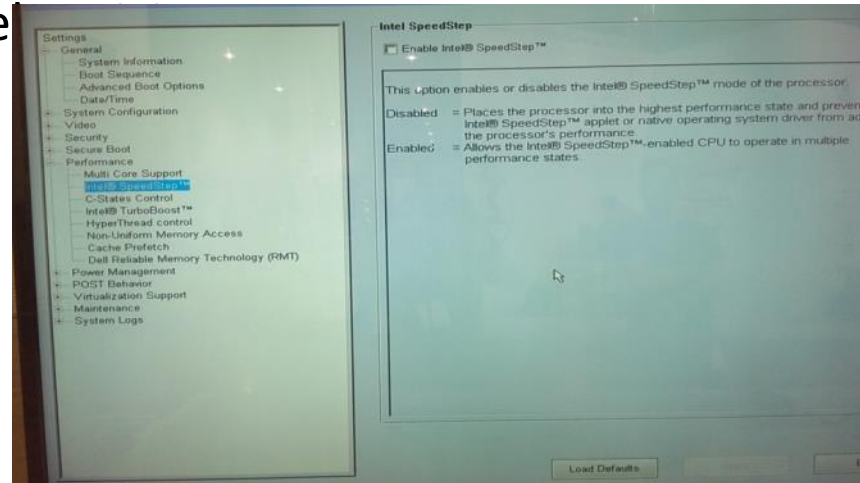


# Windows 10, has startup tasks in task manager



# Bios settings on a Dell T5810 – Speed Step

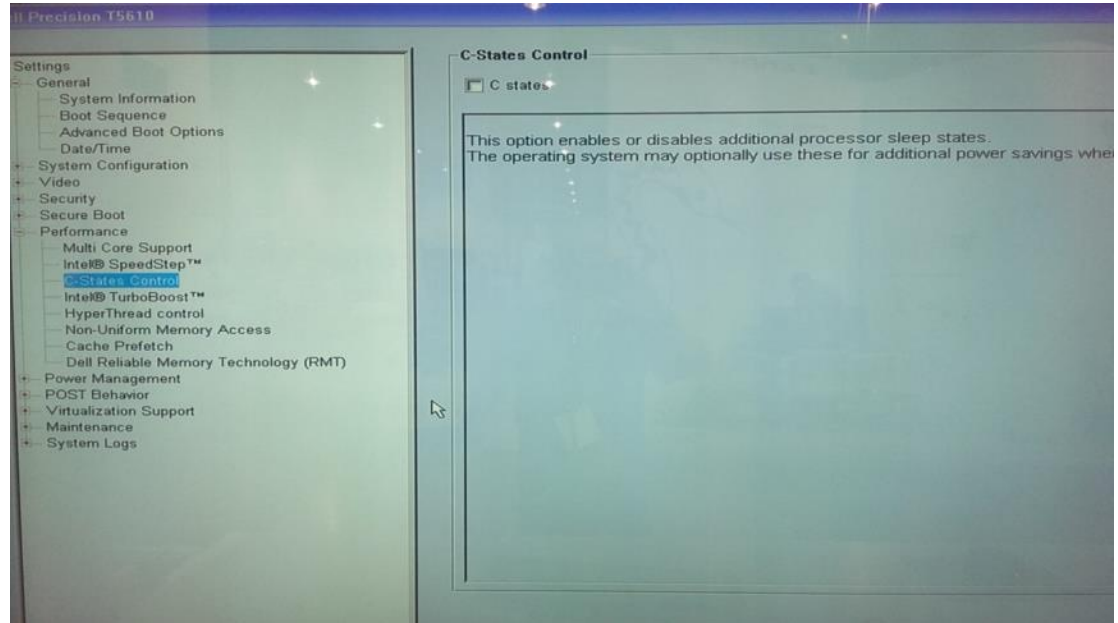
- Intel Speed step cuts the processor speed if it thinks the system is idle, sometimes the GPU might be doing the work and this might not realise where the work is being done
- As it states in the BIOS turning it off makes it go full speed all the time but will likely use more e





