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1. Metashape 2.0.1: **44** images of **PhaseOne iXM-RS150F** 150MP for DSM/DTM and orthophoto.

1. Images – 44; Image size – 150MP; File size (Jpeg) – 130 MB;
2. Forward/Side overlap - 70%/25%; Flight altitude – 1,100m; Image GSD – 4.6 cm; Ortho GSD – 4.6 cm; Area – 3.8 sq.km;

	GPU	CPU	Metashape 192GB	Metashape 192GB	Metashape 192GB	Metashape 192GB	Metashape 192GB	Metashape 512GB
Metashape version			**2.0.1**	**2.0.1**	**2.0.1**	**2.0.1**	**2.0.1**	**2.0.1**
OS			**Linux**	**Linux**	**Linux**	**Linux**	**Linux**	**Linux**
Storage			**Storage Fast**	**Ephemeral 900GB**	**Storage Fast**	**Ephemeral 900GB**	**Storage Fast**	**Storage Fast**
GPU			**4 x TESLA T4**	**4 x TESLA T4**	**4 x TESLA T4**	**4 x TESLA T4**	**No GPU**	**No GPU**
CPU			24 CPU @ **2.50GHz** 48 vCPU	24 CPU @ **2.50GHz** 48 vCPU	24 CPU @ **2.50GHz** 48 vCPU	24 CPU @ **2.50GHz** 48 vCPU	24 CPU @ **3.80GHz** 48 vCPU	32 CPU @ **2.50GHz** 64 vCPU
RAM			**192**	**192**	**192**	**192**	**192**	**512**
Depth Maps Quality			**Ultra High**	**Ultra High**	**High**	**High**	**Ultra High**	**Ultra High**
Match Photos (High)	v	v	46s	44s	46s	44s	N/A	N/A
Align Cameras (High)	v	v	6s	6s	6s	6s	N/A	N/A
Depth Maps (Aggresive)	v	v	15m 27s	14m 43s	4m 55s	4m 48s	N/A	N/A
Point Cloud (Aggresive)		v	1h 57m	1h 47m	26m 43s	24m 53s	1h 39m	2h 8m
Ground points classification		v	1h 18s	1h 11m	17m 45s	15m 44s	1h 10m	1h 21m
DEM (from Dense Cloud)		v	19m 11s	16m 27s	4m 52s	4m 16s	15m 0s	19m 48s
True Orthomosaic (DEM)		v	22m 6s	15m 5s	13m 22s	10m 18s	20m 28s	31m 41s
Price ($/h)			**$11.410**	**$11.410**	**$11.410**	**$11.410**	**$11.882**	**$11.875**
Total time (h)			**4.21**	**3.75**	**1.14**	**1.01**	**3.41**	**4.34**
Total time (h,m)			**4h 13m**	**3h 45m**	**1h 8m**	**1h 1m**	**3h 44m**	**4h 20m**
Total price			**$48.04**	**$42.79**	**$13.01**	**$11.52**	**$40.52**	**$51.54**

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	GPU	CPU	Metashape 192GB	Metashape 192GB	Metashape 192GB	Metashape 192GB	Metashape 256GB	Metashape 256GB	Metashape 256GB
Version			**2.0.1**	**2.0.1**	**2.0.1**	**2.0.1**	**2.0.1**	**2.0.1**	**2.0.1**
OS			**Linux**	**Linux**	**Linux**	**Linux**	**Linux**	**Linux**	**Linux**
Storage			**Storage Fast**	**Ephemeral 3800GB**	**Storage Fast**	**Ephemeral 3800GB**	**Storage Fast**	**Storage Fast**	**Ephemeral 1900GB**
GPU			**4 x A10G**	**4 x A10G**	**4 x A10G**	**4 x A10G**	**1 x A10G**	**1 x A10G**	**1 x A10G**
CPU			24 CPU @ **2.80GHz** 48 vCPU	24 CPU @ **2.80GHz** 48 vCPU	24 CPU @ **2.80GHz** 48 vCPU	24 CPU @ **2.80GHz** 48 vCPU	32 CPU @ **2.80GHz** 64 vCPU	32 CPU @ **2.80GHz** 64 vCPU	32 CPU @ **2.80GHz** 64 vCPU
RAM			**192**	**192**	**192**	**192**	**256**	**256**	**256**
Depth Maps Quality			**Ultra High**	**Ultra High**	**High**	**High**	**Ultra High**	**High**	**High**
Match Photos (High)	v	v	36s	35s	36s	36s	1m 50s	1m 50s	1m 48s
Align Cameras (High)	v	v	6s	6s	6s	6s	6s	6s	7s
Depth Maps (Aggresive)	v	v	10m 16s	9m 17s	3m 10s	2m 59s	27m 39s	8m 27s	8m 26s
Point Cloud (Aggresive)		v	1h 43m	1h 35m	22m 59s	22m 25s	1h 42m	23m 1s	21m 25s
Ground points classification		v	58m 36s	58m 24s	13m 25s	12m 30s	59m 8s	12m 46s	12m 1s
DEM (from Dense Cloud)		v	16m 12s	13m 47s	3m 59s	3m 39s	14m 57s	3m 48s	3m 18s
True Orthomosaic (DEM)		v	18m 35s	12m 12s	10m 44s	8m 52s	17m 48s	11m 12s	8m 43s
Price ($/h)			**$13.979**	**$13.979**	**$13.979**	**$13.979**	**$12.043**	**$12.043**	**$12.043**
Total time (h)			**3.46**	**3.16**	**0.93**	**0.85**	**3.71**	**1.02**	**0.93**
Total time (h,m)			**3h 28m**	**3h 10m**	**56m**	**51m**	**3h 42m**	**1h 1m**	**56m**
Total price			**$48.37**	**$44.17**	**$13.00**	**$11.88**	**$44.68**	**$12.28**	**$11.20**

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2. Metashape 2.0.1: **100** drone 16MP (4864x3648) images for orthophoto and 3D modeling.

	GPU	CPU	Metashape 16GB	Metashape 16GB	Metashape 192GB	Metashape 192GB	Metashape 16GB	Metashape 128GB	Metashape 256GB
OS			**Windows 2019**	**Linux**	**Windows 2019**	**Linux**	**Windows 2019**	**Windows 2019**	**Windows 2019**
Storage			**Storage X standard**	**Storage X standard**	**Storage X standard**	**Storage X standard**	**Storage X standard**	**Storage X standard**	**Storage X standard**
GPU			**1 x TESLA T4**	**1 x TESLA T4**	**4 x TESLA T4**	**4 x TESLA T4**	**1 x RADEON V520**	**2 x RADEON V520**	**4 x RADEON V520**
Processor type			**Intel ® Xeon ® Platinum 8259CL**	**Intel ® Xeon ® Platinum 8259CL**	**Intel ® Xeon ® Cascade Lake 24C**	**Intel ® Xeon ® Cascade Lake 24C**	**AMD EPYC 7R32**	**AMD EPYC 7R32**	**AMD EPYC 7R32**
Processor configuration			1 socket 2 CPU 2.50GHz 4vCPU	1 socket 2 CPU 2.50GHz 4vCPU	1 socket 24 CPU@2.50GHz 48 vCPU	1 socket 24 CPU@2.50GHz 48 vCPU	1 socket 2 CPU@2.80GHz 4vCPU	1 socket 16 CPU@2.80GHz 32vCPU	1 socket 32 CPU@2.80GHz 64vCPU
RAM			16	16	192	192	16	128	256
Match Photos (High)	v	v	1m 25s	1m 10s	30s	29s	1m 7s	39s	29s
Align Cameras		v	1m 14s	1m 9s	17s	12s	53s	15s	13s
Depth Maps (High-High, Aggressive)	v	v	12m 45s	9m 23s	3m 30s	2m 3s	12m 16s	5m 2s	3m 32s
Build Mesh (from Depth Maps, High/High)	v	v	13m 3s	10m 30s	5m 6s	3m 24s	10m 33s	4m 26s	4m 3s
Build Tiled (from Mesh, High/High)	v	v	34m 19s	28m 45s	11m 24s	6m 38s	28m 32s	10m 41s	13m 53s
Point cloud (from Depth Maps)		v	24m 0s	20m 17s	6m 52s	3m 32s	19m 30s	5m 57s	6m 13s
DEM (from Dense cloud)		v	1m 2s	55s	35s	30s	48s	28s	27s
Orthomosaic (from DEM)		v	6m 38s	6m 7s	2m 54s	2m 30s	5m 11s	2m 29s	2m 16s
Price ($/h)			**$2.860**	**$2.811**	**$11.720**	**$11.410**	**$2.845**	**$7.136**	**$11.788**
Total time (h)			**1.57**	**1.30**	**0.52**	**0.32**	**1.31**	**0.50**	**0.52**
Total time (h,m)			**1h 34m**	**1h 18m**	**31m**	**19m**	**1h 19m**	**30m**	**31m**
Total price			**$4.49**	**$3.65**	**$6.09**	**$3.65**	**$3.73**	**$3.57**	**$6.13**

