MSC Apex® 2023.1

Installation Guide

HEXAGON

Disclaimer

Required Hardware and Software Configurations

Hardware and Software Requirements

MSC Apex supports the following Microsoft Windows hardware and software.

Computer Requirements	
Hardware Platforms	Intel Core 2 Duo, I7 and Intel Xeon, Intel Core 2 Quad
Memory	8 GB Minimum 16 GB (or higher) Recommended
Swap Space/Page File	Swap = 1.5 times the memory size.
Disk Space	12-20GB*
Operating Systems	Windows 10 Professional 64-bit : 1903: Certified 1709, 1803: Available
Other	3 Button Mouse Active network card for licensing.
Graphics Devices	1280x1024 or higher resolution

The application may actually run with fewer resources than shown, but we recommend these minimums for practical use. These guidelines are based on typical use.

Note:	*Benchmark testing suggests that up to a 30% increase in performance of simulation can be realized if the operating system, MSC Apex installation and the Solver Scratch directory is on a Solid State Disk compared to the same installation on a SATA hard disk drive. MSC Apex may not be installed on shared or mapped network drives.

Virtual Machine Requirements

Virtual Machine Host Requirements	
Hardware Platform	Intel Xeon E Series Processors (2 CPUs)
Memory	256 GB Minimum
Disk Space	800 GB SSD
Graphics Card	NVidia Grid K1 or K2 or M6
Network	10 Gigabit
Network Connection Speed to VDI device	Minimum 5 Mbps upload/5 Mbps download or higher is recommended.
VM Client	VMware Horizon View 6.0
VMware Hypervisor	vSphere 5.5
Display Protocol	vDGA using PCoIP

	Virtual Machine Requirements
VM Operating Systems	Windows 10 Professional 64-bit
VM Virtual Processors	4
VM Memory	8 GB Minimum 16 GB (or higher) Recommended
VM Swap Space/Page File	Swap = 1.5 times the memory size.
VM Disk Space	12-20GB
VM Disk IOPs	1000
OpenGL	OpenGL 3.3 or higher
Screen Resolution	1280x1024 or higher resolution
Other	3 Button Mouse

MSC Apex also supports VMware Workstation 12 Player to create a virtual machine on a laptop or desktop.

In order to run Apex using Remote Desktop, the remote machine should have an Nvida Quadro card that is already included in the list of MSC Apex Supported Hardware (see MSC Apex Certified Hardware table below) and a driver version of 9.18.13.4105 or higher. For other cards; third party remote access tools (such as RealVNC) have to be used.

For the latest information on supported platforms for upcoming releases of Hexagon products, please visit the following web site: http://www.hexagon.com/Support/Platform-Support/Default.aspx

Peripheral Devices

3DCONNEXION's SpacePilot PRO, SpaceMouse PRO and SpaceNavigator products, have been tested with Apex. "3DxWare 10 for Windows (64-bit)" version "10.4.3" is the required driver.

Note: In order for your device to operate properly, you may have to copy

..\MSC Apex\2022-xxxxxx\clef\Framework\AppFrame\res\MSC_Apex_3dMouse.xml to C:\Program Files\3Dconnexion\3DxWare\3DxWinCore64\Cfg

The 3dConnexion Driver will automatically create an <appName>.xml 3dMouse configuration file for applications that have not already provided an xml file for the application. If you have problems, you should delete any found MSC_Apex*.xml files from the UserData…3dConnexion… folders.

Other Software Requirements

- Adobe Flash Player Version 11 or higher is required to view the tutorials that are included with MSC Apex.

Supported Graphics Cards and OpenGL Acceleration

Apex uses OpenGL acceleration. Any graphics board and driver combination that supports OpenGL version 3.3 or higher and 1280x1024 resolution or greater should work with the application. Hexagon has, however, tested the following specific graphics adapters to verify compatibility with the application on Windows. We cannot guarantee the functionality of other graphics devices.