# Bios settings on a Dell T5810 – C State

- C State, this adds additional “wait states” if it thinks nothing is happening. Turn it off means its at full speed all the time





# Switchable Graphics

- This where a laptop has a intel GPU as part of the CPU and discreet AMD or Nvidia
- The Intel GPU is for low power uses and supposedly saves battery power
- AMD FirePro cards have power saving modes already...
- If you have a Laptop like Dell 7520/7720 you can switch off the intel chip and then need to re-install the graphics driver (so certain parts of the switching driver is removed) then no issues at all
- Some laptops this is not a option

# Dell Precision key technologies



# Dell Precision Optimizer

Your automated performance tuning, utilization monitoring, and system update solution

## Maximize application performance

- Improve productivity with automatic performance tuning for commonly used ISV applications
- Increase performance up to 121% over default factory settings

## Centrally manage using SCCM and KACE

- Remotely optimize multiple systems on your network
- Gather analytics from remote systems to assess, plan, and address resource needs

## Improve system reliability

- Download certified graphics drivers, latest updates for BIOS, firmware and software with one click

## Address resource bottlenecks with analytics

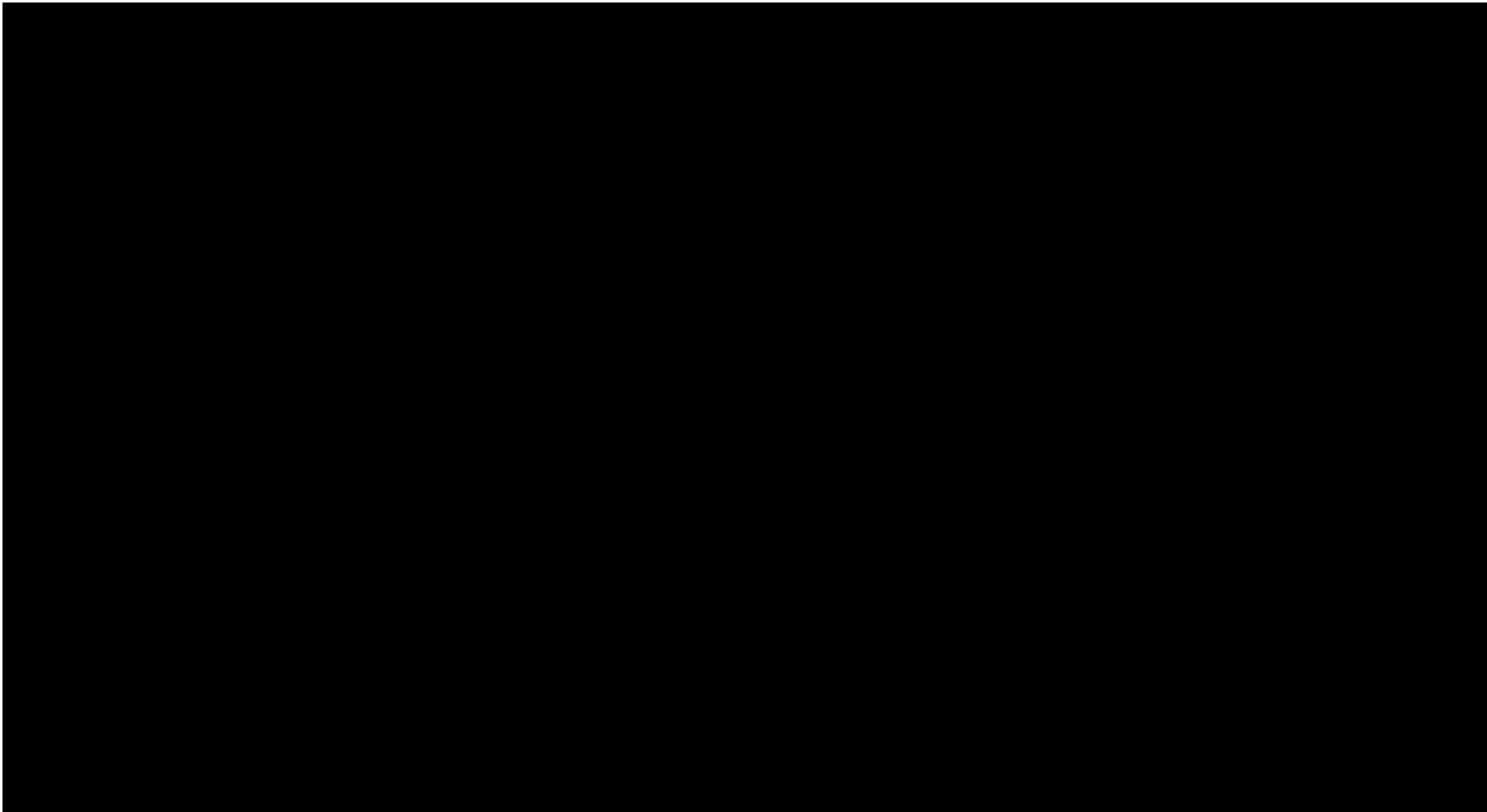
- Understand where bottlenecks occur and what system resources are over-utilized with analytics
- Proactively address resource bottlenecks by getting smart notifications