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	GPU	CPU	Metashape 122GB	Metashape 244GB	Metashape 244GB	Metashape 488GB	Metashape 488GB
OS			**Linux**	**Windows 2019**	**Linux**	**Windows 2019**	**Linux**
Storage			**Storage X standard**	**Storage X standard**	**Storage X standard**	**Storage X standard**	**Storage X standard**
GPU			**1 x TESLA M60**	**2 x TESLA M60**	**2 x TESLA M60**	**4 x TESLA M60**	**4 x TESLA M60**
Processor type			**Intel ® Xeon ® E5-2686 v4**	**Intel ® Xeon ® E5-2686 v4**	**Intel ® Xeon ® E5-2686 v4**	**Intel ® Xeon ® E5-2686 v4**	**Intel ® Xeon ® E5-2686 v4**
vCPU			1 socket 8 CPU 2.30GHz 16vCPU	1 socket 16 CPU@2.30GHz 32 vCPU	1 socket 16 CPU@2.30GHz 32 vCPU	2 socket 32 CPU@2.30GHz 64 vCPU	2 socket 32 CPU@2.30GHz 64 vCPU
RAM			122	244	244	488	488
Match Photos (High)	v	v	1m 28s	1m 6s	53s	56s	40s
Align Cameras		v	31s	25s	16s	25s	16s
Depth Maps (High-High, Aggressive)	v	v	10m 52s	7m 49s	5m 55s	5m 35s	3m 48s
Build Mesh (from Depth Maps, High/High)	v	v	6m 3s	6m 5s	4m 42s	6m 18s	4m 28s
Build Tiled (from Mesh, High/High)	v	v	12m 57s	15m 49s	10m 58s	23m 21s	10m 11s
Point cloud (from Depth Maps)		v	7m 12s	8m 37s	4m 54s	10m 7s	4m 34s
DEM (from Dense cloud)		v	37s	43s	34s	42s	33s
Orthomosaic (from DEM)		v	3m 21s	3m 43s	3m 3s	3m 41s	3m 3s
Price ($/h)			**$4.702**	**$7.038**	**$6.827**	**$11.641**	**$11.531**
Total time (h)			**0.72**	**0.74**	**0.52**	**0.85**	**0.46**
Total time (h,m)			**43m**	**44m**	**31m**	**51m**	**28m**
Total price			**$3.39**	**$5.21**	**$3.55**	**$9.89**	**$5.30**

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	GPU	CPU	Metashape 16GB	Metashape 16GB	Metashape 256GB	Metashape 192GB	Metashape 192GB
OS			**Windows 2019**	**Linux**	**Linux**	**Windows 2019**	**Linux**
Storage			**Storage X standard**	**Storage X standard**	**Storage X standard**	**Storage X standard**	**Storage X standard**
GPU			**1 x A10G**	**1 x A10G**	**1 x A10G**	**4 x A10G**	**4 x A10G**
Processor type			**Intel ® Xeon ® Platinum 8259CL**	**Intel ® Xeon ® Platinum 8259CL**	**Intel ® Xeon ® Platinum 8259CL**	**Intel ® Xeon ® Cascade Lake 24C**	**Intel ® Xeon ® Cascade Lake 24C**
Processor configuration			1 socket 2 CPU 2.80GHz 4vCPU	1 socket 2 CPU 2.80GHz 4vCPU	1 socket 32 CPU 2.80GHz 64vCPU	1 socket 24 CPU@2.50GHz 48 vCPU	1 socket 24 CPU@2.50GHz 48 vCPU
RAM			16	16	256	192	192
Match Photos (High)	v	v	47s	38s	36s	34s	21s
Align Cameras		v	54s	50s	11s	13s	11s
Depth Maps (High-High, Aggressive)	v	v	10m 10s	6m 21s	3m 10s	3m 23s	1m 26s
Build Mesh (from Depth Maps, High/High)	v	v	10m 9s	8m 10s	3m 2s	4m 24s	2m 59s
Build Tiled (from Mesh, High/High)	v	v	36m 17s	27m 43s	10m 11s	21m 13s	11m 0s
Point cloud (from Depth Maps)		v	20m 25s	16m 10s	2m 49s	6m 1s	3m 0s
DEM (from Dense cloud)		v	49s	42s	24s	28s	25s
Orthomosaic (from DEM)		v	5m 12s	4m 17s	1m 58s	2m 26s	2m 8s
Price ($/h)			**$3.818**	**$3.793**	**$12.043**	**$14.293**	**$13.979**
Total time (h)			**1.41**	**1.08**	**0.37**	**0.65**	**0.36**
Total time (h,m)			**1h 25m**	**1h 5m**	**22m**	**39m**	**22m**
Total price			**$5.38**	**$4.10**	**$4.46**	**$9.29**	**$5.03**

3. Metashape 1.8.4: **589** drone 42MP (7952x5304) images for orthophoto and 3D modeling.

	GPU	CPU	Metashape 192GB	Metashape 192GB	Metashape 192GB	Metashape 192GB
OS			**Linux**	**Linux**	**Linux**	**Linux**
Storage			**Storage X enhanced another segment**	**Local disk D:**	**Storage X enhanced same segment**	**Local disk D:**
Volume (GB)			**250**	**900**	**250**	**3700**
GPU			**4 x TESLA T4**	**4 x TESLA T4**	**4 x A10G**	**4 x A10G**
Processor configuration			1 socket 24 CPU@2.50GHz 48 vCPU	1 socket 24 CPU@2.50GHz 48 vCPU	1 socket 24 CPU@2.80GHz 48 vCPU	1 socket 24 CPU@2.80GHz 48 vCPU
RAM			192	192	192	192
Match Photos (High)	v	v	7m 28s	6m 2s	4m 41s	4m 29s
Align Cameras		v	2m 0s	2m 0s	1m 44s	2m 8s
Depth Maps (High, Moderate)	v	v	32m 30s	29m 29s	19m 43s	17m 51s
Dense Cloud		v	1h 24m	1h 18m	1h 3m	57m 22s
DEM (from Dense cloud)		v	3m 50s	2m 53s	2m 46s	2m 20s
Orthomosaic (from DEM)		v	33m 32s	20m 47s	21m 22s	17m 42s
Price ($/h)			**$11.356**	**$11.356**	**$13.913**	**$13.913**
Total time (h)			**2.72**	**2.32**	**1.89**	**1.70**
Total time (h,m)			**2h 43m**	**2h 19m**	**1h 53m**	**1h 42m**
Total price			**$30.89**	**$26.35**	**$26.30**	**$23.65**
Build Tiled (from Depth Maps, High/High)	v	v		1h 50m	1h 45m	2h 6m