Dual Graphics Cards

If running MSC Apex on a system with dual graphics cards, it is recommended that you choose to activate the high performance graphics processor instead of the integrated graphics for MSC Apex. For more information, please review the following SimCompanion article regarding usage and configuration of dual graphics cards:

https://simcompanion.hexagoncom

MSC Apex Certified Hardware
Windows 10:

Brand-Model	CPU	Graphics Card	Graphics Card Driver
HP Zbook Fury 16 G9	Intel(R) Core(TM) i7-12850HX 2.80 GHz	NVIDIA RTX A2000	31.0.15.2667
HP Zbook Fury 16 G9	Intel(R) Core(TM) i7-12850HX 2.10 GHz	NVIDIA RTX A3000	30.0.15.1298
HP Zbook Fury 16 G9	Intel(R) Core(TM) i7-12850HX 2.80 GHz	AMD Radeon™ Pro W6600M	31.0.12026.3004
HP Zbook Firefly G9	Intel(R) Core(TM) i7-1265U 1.80 GHz	NVIDIA RTX A500	31.0.15.1713
HP Zbook Studio 16 G9	Intel(R) Core(TM) i7-12800H 2.40 GHz	NVIDIA RTX A4500	31.0.15.2667
HP Zbook Firefly 14 G9	Intel(R) Core(TM) i7-1265U 1.80 GHz	NVIDIA RTX T550	31.0.15.1713
HP Zbook 15 G3	Intel(R) Core(TM) i7-6820HQ CPU @ 2.70GHz ~2.71GHz (8 CPUs)	NVIDIA Quadro M1000M	10.18.13.5461
HP Zbook 15u G3	Intel(R) Core(TM) i7-6600U CPU @ 2.60GHz ~2.81GHz (8 CPUs)	AMD FirePro W4190M	15.201.1701.1005
HP Zbook 15 G3	Intel(R) Xeon(R) CPU E5-1545M v5 @ 2.9GHz ~2.8GHz(8 CPUs), 16GB	Intel® Iris™ Pro Graphics P580	20.19.15.4444
HP Zbook 15 G3	Intel(R) Core(TM) i7-6820HQ CPU @ 2.70GHz ~2.70GHz (8 CPUs)	AMD FirePro W5170M	15.201.2601.1003
HP Zbook 17 G3	Intel(R) Core(TM) i7-6820HQ CPU @ 2.70GHz ~2.70GHz (8 CPUs)	NVIDIA Quadro M2000M	10.18.13.5461
HP Zbook 17 G3	Intel(R) Core(TM) i7-6820HQ CPU @ 2.70GHz ~2.70GHz (8 CPUs)	NVIDIA Quadro M5000M	10.18.13.5461

Brand-Model	CPU	Graphics Card	Graphics Card Driver
Dell Precision 7530	Intel(R) Xeon(R) E-2176M CPU @ 2.70GHz (12 CPUs), ~2.7GHz	NVIDIA Quadro P1000	23.21.13.9827
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	NVIDIA Quadro RTX 6000	24.21.14.1216
*HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	NVIDIA Quadro RTX 5000	24.21.14.1195
*HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	NVIDIA Quadro RTX 4000	24.21.14.1195
*HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	NVIDIA Quadro RTX 8000	25.21.14.1917
HP ProBook 650 G2	Intel(R) Core(TM) i7-6600U CPU @ 2.60GHz (4 CPUs), ~2.8GHz	AMD Radeon (TM) R7 M350	25.20.15031.5004
*HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	NVIDIA Quadro RTX 5000	25.21.14.1917
*HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	NVIDIA Quadro RTX 6000	25.21.14.1917
*HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	NVIDIA Quadro RTX 4000	25.21.14.1917
*HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	NVIDIA Quadro P2200	26.21.14.3064
*HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radeon Pro WX 3200 Series	26.20.11002.1001
HP ZBook 14u G6	Intel(R) Core (TM) i7-8665U CPU @ 1.90GHz 2.11 GHz	AMD Radeon Pro WX3200 Graphics	25.20.15026.2