Windows 10 support

Available for free on all shipping Precision Workstations

Free download from [www.dell.com/optimizer](http://www.dell.com/optimizer)





# Dell Precision Ultra-Speed Drives

Get more done in less time

Dell has introduced two PCIe Solid State Drive add in cards for Dell Precision workstations:

Duo

-1x x8 slot

-2x M.2 drive slots

Quad

-1x x16 PCIe slot

-4x M.2 drive slots (available with 1, 2, or 4 drives)

Both versions are actively cooled and use the latest NVMe protocol to maximize PCIe performance.

This drive provides outstanding performance, density, and price, relative to standard SSDs.

Available on 5000 & 7000 Series Towers & Rack



# Dell Reliable Memory Technology (RMT) Pro

Patented to maximize uptime and ensure your workstations work as hard as you do

## **Reduces down time**

conjunction with error-correcting code (ECC) memory to correct memory errors in real time

-Works in  
detect and

## **Extends memory life**

you of memory errors before the DIMM is unusable

-Notifies

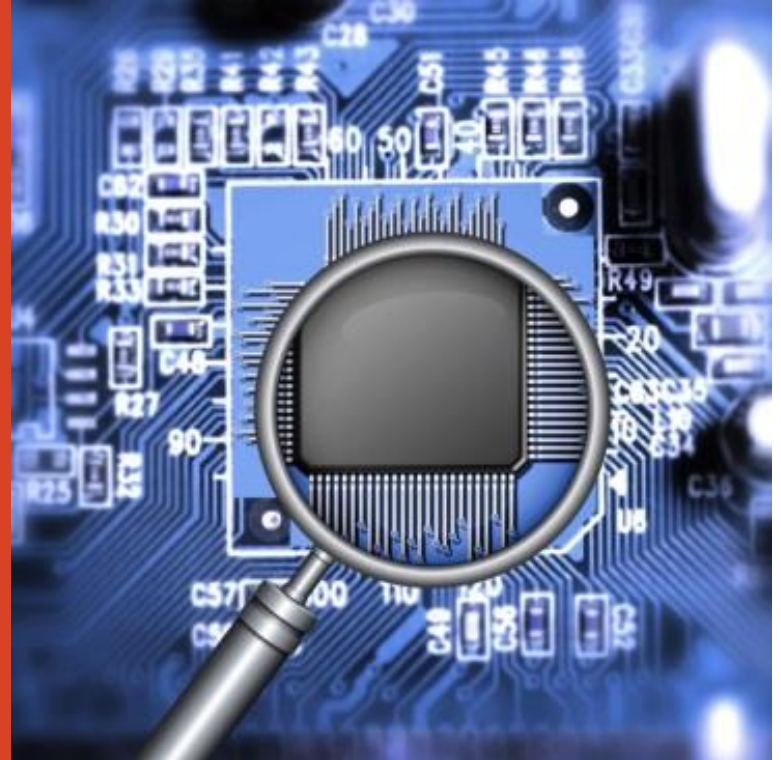
## **Responds to memory errors preventing reoccurrences**