4. Metashape 1.8.4: **932** drone 12MP (4032x3024) images for orthophoto and 3D modeling.

	GPU	CPU	Points/Resolution	Metashape 192GB
Version				**1.8.4**
OS				**Linux**
Storage				**Storage X standard**
GPU				**4 x TESLA T4**
Processor configuration				24 CPU@2.50GHz 48 vCPU
RAM				192
Match Photos (High)	v	v	1,091,304	**9m 40s**
Align Cameras		v		**6m 19s**
Depth Maps (Medium, Moderate)	v	v		**6m 8s**
Dense Cloud		v	90,728,857	**18m 17s**
Build Tiled (from Depth Maps, Medium/High)	v	v		**56m 31s**
DEM (from Dense cloud)		v	3.47 mm/pix	**2m 29s**
Orthomosaic (from DEM)		v	1.73 mm/pix	**4m 8s**
Price ($/h)				**$11.36**
Total time (h)				**1.73**
Total time (h,m)				**1h 44m**
Total price				**$19.60**
Depth Maps (Low, Moderate)	v	v		4m 36s
Dense Cloud		v	21,101,114	4m 57s
Depth Maps (Medium, Moderate)	v	v		6m 8s
Dense Cloud		v	90,728,857	18m 17s
Build Mesh (from Depth Maps, Medium/High)	v	v		8m 3s
Build Tiled (from Depth Maps, Medium/High)	v	v		56m 31s
Depth Maps (High, Moderate)	v	v		12m 51s
Dense Cloud		v	386,166,196	47m 47s
Build Mesh (from Depth Maps, High/High)	v	v		34m 56s
Build Tiled (from Depth Maps, High/High)	v	v		1h 48m

5. Metashape 1.8.3: **37,344** of **PhaseOne** and **Hasselblad** 100MP images on different cluster configurations.

Storage of 45TB was used for processing of all three blocks simultaneously.

Block	1	2	3	Total
Images	15,550	9,510	12,284	37,344
GSD (cm)	6	8	6	
Match Photos (Highest, h)	38	14	34	
Align Cameras (h)	6	3	2	
Depth Maps (Low, Aggressive, h)	62	20	38	
Dense Cloud (h)	2	2	4	
Ground classification (h)	1	1	3	
Orthomosaic (h)	165	50	117	
Total computer time (h)	273	91	197	
Computers in a cluster	5	5	5	
Total working time (h)	55	18	39	112

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6. Metashape 1.8.3: **1,389** images of **PhaseOne PAS280** 280MP images with New NVIDIA GPU A10G computers.

1. Images – 1,389; Image size – 280MP; File size (Tiff) – 880 MB;
2. Side/Forward overlap - 70%; Flight altitude – 1140m; GSD – 4.7 cm; Area - 189 sq.km;

			Metashape 192GB 4xA10G Ephemeral disk D - 3.9 TB				Metashape 256GB 1xA10G Ephemeral disk D - 1.9 TB			
	GPU	CPU	App used	Unit Price $/hour	Processing Time (h)	Total price App+Storage ($)	App used	Unit Price $/hour	Processing Time (h)	Total price App+Storage ($)
Upload (IIQ, Left & Right images)		v	Storage X: 3TB Fast	$4.47	4.28	$19.15	Storage X: 3TB Fast	$4.47	4.28	$19.15
Transform IIQ to TIFF Combined	v	v	PhaseOne iX Capture 2*Radeon V520	$5.49	4.05	$40.35	PhaseOne iX Capture 2*Radeon V520	$5.49	4.05	$40.35
Copy TIFF images of 1.2 TB from Storage X to local disk D		v	Metashape 192GB 4*A10G Linux	$13.91	1.00	$18.39	Metashape 256GB 1*A10G Linux	$11.99	1.00	$16.46
Match Photos (5cm, High)	v	v	Metashape 192GB 4*A10G Linux	$13.91	0.31	$5.70	Metashape 256GB 1*A10G Linux	$11.99	0.62	$10.21
Align Cameras (5cm, High)		v	Metashape 192GB 4*A10G Linux	$13.91	0.06	$1.10	Metashape 256GB 1*A10G Linux	$11.99	0.05	$0.82
Depth Maps (37cm, Low/Agressive)	v	v	Metashape 192GB 4*A10G Linux	$13.91	0.62	$11.40	Metashape 256GB 1*A10G Linux	$11.99	1.18	$19.42
Dense Cloud (37cm,Low/Agressive) with "Point color calculation"		v	Metashape 192GB 4*A10G Linux	$13.91	1.33	$24.45	Metashape 256GB 1*A10G Linux	$11.99	1.32	$21.73
Classify ground points (Total points - 1,446,807,306)		v	Metashape 192GB 4*A10G Linux	$13.91	0.89	$16.36	Metashape 256GB 1*A10G Linux	$11.99	0.88	$14.48
DEM (from Dense Cloud, 37 cm)		v	Metashape 192GB 4*A10G Linux	$13.91	0.24	$4.41	Metashape 256GB 1*A10G Linux	$11.99	0.23	$3.79
Color adjustment		v	Metashape 192GB 4*A10G Linux	$13.91	0.42	$7.72	Metashape 256GB 1*A10G Linux	$11.99	0.48	$7.90
Orthomosaic (DEM) with "Refine seamlines"		v	Metashape 192GB 4*A10G Linux	$13.91	5.87	$107.93	Metashape 256GB 1*A10G Linux	$11.99	5.70	$93.82
Export orthophoto tiles		v	Metashape 192GB 4*A10G Linux (**to D:**)	$13.91	0.84	$15.45	Metashape 256GB 1*A10G Linux (**to X:**)	$11.99	0.84	$13.83
Total					**19.91**	**$272.42**			**20.63**	**$261.96**

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7. Metashape 1.8.3: **100** drone 16MP (4864x3648) images for orthophoto and 3D modeling.

1. File size (JPG) – 7.5 MB;
2. Side/Forward overlap - 70%; Flight altitude – 320m; GSD – 8 cm; Area - 1.35 sq.km;

			18-05-22	22-05-22	18-05-22	21-05-22
	GPU	**CPU**	**Metashape 16GB**	**Metashape 16GB**	**Metashape 192GB**	**Metashape 192GB**
OS			**Windows 2019**	**Linux**	**Windows 2019**	**Linux**
Storage			**Storage X standard**	**Storage X standard**	**Storage X standard**	**Storage X standard**
GPU			**1 x TESLA T4**	**1 x TESLA T4**	**4 x TESLA T4**	**4 x TESLA T4**
Processor type			**Intel ® Xeon ® Platinum 8259CL**	**Intel ® Xeon ® Platinum 8259CL**	**Intel ® Xeon ® Cascade Lake 24C**	**Intel ® Xeon ® Cascade Lake 24C**
Processor configuration			1 socket 2 CPU 2.50GHz 4vCPU	1 socket 2 CPU 2.50GHz 4vCPU	1 socket 24 CPU@2.50GHz 48 vCPU	1 socket 24 CPU@2.50GHz 48 vCPU
RAM			16	16	192	192
Match Photos (High)	v	v	1m 49s	1m 27s	43s	35s
Align Cameras		v	1m 11s	1m 12s	18s	12s
Depth Maps (High, Aggressive)	v	v	12m 5s	9m 11s	3m 9s	2m 7s
Dense Cloud		v	24m 52s	20m 4s	6m 18s	3m 38s
DEM (from Dense cloud)		v	1m 20s	1m 10s	45s	36s
Orthomosaic (from DEM)		v	6m 27s	5m 17s	2m 51s	2m 8s
Price ($/h)			**$2.829**	**$2.798**	**$11.648**	**$11.356**
Total time (h)			**0.80**	**0.64**	**0.23**	**0.15**
Total time (h,m)			**48m**	**38m**	**14m**	**9m**
Total price			**$2.26**	**$1.79**	**$2.68**	**$1.70**
Build Tiled (from Depth Maps, High/High)	v	v	51m 35s	51m 7s	19m 19s	15m 38s
Build Mesh (from Depth Maps, High/High)	v	v	18m 22s	14m 34s	7m 14s	4m 41s