Brand-Model	CPU	Graphics Card	Graphics Card Driver
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radeon Pro WX3200	26.20.11024.1
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radeon Pro WX2100	26.20.11024.1
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radeon Pro WX3100	26.20.11024.1
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radeon Pro WX4100	26.20.11024.1
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radeon Pro WX5100	26.20.11024.1
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radeon Pro WX7100	26.20.11024.1
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radeon Pro WX8200	26.20.11024.1
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radeon Pro WX9100	26.20.11024.1
HP Zbook15u G4	Intel(R) Core(TM) i7-7600U CPU @ 2.80GHz (4 CPUs), ~2.9GHz	AMD FirePro W4190M	21.19.142.32768
Dell 3460	Intel(R) Core(TM) i7-12700	NVIDIA Quadro RTX 3000	31.0.15.1640
Dell 3571	Intel(R) Core(TM) i7-12800H	NVIDIA T600	10.0.19041.1741
Dell 3650		NVIDIA Quadro M6000	30.0.14.7168
Dell 5570	Intel(R) Core(TM) i7-12800H	NVIDIA RTX A1000	31.0.15.1700

Brand-Model	CPU	Graphics Card	Graphics Card Driver
Dell Precision 7520	Intel(R) Core(TM) i7-7920HQ CPU @ 3.10GHz (8 CPUs), ~3.1GHz	AMD Radeon Pro WX 4130	21.19.384.3
Dell Precision 7520	Intel(R) Xeon(R) CPU E3-1535M v6 @ 3.10GHz (8 CPUs), ~3.1GHz	AMD Radeon Pro WX 4150	21.19.384.3
Dell Precision 7520	Intel(R) Core(TM) i7-7920HQ CPU @ 3.10GHz (8 CPUs), ~3.1GHz	NVIDIA Quadro M1200	21.21.13.7586
Dell Precision 7520	Intel(R) Core(TM) i7-7920HQ CPU @ 3.10GHz (8 CPUs), ~3.1GHz	NVIDIA Quadro M2200	21.21.13.7586
Dell Precision 7720	Intel(R) Core(TM) i7-7920HQ CPU @ 3.10GHz (8 CPUs), ~3.1GHz	AMD Radeon Pro WX 4130	21.19.384.3
Dell Precision 7720	Intel(R) Core(TM) i7-7920HQ CPU @ 3.10GHz (8 CPUs), ~3.1GHz	AMD Radeon Pro WX 7100	21.19.384.3
Dell Precision 7720	Intel(R) Core(TM) i7-7920HQ CPU @ 3.10GHz (8 CPUs), ~3.1GHz	NVIDIA Quadro P3000	21.21.13.7586
Dell Precision 7720	Intel(R) Core(TM) i7-7920HQ CPU @ 3.10GHz (8 CPUs), ~3.1GHz	NVIDIA Quadro P4000	21.21.13.7586
Dell Precision 7720	Intel(R) Xeon(R) CPU E3-1535M v6 @ 3.10GHz (8 CPUs), ~3.1GHz	NVIDIA Quadro P5000	21.21.13.7586
Dell Precision T1500	Intel(R) Core(TM) i7 CPU 860 @ 2.80GHz, ~2.80GHz	AMD FirePro V4800(FireGL V)	15.201.2401.0
HP Zbook 15 G4	Intel(R) Core(TM) i7-7820HQ CPU @ 2.90GHz ~2.90GHz (8 CPUs)	NVIDIA Quadro M1200	377.43
HP Zbook 15 G4	Intel(R) Core(TM) i7-7820HQ CPU @ 2.90GHz ~2.90GHz (8 CPUs)	AMD Radeon Pro WX4150	16.40.3801.1002