-Makes memory errors virtually nonexistent, so the bad memory is never revisited again and the DIMM can still be used

-With a simple system reboot, RMT isolates the defective area in memory and hides it from the OS

**With Dell RMT PRO:** The bad memory bit is mapped out, so the DIMM can still be used

**Without Dell RMT PRO:** Bad memory is still present, leaving your system vulnerable to blue screens or requiring resources to replace



# Dell Intel CAS-W

Increased storage performance with cache acceleration solution for workstations

## Exclusive Dell solution

### More performance for your dollar

- Enable I/O speeds close to that of solid-state drive configurations at the storage and price of traditional drives

### More immediate access to your most frequently used files

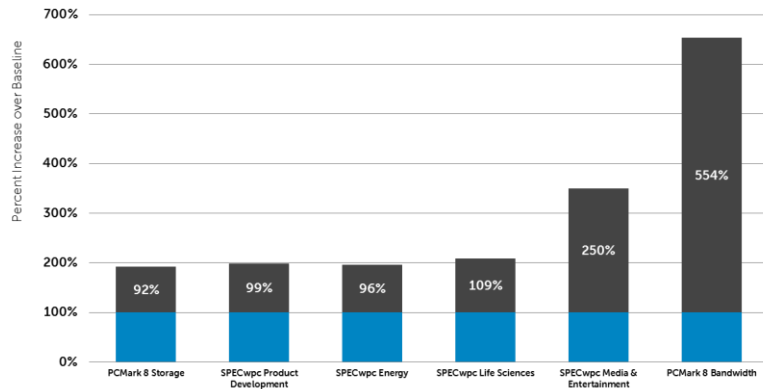
- It gives large capacity, spinning disk drives high performance like a Solid State Drive (SSD)