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			20-05-22	20-05-22	22-05-22	19-05-22	22-05-22
	GPU	CPU	Metashape 122GB	Metashape 244GB	Metashape 244GB	Metashape 488GB	Metashape 488GB
OS			**Windows 2019**	**Windows 2019**	**Linux**	**Windows 2019**	**Linux**
Storage			**Storage X standard**	**Storage X standard**	**Storage X standard**	**Storage X standard**	**Storage X standard**
GPU			**1 x TESLA M60**	**2 x TESLA M60**	**2 x TESLA M60**	**4 x TESLA M60**	**4 x TESLA M60**
Processor type			**Intel ® Xeon ® E5-2686 v4**	**Intel ® Xeon ® E5-2686 v4**	**Intel ® Xeon ® E5-2686 v4**	**Intel ® Xeon ® E5-2686 v4**	**Intel ® Xeon ® E5-2686 v4**
vCPU			1 socket 8 CPU 2.30GHz 16vCPU	1 socket 16 CPU@2.30GHz 32 vCPU	1 socket 16 CPU@2.30GHz 32 vCPU	2 socket 32 CPU@2.30GHz 64 vCPU	2 socket 32 CPU@2.30GHz 64 vCPU
RAM			122	244	244	488	488
Match Photos (High)	v	v	1m 48s	1m 12s	55s	57s	1m 21s
Align Cameras		v	30s	24s	16s	23s	16s
Depth Maps (High, Aggressive)	v	v	11m 58s	6m 31s	5m 49s	4m 28s	3m 30s
Dense Cloud		v	10m 5s	7m 58s	4m 56s	9m 9s	4m 44s
DEM (from Dense cloud)		v	57s	53s	43s	53s	42s
Orthomosaic (from DEM)		v	4m 1s	3m 40s	2m 39s	3m 35s	2m 38s
Price ($/h)			**$4.697**	**$6.988**	**$6.794**	**$11.569**	**$11.478**
Total time (h)			**0.49**	**0.34**	**0.26**	**0.32**	**0.22**
Total time (h,m)			**29m**	**20m**	**16m**	**19m**	**13m**
Total price			**$2.30**	**$2.38**	**$1.77**	**$3.70**	**$2.53**
Build Tiled (from Depth Maps, High/High)	v	v	32m 31s	27m 37s	19m 40s	33m 44s	19m 52s
Build Mesh (from Depth Maps, High/High)	v	v	10m 37s	8m 25s	5m 49s	8m 11s	6m 14s

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			21-05-22	20-05-22	21-05-22
	GPU	**CPU**	**Metashape 64GB**	**Metashape 128GB**	**Metashape 256GB**
OS			**Windows 2019**	**Windows 2019**	**Windows 2019**
Storage			**Storage X STANDARD**	**Storage X STANDARD**	**Storage X STANDARD**
GPU			**1 x RADEON V520**	**2 x RADEON V520**	**4 x RADEON V520**
Processor type			**AMD EPYC 7R32**	**AMD EPYC 7R32**	**AMD EPYC 7R32**
Processor configuration			1 socket 8 CPU@2.80GHz 16vCPU	1 socket 16 CPU@2.80GHz 32vCPU	1 socket 32 CPU@2.80GHz 64vCPU
RAM			64	128	256
Match Photos (High)	v	v	1m 20s	1m 7s	41s
Align Cameras		v	20s	15s	13s
Depth Maps (High, Aggressive)	v	v	8m 17s	5m 7s	3m 15s
Dense Cloud		v	7m 14s	5m 26s	5m 27s
DEM (from Dense cloud)		v	43s	39s	36s
Orthomosaic (from DEM)		v	2m 55s	2m 34s	2m 28s
Price ($/h)			**$4.384**	**$6.892**	**$11.908**
Total time (h)			**0.35**	**0.25**	**0.21**
Total time (h,m)			**21m**	**15m**	**13m**
Total price			**$1.53**	**$1.72**	**$2.50**
Build Tiled (from Depth Maps, High/High)	v	v	20m 29s	17m 16s	18m 32s
Build Mesh (from Depth Maps, High/High)	v	v	7m 18s	6m 6s	5m 58s

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8. Metashape 1.7.5: **828** images of **Phase One iXM-RS100F** (40mm).

1. Image size – 100 MP (11608 x 8708); File size (Jpeg) – 90 MB
2. Images – 828; Side/Forward overlap - 70%; Flight altitude – 433m; GSD – 4.4 cm; Area - 23.4 sq. km

				30-12-21	30-12-21	30-12-21	30-12-21
	GPU	**CPU**	**Config**	**Metashape 192GB**	**Metashape 192GB**	**Metashape 192GB**	**Metashape 192GB**
OS				**Linux**	**Linux**	**Linux**	**Linux**
Storage				**Storage X 1000 GB Enhanced**	**Storage D-D Ephemeral 900 GB Enhanced**	**Storage X 1000 GB Enhanced**	**Storage X 1000 GB Enhanced**
GPU				**4 x TESLA T4**	**4 x TESLA T4**	**4 x TESLA T4**	**4 x TESLA T4**
Processor type				**Intel ® Xeon ® Cascade Lake 24C**	**Intel ® Xeon ® Cascade Lake 24C**	**Intel ® Xeon ® Cascade Lake 24C**	**Intel ® Xeon ® Cascade Lake 24C**
vCPU				1 socket 24 CPU @ 2.5GHz 48 vCPU	1 socket 24 CPU @ 2.5GHz 48 vCPU	1 socket 24 CPU @ 2.5GHz 48 vCPU	1 socket 24 CPU @ 2.5GHz 48 vCPU
RAM				192	192	192	192
Computers				**1**	**1**	**3**	**5**
Images				**828**	**828**	**828**	**828**
Match Photos (High)	v	v	Cluster	9m 22s	13m 53s	10m 33s	8m 44s
Align Cameras (High)		v	Cluster	2m 51s	2m 54s	1m 44s	1m 25s
Depth Maps (Medium/Agressive)	v	v	Cluster	37m 44s	37m 3s	17m 19s	15m 1s
Dense Cloud (Medium/Agressive) without "Point color calculation"		v	Cluster	45m 13s	42m 1s	18m 2s	11m 34s
DEM (from Dense Cloud)		v	Cluster	11m 18s	6m 15s	4m 21s	2m 42s
Orthomosaic (DEM) NO "Refine seamlines"		v	Cluster	1h 20m	1h 27m	40m 43s	24m 14s
Time (h)				**3.11**	**3.15**	**1.55**	**1.06**
Price ($/h/computer)				**$11.356**	**$11.356**	**$11.356**	**$11.356**
Total price				**$35.32**	**$35.77**	**$52.81**	**$60.19**
Optimiaztion parametrs		v	Single	4s	4s	4s	4s
Ground classification		v	Single	25m	25m	25m	25m
Export orthophoto tiles		v	Single	35m	35m	35m	35m

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9. Metashape 1.7.5: **100** drone 16MP images with AMD RADEON V520 GPU and CPU@3.8GHz based (no GPU) computers.