Brand-Model	CPU	Graphics Card	Graphics Card Driver
HP Zbook 17 G4	Intel(R) Core(TM) i7-7820HQ CPU @ 2.90GHz ~2.90GHz (8 CPUs)	NVIDIA Quadro M2200	377.43
HP Zbook 17 G4	Intel(R) Core(TM) i7-7820HQ CPU @ 2.90GHz ~2.90GHz (8 CPUs)	NVIDIA Quadro P5000	377.43
HP Zbook Studio G4	Intel(R) Core(TM) i7-7820HQ CPU @ 2.90GHz ~2.90GHz (8 CPUs)	NVIDIA Quadro M1200	377.43
Dell Precision 7920 Tower	Intel(R) Xeon(R) Gold 6130 CPU @ 2.10GHz (64 CPUs), ~2.1GHz	NVIDIA Quadro P600	377.11
Dell Precision 7920 Tower	Intel(R) Xeon(R) Gold 6130 CPU @ 2.10GHz (64 CPUs), ~2.1GHz	NVIDIA Quadro P1000	377.11
Dell Precision 7920 Tower	Intel(R) Xeon(R) Gold 6130 CPU @ 2.10GHz (64 CPUs), ~2.1GHz	NVIDIA Quadro P2000	377.11
Dell Precision 7920 Tower	Intel(R) Xeon(R) Gold 6130 CPU @ 2.10GHz (64 CPUs), ~2.1GHz	NVIDIA Quadro P4000	377.11
Dell Precision 7920 Tower	Intel(R) Xeon(R) Gold 6130 CPU @ 2.10GHz (64 CPUs), ~2.1GHz	NVIDIA Quadro P5000	377.11
Dell Precision 7920 Tower	Intel(R) Xeon(R) Gold 6130 CPU @ 2.10GHz (64 CPUs), ~2.1GHz	NVIDIA Quadro P6000	377.11
Dell Precision 7920 Tower	Intel(R) Xeon(R) Gold 6130 CPU @ 2.10GHz (64 CPUs), ~2.1GHz	AMD Radeon WX4100	17.10.1730.1004
Dell Precision 7920 Tower	Intel(R) Xeon(R) Gold 6130 CPU @ 2.10GHz (64 CPUs), ~2.1GHz	AMD Radeon WX5100	17.10.1730.1004
Dell Precision 7920 Tower	Intel(R) Xeon(R) Gold 6130 CPU @ 2.10GHz (64 CPUs), ~2.1GHz	AMD Radeon WX7100	17.10.1730.1004
HP Z8 G4 Workstation	Intel(R) Xeon(R) Gold 6128 CPU @ 3.40GHz (24 CPUs), ~3.4GHz	AMD Radeon WX2100	22.19.640.2

Brand-Model	CPU	Graphics Card	Graphics Card Driver
HP Z8 G4 Workstation	Intel(R) Xeon(R) Gold 6128 CPU @ 3.40GHz (24 CPUs), ~3.4GHz	AMD Radeon WX3100	22.19.640.2
HP Z8 G4 Workstation	Intel(R) Xeon(R) Gold 6128 CPU @ 3.40GHz (24 CPUs), ~3.4GHz	AMD Radeon WX4100	22.19.640.2
HP Z8 G4 Workstation	Intel(R) Xeon(R) Gold 6128 CPU @ 3.40GHz (24 CPUs), ~3.4GHz	AMD Radeon WX9100	22.19.640.2
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8 CPUs), ~4.0GHz	AMD Radeon WX2100	22.19.640.2
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8 CPUs), ~4.0GHz	AMD Radeon WX3100	22.19.640.2
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8 CPUs), ~4.0GHz	AMD Radeon WX4100	22.19.640.2
*****HP Z8 G4 Workstation	Intel(R) Xeon(R) Gold 6128 CPU @ 3.40GHz (24 CPUs), ~3.4GHz	NVIDIA Quadro P4000	385.69
*HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8 CPUs), ~4.0GHz	NVIDIA Quadro P620	23.21.13.9077
*HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8 CPUs), ~4.0GHz	AMD Radeon WX9100	22.19.693.256
HP ZBook 14u G5	Intel(R) Core(TM) i7-8650U CPU @1.90GHz 2.11GHz	AMD Radeon Pro WX 3100	23.20.787.768
Dell Precision 7530	Intel(R) Core(TM) i7-8850H CPU @2.60GHz 2.59GHz	NVIDIA Quadro P2000	23.21.13.8908
Dell Precision 3530	Intel(R) Xeon(R) E-2176M CPU @2.70GHz 2.71GHz	NVIDIA Quadro P600	23.21.13.8908
Dell Precision 7730	Intel(R) Core(TM) i9-8950HK CPU @2.90GHz 2.90GHz	NVIDIA Quadro P3200	23.21.13.8908