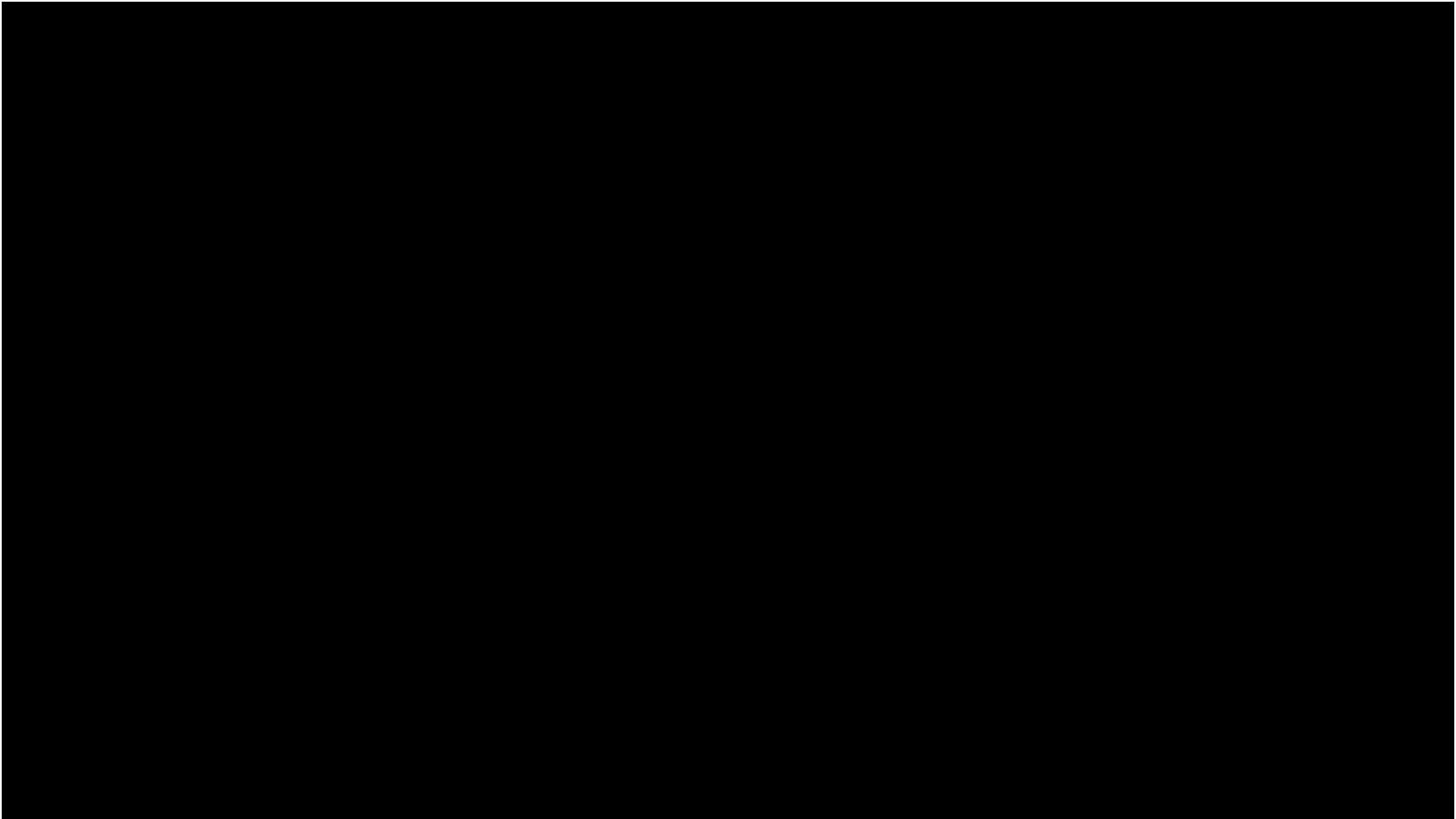
### Better user experience

- Up to 3.6x higher frame rate in Adobe After Effects® 2015 and up to 70% increased frame rates in AutoCAD® 2015

Available on Dell Precision Tower workstations

Increased Storage Performance with CAS-W







# Dell Precision Roadmap



## Precision 15 3000 Series | 3510

- Built with enhanced carbon fiber materials for superior durability without weight
- Smaller chassis design - 377.1 x 252.6 x 24.55mm
- Starting at 2.2kg
- Intel Sky Lake processors – Core i5, i7, Xeon Quad Core
- DDR4 memory 2133Mhz NECC, ECC - up to 32GB
- Storage- PCIe M.2 SSD, SATA M.2 SSD; 2.5" SATA drives
- Professional graphics – AMD W5130M with 2GB GDDR5
- E- Docking across all configurations
- Thunderbolt Option with i7, Xeon (via Type C connector)



## New Precision 15 3000 Series | 3520

- The latest Kaby Lake Intel® Core™ and Xeon® processors
- Next generation NVIDIA Quadro® M620 professional graphics – 2GB
- 3 display options up to FHD touch
- Faster 2400Mhz DDR4 memory - up to 32GB NECC / ECC
- Higher capacity batteries up to 68Whr 4 cell battery / 92Whr cell option
- Cable docking (No E Dock)
- Exclusive Dell Precision Optimizer auto-tuning runs professional apps even faster



## Precision 15 5000 Series | 5510

**The thinnest, lightest, smallest, best looking mobile workstation in the market**

- **Best-in-class, premium form factor Thinner, lighter and more durable - carbon fiber materials for superior durability w/o the weight**
- **Intel® Core™ & Intel® Xeon® Sky Lake processors**
- **InfinityEdge display gives you 15.6" viewing in a 14" Chassis**
- **PremierColor FHD and 4K UHD touch options (100% RGB)**
- **Professional-grade NVIDIA Quadro® graphics**
- **Up to 2TB SSD storage, using ultra-fast PCIe SSDs**



## New Precision 15 5000 Series | 5520

- **The latest Kaby Lake Intel® Core™ and Xeon® processors**
- **Next generation NVIDIA Quadro® M1200 professional GPU – 4GB**
- **2 display options up to UHD touch w/100% Adobe RGB**
- **Faster 2400Mhz DDR4 memory - up to 32GB**
- **Higher capacity batteries up to 97Whr battery**
- **Cable docking (No E Dock)**
- **No ID change from previous generation**