1. Drone area survey: FC6310; Images – 100;
2. File size (JPG) – 7.5 MB; Side/Forward overlap - 70%; Flight altitude – 300m; GSD – 8 cm; Area - 1.35 sq. km

			19-12-21	19-12-21	19-12-21	19-12-21	20-12-21	24-12-21
	GPU	**CPU**	**Metashape 16GB**	**Metashape 64GB**	**Metashape 128GB**	**Metashape 256GB**	**Metashape 192GB**	**Metashape 512GB**
OS			**Windows 2019**	**Windows 2019**	**Windows 2019**	**Windows 2019**	**Linux**	**Linux**
Storage			**Storage X STANDARD**	**Storage X STANDARD**	**Storage X STANDARD**	**Storage X STANDARD**	**Storage X STANDARD**	**Storage X STANDARD**
GPU			**1 x RADEON V520**	**1 x RADEON V520**	**2 x RADEON V520**	**4 x RADEON V520**	**No GPU**	**No GPU**
Processor type			**AMD EPYC 7R32**	**AMD EPYC 7R32**	**AMD EPYC 7R32**	**AMD EPYC 7R32**	**Intel Xeon Scalable Cascade Lake**	**Intel Xeon Platinum 8259CL**
Processor configuration			1 socket 4vCPU@2.8GHz	1 socket 16vCPU@2.8GHz	1 socket 32vCPU@2.8GHz	1 socket 64vCPU@2.8GHz	1 socket 48vCPU@3.8GHz	1 socket 64vCPU@2.5GHz
RAM			16	64	128	256	**192**	**512**
Match Photos (Highest)	v	v	2m 1s	2m 6s	1m 20s	1m 3s	2m 21s	2m 42s
Align Cameras		v	44s	17s	14s	10s	10s	13s
Depth Maps (Ultra High, Aggressive)	v	v	36m 59s	28m 41s	15m 12s	9m 4s	**4h 10m**	**4h 17m**
Dense Cloud		v	1h 32m	31m 37s	23m 5s	20m 33s	16m 51s	19m 44s
DEM (from Dense cloud)		v	3m 38s	2m 18s	2m 2s	2m 0s	1m 29s	1m 52s
Orthomosaic (from DEM)		v	8m 1s	4m 8s	3m 40s	3m 42s	3m 25s	4m 18s
Price ($/h)			**$2.814**	**$4.770**	**$7.085**	**$11.715**	**$11.828**	**$11.819**
Total time (h)			**2.39**	**1.15**	**0.76**	**0.61**		
Total time (h,m)			**2h 23m**	**1h 9m**	**46m**	**36m**		
Total price			**$6.73**	**$5.49**	**$5.38**	**$7.15**	**$0.00**	**$0.00**
Tiled model (from Dense cloud, Ultra High/High)	v	v				4h 59m		
Tiled model (from Depth Maps, Ultra High/High)	v	v				2h 38m		

Comments:

CPU based images recommended to use for the steps that are nor requiring GPU processing. It is also good for use in a cluster configuration for the step of orthophoto processing for very large projects with very large image size while a lot of RAM is required for processing.

10. Metashape 1.7.5: **15,130** images of UAV Batmap II + Sony a6000 24MP camera on a single and cluster configuration.
    1. GSD – 4.2 cm; Forward/Side overlap - 80%/80%; Area – 40.6 sq.km;
    2. Frame size – 24MP (6000 x 4000), Image file type – JPEG, Image file size – 20 Mb

	GPU	CPU	Metashape 192GB	Metashape 192GB	Metashape 256GB
OS			**Windows 2019**	**Linux**	**Windows 2019**
Storage			**Storage X 1000 GB Standard**	**Storage X 2000 GB Enhanced**	**Storage X 2000 GB Enhanced**
GPU			**4 x TESLA T4**	**4 x TESLA T4**	**4 x Radeon V520**
Processor type			**Intel ® Xeon ® Cascade Lake 24C**	**Intel ® Xeon ® Cascade Lake 24C**	**Intel ® Xeon ® Cascade Lake 24C**
vCPU			1 socket 24 CPU @ 2.5GHz 48 vCPU	1 socket 24 CPU @ 2.5GHz 48 vCPU	2 socket 32 CPU @ 2.8GHz 64 vCPU
RAM			192	192	256
Computers			**1**	**1**	**5**
Images			**15,130**	**15,130**	**15,130**
Match Photos (High)	v		9h 53m	7h 33m	2h 36m
Align Cameras (High)		v	1h 51m	1h 29m	54m
Optimiaztion parametrs		v	3 m	3m	3m
Depth Maps (Medium/Agressive)	v		4h 36m	2h 46m	2h 14m
Dense Cloud (Medium/Agressive) without "Point color calculation"		v	11h 25m	4h 23m	1h 26m
DEM (from Dense Cloud)		v	44m	31m	21m
Orthomosaic (DEM) NO "Refine seamlines"		v	5h 14m	3h 28m	1h 19m
Time (h)			**33.77**	**20.22**	**8.88**
Price ($/h/computer)			**$11.648**	**$11.356**	**$11.908**
Total price			**$393.35**	**$229.62**	**$528.72**

11. Metashape 1.7.3: **10,338** images of DJI M300rtk and ZenmuseP1 (35mm) on a single and cluster configuration.

Corridor mapping length – 30 km; Number of images – 10,348
Frame size – 45MP (8192 x 5460); Image file type – JPEG; Image file size – 20 Mb
Forward/Side overlap - 75%/75%; GSD – 1.65 cm.

	GPU	CPU	Metashape 192GB	Metashape 192GB	Metashape 192GB	Metashape 192GB
OS			**Windows 2019**	**Linux**	**Windows 2019**	**Linux**
Storage			**Storage EBS 2000 GB Enhanced**	**Storage EBS 2000 GB Enhanced**	**Storage EBS 2000 GB Enhanced**	**Storage EBS 2000 GB Enhanced**
GPU			**4 x TESLA T4**	**4 x TESLA T4**	**4 x TESLA T4**	**4 x TESLA T4**
Processor type			**Intel ® Xeon ® Cascade Lake 24C**	**Intel ® Xeon ® Cascade Lake 24C**	**Intel ® Xeon ® Cascade Lake 24C**	**Intel ® Xeon ® Cascade Lake 24C**
vCPU			1 socket 24 CPU @ 2.5GHz 48 vCPU	1 socket 24 CPU @ 2.5GHz 48 vCPU	1 socket 24 CPU @ 2.5GHz 48 vCPU	1 socket 24 CPU @ 2.5GHz 48 vCPU
RAM			192	192	192	192
Computers			**1**	**1**	**5**	**5**
Images			**10,348**	**10,348**	**10,348**	**10,348**
Match Photos (High)	v		4h 23m	3h 46m	1h 32m	1h 20m
Align Cameras (High)		v	51m	39m	34m	19m
Depth Maps (Medium/Agressive)	v		5h 36m	3h 24m	2h 1m	2h 11m
Dense Cloud (Medium/Agressive) without "Point color calculation"		v	12h 6m	4h 33m	2h 41m	1h 9m
DEM (from Dense Cloud)		v	2h 22m	1h 10m	32m	16m
Orthomosaic (DEM) NO "Refine seamlines"		v	11h 59m	5h 58m	4h 46m	2h 10m
Time (h)			**37.28**	**19.50**	**12.10**	**7.42**
Price ($/h/computer)			**$11.648**	**$11.356**	**$11.648**	**$11.356**
Total price			**$434.24**	**$221.44**	**$704.70**	**$421.31**

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12. Metashape 1.7.3: **1,000/3,450/4,500** of **PhaseOne iXM-RS150F** 150MP (RGB+NIR) on a single and cluster configuration.