Brand-Model	CPU	Graphics Card	Graphics Card Driver
HP ZBook 17 G5	Intel(R) Core(TM) i7-8850H CPU @ 2.60GHz (12 CPUs), ~2.6GHz	NVIDIA Quadro P5200	23.21.13.9148
******HP ZBook 17 G5	Intel(R) Core(TM) i7-8850H CPU @ 2.60GHz (12 CPUs), ~2.6GHz	NVIDIA Quadro P2000	23.21.13.9148
******HP ZBook Studio x360 G5	Intel(R) Core(TM) i7-8850H CPU @ 2.60GHz (12 CPUs), ~2.6GHz	NVIDIA Quadro P1000	23.21.13.9148
******HP ZBook 15 G5	Intel(R) Core(TM) i7-8850H CPU @ 2.60GHz (12 CPUs), ~2.6GHz	AMD Radeon (TM) Pro WX Series	24.20.12024.10
******Dell Precision 7730	Intel(R) Core(TM) i7-8850H CPU @ 2.60GHz (12 CPUs), ~2.6GHz	AMD Radeon (TM) Pro WX 7100 Graphics	24.20.12024.10
HP Z840	Intel (R) Xeon CPU E5-2620 v4 @2.10 GHz	AMD Radeon (TM) Pro WX 8200	18.Q3
*******HP Z840	Intel (R) Xeon CPU E5-2620 v4 @2.10 GHz	AMD Radeon (TM) Pro WX 8200	18.Q4
Dell Precision 7530	Intel(R) Xeon(R) E-2176M CPU @ 2.70GHz (12 CPUs), ~2.7GHz	NVIDIA Quadro P1000	23.21.13.9827
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	NVIDIA Quadro RTX 6000	24.21.14.1216
*HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	NVIDIA Quadro RTX 5000	24.21.14.1195
*HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	NVIDIA Quadro RTX 4000	24.21.14.1195
*HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	NVIDIA Quadro RTX 8000	25.21.14.1917
HP ProBook 650 G2	Intel(R) Core(TM) i7-6600U CPU @ 2.60GHz (4 CPUs), ~2.8GHz	AMD Radeon (TM) R7 M350	25.20.15031.5004

Brand-Model	CPU	Graphics Card	Graphics Card Driver
*HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	NVIDIA Quadro RTX 5000	25.21.14.1917
*HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	NVIDIA Quadro RTX 6000	25.21.14.1917
*HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	NVIDIA Quadro RTX 4000	25.21.14.1917
*HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	NVIDIA Quadro P2200	26.21.14.3064
*HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radeon Pro WX 3200 Series	26.20.11002.1001
HP ZBook 14u G6	Intel(R) Core (TM) i7-8665U CPU @ 1.90GHz 2.11 GHz	AMD Radeon Pro WX3200 Graphics	25.20.15026.2
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radeon Pro WX3200	26.20.11024.1
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radeon Pro WX2100	26.20.11024.1
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radeon Pro WX3100	26.20.11024.1
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radeon Pro WX4100	26.20.11024.1
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radeon Pro WX5100	26.20.11024.1
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radeon Pro WX7100	26.20.11024.1

Brand-Model	CPU	Graphics Card	Graphics Card Driver
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radeon Pro WX8200	26.20.11024.1
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radeon Pro WX9100	26.20.11024.1
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radeon Pro W5700	19. Q4
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radon Pro W5500	20. Q1
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radon Pro WX3100	20. Q1
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radon Pro WX3200	20. Q1
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radon Pro WX4100	20. Q1
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radon Pro WX5100	20. Q1
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radon Pro WX7100	20. Q1
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radon Pro WX8200	20. Q1
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radon Pro WX9100	20. Q1
HP Z4 G4 Workstation	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radon Pro WX5700	20. Q1