## Precision 15 7000 Series | 7510

**The world's most powerful mobile 15" workstations in the market**

- New industrial design with best-in-class premium materials
- Intel 6<sup>th</sup> Gen i5, i7, & Xeon Sky Lake Processors
- 15" brilliant display with optional 4K Ultra HD and FHD touch
- DDR4 2133Mhz NECC / ECC – 64Gb
- Up to 3TB storage using ultra-fast PCIe SSDs, including RAID 0/1/5 support
- Industry best docking experience
- Designed, certified and optimized to run leading ISV applications



## New Precision 15 7000 Series | 7520

- The latest Intel® Core™ and Xeon® Kaby Lake processors
- Next generation professional graphics: 2xRadeon Pro™ WX and 2xNVIDIA Quadro® upto 4GB
- 4 display options up to UHD - 100% Adobe RGB
- Faster 2400Mhz & 2667Mhz DDR4 memory - up to 64 GB NECC / ECC
- Exclusive Dell Precision Optimizer auto-tuning runs professional apps even faster
- Cable docking and E Dock support



## Precision 17 7000 Series | 7710

### The worlds most powerful 17" mobile workstation

- Exclusive Dell Precision Optimizer automatically tunes your Workstation to run specific programs at the fastest speeds possible
- **Advanced cooling solution with dual fans and improved airflow**
- 17.3" brilliant display with optional 4K Ultra HD
- **Powerful 6th gen Intel® Core™ & the world's first mobile Intel® Xeon® processors**
- **AMD FirePro™ and NVIDIA Quadro® professional graphics options**
- Up to 4TB storage using ultra-fast PCIe SSDs, including RAID 0/1/5 support



## New Precision 17 7000 Series | 7720

### The worlds most powerful VR Ready 17" mobile workstation

- **First VR-ready mobile workstation**
- **The latest Intel® Core™ and Xeon® Kaby Lake processors**
- **Next generation professional graphics: 2xRadeon Pro™ WX and 4xNVIDIA Quadro®.**
- 3 display options up to UHD w/100% Adobe RGB
- **Faster 2400Mhz & 2667Mhz DDR4 memory - up to 64 GB NECC / ECC**
- Exclusive Dell Precision Optimizer auto-tuning runs pro apps even faster
- No ID change from previous generation



## Precision 5720 All-in-One

**Built for powerful ideas.**

- **Outstanding reliability** with ISV certifications, ECC memory and Dell Precision Optimizer
- **Beautiful front-of-screen experience** from a 27" 4K panel with 100% Adobe color gamut to reproduce real world colors and a narrow border for more screen real estate
- **Powerful performance** with Intel® Xeon or Intel® Core™ processors, professional AMD FirePro™ graphics, studio quality audio and 2x Thunderbolt™ 3 ports
- **Easy to service and manage** with simple access to components and the world's best manageability



## Dell Canvas

**Work at the speed of thought.**

- An entirely new method of creating designs and interacting with data
- **27" touchscreen** that lays flat on user's desk or can be articulated up to 10° with integrated feet
- **20 point touch** for collaboration, highly Precise pen for creation and dual-handed productivity enabled via totems
- **Full Integration** with key ISV applications such as Adobe, Autodesk, Avid, Solidworks, Landmark etc.
- Premium experience in Windows 10 Continuum
- System compute comes from workstation
- Intended for use in conjunction with a single or multiple vertical monitor(s)



# Dell Precision Tower 3000 Series: 3420 and 3620

The performance and reliability you need without breaking the bank

- New smaller SFF chassis (Tower 3420 - 7% smaller than T1700 SFF)
- Tower 3620 leveraging existing T1700 MT chassis
- Intel Sky Lake processors (Core i3, i5, i7, Xeon E3-1200 v5)
- Up to 64GB 2133Mhz NECC/ECC DDR4 memory
- Storage: PCIe M.2 SSD, 2.5" SSD, 3.5" SATA, 2.5" SATA, SED SSD
  - Max Storage: Up to 9TB on Tower 3620 & 5TB on Tower 3420
- Professional graphics from NVIDIA/AMD as well as Intel Integrated Graphics
- Thunderbolt 2 Option (via add in card)
- Extended list of ISV Certifications
- Dell Precision Optimizer 3.0 (2.5 Factory installed at launch)
- SFF Chassis adds optional Intel Wireless Option, Internal SD Card Reader & cable cover
- OS: Windows 7 , 8.1, 10; RHEL 7.2; Ubuntu 14.04 SP1, NeoKylin 6.0 (China)