Blocks of images – 1,000 / 3,450 / 4,500;
Image type – PhaseOne 150MP 4-band RGB+NIR;
Image file size – 600 MB;
Forward/Side overlap - 80%/50%;
GSD – 4.6 cm.

		Single computer				Cluster of computers (on-demand)						
OS		**Win 2019**	**Linux**	**Win 2019**	**Win 2019**	**Linux**						
Application		**Metashape 192GB**		**Metashape 256GB**		**Metashape 192GB**						
Number of computers in a cluster		**1**	**1**	**1**	**1**	**5**	**10**	**10**	**6**	**5**	**4**	**2**
Storage (TB)		**2**	**2**	**10**	**2 x 1.2**	**Not limited**	**Not limited**	**Not limited**	**Not limited**	**Not limited**	**Not limited**	**Not limited**
Images		**1,023**	**1,023**	**1,000**	**1,000**	**1,000**	**4,500**	**3,450**	**3,450**	**3,450**	**3,450**	**3,450**
Match Photos	4.6 cm/pix	55m 45s	56m 41s	1h 12m	58m 38s	14m 12s	26m 18s	34m 19s	31m 28s	37m 33s	47m 18s	57m 55s
Align Cameras	4.6 cm/pix	5m 27s	5m 5s	3m 33s	3m 21s	1m 17s	7m 37s	5m 44s	7m 8s	7m 5s	8m 18s	10m 47s
Depth Maps	74 cm/pix	2h 22m	1h 43m	2h 7m	25m 50s	27m 0s	44m 40s	1h 15m	1h 33m	1h 48m	2h 17m	4h 2m
Dense Cloud	74 cm/pix	10m 45s	4m 56s	9m 15s	9m 6s	1m 27s	3m 37s	3m 6s	4m 38s	5m 20s	6m 29s	11m 39s
Classify ground points	15/0.25/100	2m 24s	1m 32s	3m 9s	3m 15s	2m 45s	12m 59s	9m 35s	9m 55s	10m 22s	10m 35s	7m 16s
DEM (from Dense Cloud)	74 cm/pix	1m 21s	58s	1m 25s	1m 22s	41s	1m 2s	1m 3s	1m 34s	1m 38s	2m 31s	3m 20s
Color adjustment		25m 0s	25m 0s	25m 0s	18m 25s	25m 16s	1h 57m	1h 31m	1h 28m	1h 30m	1h 30m	1h 30m
Orthomosaic (DEM)	4.6 cm/pix	5h 5m	4h 3m	4h 50m	3h 23m	1h 22m	2h 13m	2h 36m	2h 37m	2h 50m	3h 32m	6h 26m
Procissing price ($/h)		**$11.648**	**$11.356**	**$11.908**	**$11.908**	**$11.356**	**$11.356**	**$11.356**	**$11.356**	**$11.356**	**$11.356**	**$11.356**
Fast storage price ($/h)		**$4.040**	**$4.040**	**$6.140**	**$4.040**	**$6.140**	**$6.140**	**$6.140**	**$6.140**	**$6.140**	**$6.140**	**$6.140**
Total time (h)		**10.38**	**8.59**	**10.11**	**8.83**	**3.83**	**5.77**	**6.26**	**6.55**	**7.17**	**8.57**	**13.48**
Total price		**$162.84**	**$132.25**	**$182.47**	**$140.82**	**$240.98**	**$690.67**	**$749.32**	**$486.51**	**$451.14**	**$441.90**	**$388.92**
Price per 100 image		**$15.92**	**$12.93**	**$18.25**	**$14.08**	**$24.10**	**$15.35**	**$21.72**	**$14.10**	**$13.08**	**$12.81**	**$11.27**
Processing speed (image/h)		**99**	**119**	**99**	**113**	**261**	**780**	**551**	**527**	**481**	**403**	**256**

13. Metashape 1.7.3: **100** drone 16MP (4864x3648) images with the new GPU instances AMD RADEON PRO V520.

File size (JPG) – 7.5 MB; Side/Forward overlap - 70%; Flight altitude – 320m; GSD – 8 cm; Area - 1.35 sq. km

			30-06-21	30-06-21	30-06-21
	GPU	**CPU**	**Metashape 64GB**	**Metashape 128GB**	**Metashape 256GB**
OS			**Windows 2019**	**Windows 2019**	**Windows 2019**
Storage			**Storage X STANDARD**	**Storage X STANDARD**	**Storage X STANDARD**
GPU			**1 x RADEON V520**	**2 x RADEON V520**	**4 x RADEON V520**
Processor type			**AMD EPYC 7R32**	**AMD EPYC 7R32**	**AMD EPYC 7R32**
Processor configuration			1 socket 8 CPU@2.80GHz 16vCPU	1 socket 16 CPU@2.80GHz 32vCPU	1 socket 32 CPU@2.80GHz 64vCPU
RAM			64	128	256
Match Photos (Highest)	v		2m 2s	1m 20s	1m 1s
Align Cameras		v	27s	21s	19s
Depth Maps (Ultra High, Aggressive)	v		24m 18s	12m 43s	7m 18s
Dense Cloud		v	28m 5s	20m 5s	17m 59s
DEM (from Dense cloud)		v	2m 15s	2m 0s	1m 55s
Orthomosaic (from DEM)		v	3m 53s	3m 34s	3m 26s
Price ($/h)			**$4.384**	**$6.892**	**$11.908**
Total time (h)			**1.02**	**0.67**	**0.53**
Total time (h,m)			**1h 1m**	**40m**	**32m**
Total price			**$4.47**	**$4.62**	**$6.31**

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14. Metashape 1.7.2: **1,023** images of **PhaseOne iXM-RS150F** 150MP RGB+NIR.

Strips – 15; Number of images – 1,023
Forward overlap - 80%; Side overlap – 50%; Flight altitude – 890 m; GSD – 4.6 cm; Area – 36.4 sq.km.
Orthophoto RGB+NIR (4-band) GSD = 4.6 cm
Image size – 150 MP (14204 x 10652)
Image type – RGB+NIR (4-band)
Image file volume (TIFF) – 600 MB
Total image files volume – 576 GB
Metashape project volume – 693 GB
Exported orthophoto volume – 78 GB