Brand-Model	CPU	Graphics Card	Graphics Card Driver
HP ZBook 15 G6	Intel(R) Core(TM) i7-9850H CPU @2.60GHz(12 CPUs)~2.6GHz	NVIDIA Quadro T1000	25.21.14.2591
HP ZBook 15 G6	Intel(R) Core(TM) i7-9850H CPU @2.60GHz(12 CPUs)~2.6GHz	NVIDIA Quadro RTX3000	25.21.14.2591
HP ZBook 17 G6	Intel(R) Core(TM) i7-9850H CPU @2.60GHz(12 CPUs)~2.6GHz	NVIDIA Quadro RTX5000	25.21.14.2591
Dell Precision 7540	Intel(R) Core(TM) i7-9750H CPU @ 2.60GHz (12 CPUs), ~2.6GHz	AMD Radeon(TM) Pro WX3200 Graphics	26.20.13028.13
Dell Precision 7540	Intel(R) Core(TM) i7-9750H CPU @ 2.60GHz (12 CPUs), ~2.6GHz	NVIDIA Quadro T2000	26.21.14.4219
Dell Precision 7740	Intel(R)Xeon(R)E-2276M CPU @2.80GHz (12CPUs),~2.8GHz	NVIDIA Quadro RTX 5000	26.21.14.4219
HP ZBook Fury 17 G7	Intel(R) Core(TM) i7-10850H CPU @2.70GHz	NVIDIA Quadro RTX5000	27.20.11027.4001
HP ZBook Fury 15 G7	Intel(R) Core(TM) i7-10850H CPU @2.70GHz	AMD Radeon(TM) Pro W5500M	27.21.14.5167
HP Zbook Studio G7	Intel(R) Core(TM) i7-10850H CPU @2.70GHz	NVIDIA Quadro RTX4000	27.21.14.5167
HP Zbook Studio G7	Intel(R) Core(TM) i7-10850H CPU @2.70GHz	NVIDIA Quadro RTX3000	27.21.14.5167
HP Zbook Studio G7	Intel(R) Core(TM) i7-10850H CPU @2.70GHz	NVIDIA Quadro T2000	27.21.14.5167
HP Zbook Studio G7	Intel(R) Core(TM) i7-10850H CPU @3.00GHz	NVIDIA Quadro T1000	27.21.14.5167
HP Zbook Firefly 14 G8	Intel(R) Core(TM) i7-1185G7 CPU @2.70GHz	NVIDIA T500	27.21.14.5256

Brand-Model	CPU	Graphics Card	Graphics Card Driver
HP ZBook Fury 15 G8	Intel(R) Core(TM) i7-10850H CPU @2.50GHz	AMD Radeon(TM) Pro W6600M	21.10.16.03
HP Zbook Studio G8	Intel(R) Core(TM) i7-10850H CPU @2.50GHz	NVIDIA RTX A2000	27.21.14.6294
Dell Precision 7750	Intel(R) Core(TM) i9-10880H CPU @2.30GHz	NVIDIA Quadro RTX5000	27.21.14.5148
Dell Precision 7560	Intel(R) Core(TM) i7-11600H CPU @2.90GHz	NVIDIA RTX A2000	27.21.14.6259
Dell Precision 7550	Intel(R) Core(TM) i9-10850H CPU @2.70GHz	NVIDIA Quadro RTX3000	27.21.14.5148
Dell Precision 7550	Intel(R) Core(TM) i7-10880H CPU @2.30GHz	NVIDIA Quadro T1000	27.21.14.5148
Dell Precision 3561	Intel(R) Core(TM) i9-11950H CPU @2.60GHz	NVIDIA T600	27.21.14.6209
Dell Precision 3551	Intel(R) Core(TM) i7-10875H CPU @2.30GHz	NVIDIA Quadro P620	27.21.14.5148
HP ZBook Power G9	Intel® Core™ i7-12700H CPU@ 4.7 GHz	Nvidia T600	30.0.15.1298
HP ZBook Power G9	Intel® Core™ i7-12700H CPU@ 4.7 GHz	Nvidia RTX A1000	30.0.15.1298

Notes:	
	■ If graphical issues still remain with driver update to the latest version, please make sure to update BIOS
	■ For cards with no driver information, please use the latest version certified by the vendor.
	■ If the application is unable to launch and prompts an error regarding your graphics card, using NVidia/ AMD Control Center and adding MSC_Apex.exe to its 3D settings might resolve the issue

* HP Z640 is the HP Z440 with expandability of second processor. The Z440, Z640 and Z840 are all the same Intel Chipset.