# Dell Precision Tower 5000 Series Tower : 5810

## Mainstream Single Socket Tower Workstation

- Intel Haswell Xeon E5-1600/E5-2600 V3 + Intel Broadwell E5-1600/E5-2600 V4 options.
- Up to 256GB\* DDR4 ECC @ 2133Mhz in 8 DIMMS with Dell RMT
- 6Gb/s AHCI SATA (all ports), SW RAID 0,1,5,10
- 12Gb/s PCI-e controller card options
- Up to 4x 2.5" or 3x 3.5" HDD/SSD, 5.25" option bay and Slimline ODD options
- Expanded PCIe SSD Storage 700GB, 1.4GB\*
- Slots: 2x PCIe16-G3, PCIe4-G3, PCIe4-G2, 1x PCI Legacy
- Improved acoustic performance
- Up to 300W multi-card graphics with next gen FirePro/Quadro solutions (2x)
- V2.0 Dell Precision Optimizer & V2.0 Intel CAS SWHW option\* (128GB SSD)
- Thunderbolt 2.0, 1394 a/b and serial port PCIe card options





# Dell Precision Tower 7000 Series : 7810

- Intel Haswell Xeon E5-2600 V3 Series up to 160W & 18 cores per CPU
  - Dual CPU option (doubles cores & memory bandwidth for highly threaded apps)
- Intel Broadwell Xeon E5-2600 V4 up to 145W & 22 cores per CPU
- Up to 256GB\* DDR4 ECC @ 2400Mhz in 8 DIMMS with Dell RMT
- 6Gb/s AHCI SATA , SW RAID 0,1,5,10 and 12Gb/s PCI-e controller card options
- Up to 4x 2.5" or 3x 3.5" HDD/SSD , 5.25" option bay and Slimline ODD options
- Expanded PCIe SSD Storage 700GB, 1.4GB\*
- Slots: 2x PCIe16-G3, PCIe4-G3, PCIe4-G2, 1x PCI Legacy
- Improved acoustic performance
- Up to 300W multi-card graphics with next gen FirePro/Quadro solutions (x2)
- Intel Vpro and Open-Manage (OMCI) Systems Management
- V2.0 Dell Precision Optimizer & V2.0 Intel CAS SW/HW option (128GB SSD)\*
- Thunderbolt 2.0, 1394 a/b and serial port PCIe card options