OS				**Win 2019**	**Linux**	**Linux**
Metashape 1.7.2				**Metashape 192 GB**	**Metashape 192 GB**	**Metashape 192 GB**
Storage				**FAST Storage X**	**FAST Storage X**	**Local D**
Storage volume (GB)				**2000**	**2000**	**900**
	GPU	**CPU**	**Parameters**			
Copy of images from Storage X to local disk D						40m
Generating masks		v		1m 20s	1m 20s	1m 20s
Match Photos	v		4.6 cm/pix	55m 45s	56m 41s	14m 46s
Align Cameras		v	4.6 cm/pix	5m 27s	5m 5s	6m 50s
Depth Maps	v		74 cm/pix	2h 22m	1h 43m	22m 35s
Dense Cloud		v	74 cm/pix	10m 45s	4m 56s	4m 20s
Classify ground points		v	15/0.25/100	2m 24s	1m 32s	1m 33s
DEM (from Dense Cloud)		v	74 cm/pix	1m 21s	58s	59s
Color adjustment		v		12m 0s	12m 0s	11m 58s
Orthomosaic (DEM)		v	4.6 cm/pix	5h 5m	4h 3m	3h 28m
Orthomosaic Export (TIFF)		v	56 tiles of size 1000 m x 1000 m	1h 16m	1h 6m	1h 7m
Procissing price ($/h)				**$11.648**	**$11.356**	**$11.356**
Fast storage price ($/h)				**$3.420**	**$3.420**	**$3.420**
Total time (h)				**10.00**	**8.24**	**7.32**
Total time (h,m)				**10h 0m**	**8h 14m**	**7h 19m**
Total price				**$150.68**	**$121.75**	**$108.16**

15. Metashape 1.7.2: New storage check with Metashape 192GB configuration.

The two older types of storage, Normal and Enhanced, have been discontinued.
Three new types of storage have been implemented: Standard, Enhanced and Fast.

Storage type is related to both data transfer (upload/download) and overall processing speed.
Data transfer speed, though, is also limited by your internet speed. If it's less than 30Mbps, Enhanced or Fast types won't give you any benefit in this regard.

Processing speed depends on the software itself, computer and network configuration, and the size of individual files. After thorough testing with Metashape 192GB and with different data sets the following recommendations can be made:

Individual file size	**Storage type**
Less than 100MB	Standard
Between 100 and 200MB	Enhanced
More than 200MB	Fast

The following image data sets were used in the testing:

Image size (MP)	**17**	**17**	**42**	**150**	**280**
File size (MB)	**7**	**7**	**18**	**432**	**813**
Number of images	**100**	**500**	**930**	**100**	**108**
Image file format	JPEG	JPEG	JPEG	TIFF	TIFF

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OS				Win 2019	Linux	Win 2019	Linux	Win 2019	Linux	Win 2019	Linux
Storage				STANDARD	STANDARD	STANDARD	STANDARD	ENHANCED	ENHANCED	ENHANCED	ENHANCED
Image size (MP)				17	17	42	42	17	17	17	17
File size (MB)				7	7	18	18	7	7	7	7
Number of images				100	100	930	930	100	100	500	500
Image file format				JPEG	JPEG	JPEG	JPEG	JPEG	JPEG	JPEG	JPEG
Match Photos	v		High	32s	43s	10m 17s	9m 52s	34s	31s	4m 19s	4m 21s
Align Cameras		v	High	22s	16s	4m 43s	3m 14s	22s	16s	2m 23s	1m 43s
Depth Maps	v		Low	20s	18s	10m 40s	9m 34s	25s	18s	2m 58s	2m 33s
Dense Cloud		v	Low	26s	12s	10m 26s	4m 44s	9s	12s	2m 51s	1m 14s
Classify ground points	v	v		15s	6s	8m 0s	4m 15s	10s	7s	42s	24s
DEM (from Dense Cloud)		v		4s	3s	1m 12s	55s	4s	3s	20s	16s
Orthomosaic (DEM)		v	High	2m 8s	1m 31s	41m 7s	31m 38s	2m 5s	1m 32s	10m 0s	7m 25s
Price ($/h)				$11.648	$11.356	$11.648	$11.356	$11.648	$11.356	$11.648	$11.356
Total time (h)				0.07	0.05	1.44	1.07	0.06	0.05	0.39	0.30
Total time (h,m)				4m	3m	1h 26m	1h 4m	4m	3m	23m	18m
Total price				$0.82	$0.57	$16.77	$12.15	$0.70	$0.57	$4.54	$3.41

OS				Win 2019	Linux	Win 2019	Linux	Win 2019	Linux	Win 2019	Linux
Storage				ENHANCED	ENHANCED	ENHANCED	ENHANCED	FAST	FAST	FAST	FAST
Image size (MP)				42	42	150	150	150	150	280	280
File size (MB)				18	18	432	432	432	432	813	813
Number of images				930	930	100	100	100	100	108	108
Image file format				JPEG	JPEG	TIFF	TIFF	TIFF	TIFF	TIFF	TIFF
Match Photos	v		High	9m 58s	10m 24s	4m 49s	4m 13s	5m 36s	3m 5s	6m 34s	6m 40s
Align Cameras		v	High	4m 38s	3m 14s	22s	20s	22s	22s	19s	22s
Depth Maps	v		Low	10m 48s	9m 43s	6m 10s	5m 29s	6m 28s	2m 5s	9m 52s	10m 9s
Dense Cloud		v	Low	10m 27s	4m 36s	3m 30s	1m 52s	3m 33s	1m 51s	7m 13s	4m 31s
Classify ground points	v	v		8m 3s	4m 54s	1m 43s	1m 0s	1m 38s	1m 2s	1m 49s	1m 14s
DEM (from Dense Cloud)		v		1m 12s	59s	20s	15s	20s	15s	30s	22s
Orthomosaic (DEM)		v	High	41m 21s	32m 9s	14m 52s	12m 22s	12m 10s	9m 32s	29m 9s	23m 17s
Price ($/h)				$11.648	$11.356	$11.648	$11.356	$11.648	$11.356	$11.648	$11.356
Total time (h)				1.44	1.10	0.53	0.43	0.50	0.30	0.92	0.78
Total time (h,m)				1h 26m	1h 6m	32m	26m	30m	18m	55m	47m
Total price				$16.77	$12.49	$6.17	$4.88	$5.82	$3.41	$10.72	$8.86

16. Metashape 1.7.1: **495** drone 16MP (4864x3648) images for corridor survey.

File size (JPG) – 7.5 MB; Flight altitude – 61m; GSD – 1.6 cm; Corridor mapping – 2-4 flight lines. Area - 0.56 sq.km;

			01-03-21
	GPU	**CPU**	**Metashape 192GB**
OS			**Windows 2019**
Storage			**Storage X enhanced**
GPU			**4 x TESLA T4**
Processor type			**Intel ® Xeon ® Cascade Lake 24C**
vCPU			1 socket 24 CPU @ 2.50GHz 48 vCPU
RAM			192
Match Photos (High)	v		1m 28s
Align Cameras (High)		v	2m 52s
Depth Maps (High/Aggresive)	v		7m 6s
Dense Cloud (High/Aggresive) without "Point color calculation"		v	50m 37s
DEM (from Dense Cloud)		v	7m 50s
Orthomosaic (DEM) NO "Refine seamlines"		v	24m 58s
Price ($/h)			**$11.648**
Total time (h)			**1.58**
Total time (h,m)			**1h 35m**
Total price			**$18.40**

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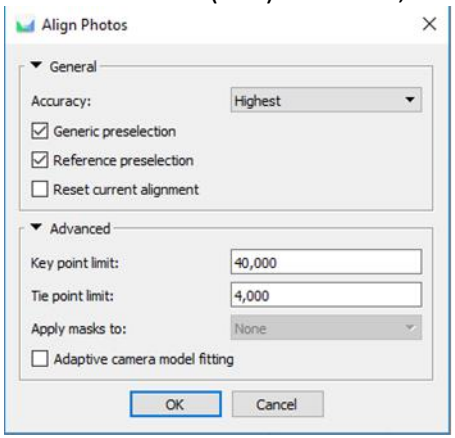
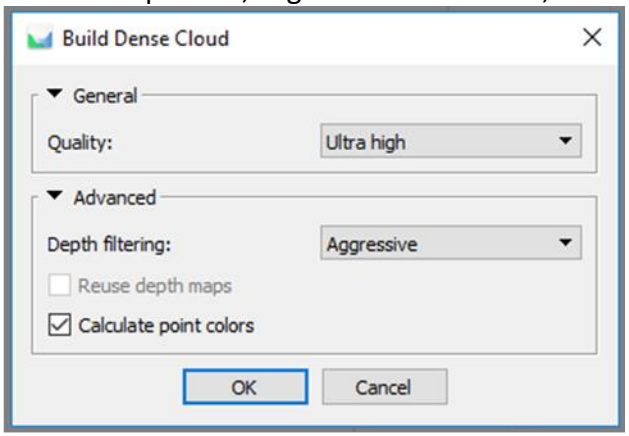
17. Metashape 1.6.5: Parallel processing of 10 blocks on the same Storage with 10 x Metashape 192GB computers.