**While the application does run on this configuration, there are currently known issues which are being investigated.

Also Supported on HP(Per HP certification process)

- ZBook FireFly 16 G9 NVIDIA T550
- ZBook FireFly 14 & 15 G7 NVIDIA Quadro P520
- ZBook Power G7 NVIDIA Quadro P620, T1000, T2000
- ZBook Studio G9 NVIDIA RTX A1000, NVIDIA RTX A2000, NVIDIA, RTX A3000, NVIDIA RTX A5500
- ZBook Studio/Fury 15 & 17 G7 NVIDIA Quadro T1000, T2000, RTX 3000, RTX 4000, RTX 5000
- ZBook 15 & 17 G7 AMD Radeon Pro W5500M
- ZBook FireFly 14 & 15 G8 NVIDIA T500
- ZBook Fury 16 G9 NVIDIA RTX A1000, NVIDIA RTX A4500, NVIDIA RTX A5500
- ZBook Studio/Fury 15 & 17 G8 NVIDIA T600, T1200, RTX A2000, RTX A3000, RTX A4000, RTX A5000
- ZBook Studio/Fury 16 G9 NVIDIA RTX A4500, NVIDIA RTX A2000, RTX A3000
- ZBook Power G8 NVIDIA T600, T1200, RTX A2000
- Z4/Z6 Desktops per certification of HP Z840.
- RTX A4500 with 472.47 supported on Z4 G4, Z6 G4, Z8 G4.
- Double Memory cards: NVIDIA T400 4G, T1000 8G and RTX A2000 12GB
- AMD Radeon Pro W6600
- HP ZBook Power G9 with RTX A2000

Also Supported with AMD (Per AMD certification process)

- AMD Radeon PRO W6400, W6800 and W6600M

- If graphical issues still remain with driver update to the latest version, please make sure to update the BIOS
- For cards with no driver information, please use the latest version certified by the vendor.
- If the application is unable to launch and prompts an Open GL error, please use NVidia/ AMD Control Center and add MSC_Apex.exe to its 3D settings to solve the issue.

Important:	We can not guarantee the functionality of other graphics devices.

Privileges Requirements

You need administrator privileges to install the application. This allows for C++ runtime libraries and .NET components to be installed.

Installing MSC Apex

If you are downloading from the Solutions Download Center, download the self-extracting archive (.exe) and follow these steps:

- Copy the self-extracting archive (.exe) file to a temporary subdirectory with enough disk space.
- Double-click on the installer and follow the prompts.
- If you are installing localized documentation files, install them after you have installed the MSC Apex executable.

Allowing Installation With Security Software

In order to install MSC Apex, the application and its lockserver must be allowed to execute by any security software on the system. MSC Apex is whitelisted with Symantec, but users with other security software must add exceptions that allow the MSC Apex lockserver to run. If these exceptions are not made, the security software will prevent MSC Apex from installing.

If a security error occurs during Apex installation, users should manually add Apex installation folder to their security software's exception list and then start the lock server using lsconfig.bat. lsconfig.bat is located at :

"<INSTALLATION_FOLDER>\leaf\Services\EOM\WIN8664\bin\lsconfig.bat".

Silent Installation Option

The MSC Apex installer provides a silent installation option where the responses to prompts during one installation may be recorded and repeated to create subsequent identical installations.

Recording an installation

You can record a silent install response file by running an installer with the -r option, which will store the responses in a .iss file that may be used for subsequent installations. For example, to install MSC Apex and record the installation responses to D:\my_response.iss, run the following command:

```
apex_2023_1_windows64.exe -r -f1"D:\my_response.iss"
```

Playing back a recorded installation

To perform additional installations using the responses that were stored in the my_response.iss file run the following command:

```
apex_2023_1_windows64.exe -s -f1"D:\my_response.iss"
```

Notation for Localized Language Silent Installation

To have the silent installation install in a language other than the default of English, you may add the following flags to your command:

- German: -L1031
- Japanese: -L1041

- French: -L1036
- Chinese (Simplified): -L2052

For example, to use the above language flags and install MSC Apex and its associated documentation in German you should run the following command:

```
apex_2023_1_windows64.exe -s -L1031 -f1"D:\mygerman1.iss"
```

Licensing

Once the Setup program has installed all of the files, it will prompt for the licensing information.

Note that global setting of license servers (by explicitly defining the MSC_LICENSE_FILE environment variable for your computer) supersedes the license setting done by MSC Apex during installation.

For more information regarding licensing, please see the MSC Licensing 11.13 User's Guide.