\*Post RTS



# Dell Precision Tower 7000 Series : 7910

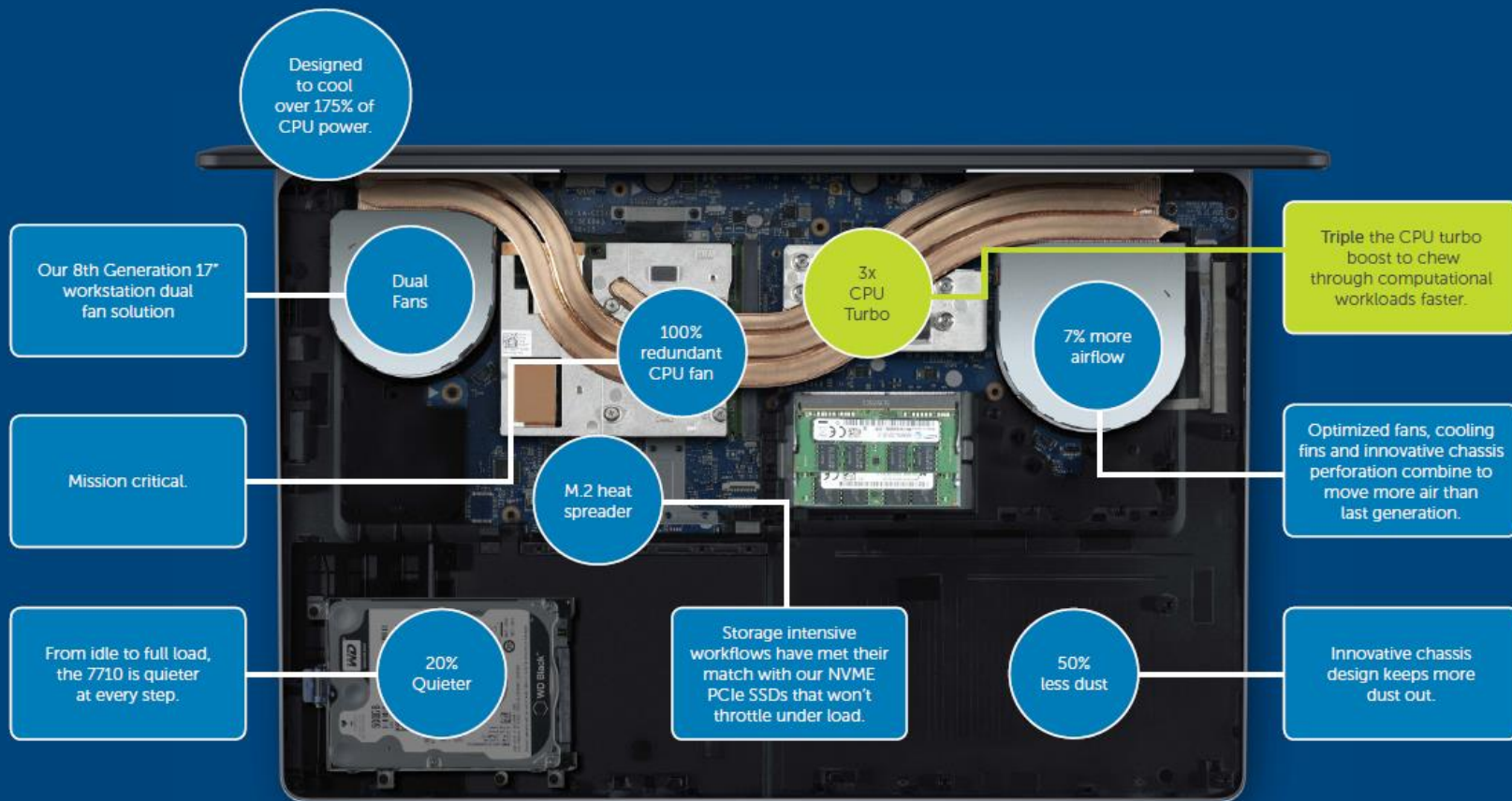
## High-End Dual Socket Tower/Rackable Workstation

- Intel Haswell EP Xeon E5-2600 V3 Series up to 160W and 18 cores\* per CPU
  - Dual CPU option (doubles cores & memory bandwidth for highly threaded apps)
- Intel Broadwell Xeon E5-2600 V4 up to 145W & 22 cores per CPU
- Up to 1TB\* DDR4 ECC @ 2400Mhz in 16 DIMMS with Dell RMT
- Integrated LSI 3008 12Gb/s SATA/SAS (RAID 0,1,10) plus optional 12Gb/s LSI MegaRAID® SAS 9341-8i & 9361-8i PCI-e card options
- Up to 8x 2.5" or 4x 3.5" HDD/SSD
- Future Liquid Cooling option for Tower 7910
- Expanded PCIe SSD Storage 700GB, 1.4GB\*
- Slots: 4x PCIe16-G3, 2x PCIe4-G3/G2, 1x PCI Legacy
- Up to 675W multi-card graphics with next gen FirePro/Quadro solutions (x4)
- Removable PCIe retention mechanism to enable consumer graphics options
- Intel Vpro and Open-Manage (OMCI) Systems Management
- V2.0 Dell Precision Optimizer & V2.0 Intel CAS SW/HW option\* 128GB SSD
- Thunderbolt 2.0, 1394 a/b and serial port PCIe card options

\*Post RTS



# Dell Precision 17 7000 Series thermals





Thank you