Drone survey: FC6310 (8.8mm); Image size – 16 MP (4864 x 3648); Images - 100
File size (JPG) – 7.5 MB; Side/Forward overlap - 70%; Flight altitude – 320m; GSD – 8 cm; Area - 1.35 sq.km;





			Single project	10 parallel running projects on the same storage										
			1	1	2	3	4	5	6	7	8	9	10
	GPU	CPU	Metashape 192GB	Metashape 192GB	Metashape 192GB	Metashape 192GB	Metashape 192GB	Metashape 192GB	Metashape 192GB	Metashape 192GB	Metashape 192GB	Metashape 192GB	Metashape 192GB
OS			Windows 2019	Windows 2019	Windows 2019	Windows 2019	Windows 2019	Windows 2019	Windows 2019	Windows 2019	Windows 2019	Windows 2019	Windows 2019
Storage			Storage 750GB enhanced	Storage 750GB enhanced	Storage 750GB enhanced	Storage 750GB enhanced	Storage 750GB enhanced	Storage 750GB enhanced	Storage 750GB enhanced	Storage 750GB enhanced	Storage 750GB enhanced	Storage 750GB enhanced	Storage 750GB enhanced
GPU			4 x TESLA T4	4 x TESLA T4	4 x TESLA T4	4 x TESLA T4	4 x TESLA T4	4 x TESLA T4	4 x TESLA T4	4 x TESLA T4	4 x TESLA T4	4 x TESLA T4	4 x TESLA T4
Processor type			Intel ® Xeon ® Cascade Lake 24C	Intel ® Xeon ® Cascade Lake 24C	Intel ® Xeon ® Cascade Lake 24C	Intel ® Xeon ® Cascade Lake 24C	Intel ® Xeon ® Cascade Lake 24C	Intel ® Xeon ® Cascade Lake 24C	Intel ® Xeon ® Cascade Lake 24C	Intel ® Xeon ® Cascade Lake 24C	Intel ® Xeon ® Cascade Lake 24C	Intel ® Xeon ® Cascade Lake 24C	Intel ® Xeon ® Cascade Lake 24C
vCPU			1 socket 24 CPU@2.50GHz 48 vCPU	1 socket 24 CPU@2.50GHz 48 vCPU	1 socket 24 CPU@2.50GHz 48 vCPU	1 socket 24 CPU@2.50GHz 48 vCPU	1 socket 24 CPU@2.50GHz 48 vCPU	1 socket 24 CPU@2.50GHz 48 vCPU	1 socket 24 CPU@2.50GHz 48 vCPU	1 socket 24 CPU@2.50GHz 48 vCPU	1 socket 24 CPU@2.50GHz 48 vCPU	1 socket 24 CPU@2.50GHz 48 vCPU	1 socket 24 CPU@2.50GHz 48 vCPU
RAM			192	192	192	192	192	192	192	192	192	192	192
Match Photos (Highest)	v		1m 1s	36s	38s	37s	37s	40s	33s	37s	36s	36s	42s
Align Cameras (Highest)		v	26s	26s	25s	25s	25s	25s	26s	25s	25s	25s	26s
Depth Maps (Ultra High)	v		9m 23s	8m 50s	8m 44s	8m 52s	9m 24s	9m 10s	8m 47s	8m 51s	9m 7s	9m 5s	8m 43s
Dense Cloud (Ultra High)		v	26m 56s	30m 22s	30m 19s	30m 36s	30m 22s	29m 55s	29m 20s	30m 4s	29m 16s	28m 9s	27m 16s
DEM		v	2m 27s	3m 8s	3m 17s	3m 18s	3m 20s	3m 59s	2m 37s	4m 27s	4m 58s	5m 45s	6m 19s
Orthomosaic		v	3m 51s	4m 42s	4m 38s	4m 42s	4m 44s	4m 33s	4m 16s	4m 47s	4m 40s	4m 43s	4m 28s
Total time (h)			**0.73**	**0.80**	**0.80**	**0.81**	**0.81**	**0.81**	**0.77**	**0.82**	**0.82**	**0.81**	**0.80**
Total time (h,m)			**44m**	**48m**	**48 m**	**49m**	**49m**	**49m**	**46m**	**49m**	**49m**	**49m**	**48m**
Build Tiled (from Depth Maps, Ultra High/High)	v	v	2h 34m	2h 41m	2h 37m	2h 42s	2h 41m	2h 39m	2h 36s	2h 41m	2h 34s	2h 38m	2h 38m

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18. Metashape 1.6.5: **930** images of WINGTRA DSC-RX1RM2 (35mm) 42 MP (7952x5304) images.

File size (JPG) – 16 MB; Flight altitude – 76m; GSD – 1 cm; Area - 0.36 sq.km;

	GPU	CPU	Metashape 244GB	Metashape 244GB	Metashape 488GB	Metashape 488GB	Metashape 192GB	Metashape 192GB	Metashape 192GB	Metashape 192GB
OS			**Windows 2019**	**Linux**	**Windows 2019**	**Linux**	**Windows 2019**	**Windows 2019**	**Linux**	**Linux**
Storage			**Storage X enhanced**	**Storage X enhanced**	**Storage X enhanced**	**Storage X enhanced**	**Storage X enhanced**	**Ephemeral D**	**Storage X enhanced**	**Ephemeral D**
GPU			**2 x TESLA M60**	**2 x TESLA M60**	**4 x TESLA M60**	**4 x TESLA M60**	**4 x TESLA T4**	**4 x TESLA T4**	**4 x TESLA T4**	**4 x TESLA T4**
Processor type			**Intel ® Xeon ® E5-2686 v4**	**Intel ® Xeon ® E5-2686 v4**	**Intel ® Xeon ® E5-2686 v4**	**Intel ® Xeon ® E5-2686 v4**	**Intel ® Xeon ® Cascade Lake 24C**	**Intel ® Xeon ® Cascade Lake 24C**	**Intel ® Xeon ® Cascade Lake 24C**	**Intel ® Xeon ® Cascade Lake 24C**
vCPU			1 socket 16 CPU@2.30GHz 32 vCPU	1 socket 16 CPU@2.30GHz 32 vCPU	2 socket 32 CPU@2.30GHz 64 vCPU	2 socket 32 CPU@2.30GHz 64 vCPU	1 socket 24 CPU @ 2.50GHz 48 vCPU	1 socket 24 CPU @ 2.50GHz 48 vCPU	1 socket 24 CPU @ 2.50GHz 48 vCPU	1 socket 24 CPU @ 2.50GHz 48 vCPU
RAM			244	244	488	488	192	192	192	192
Match Photos (High)	v		13m 28s	12m 23s	8m 15s	8m 19s	6m 40s	6m 1s	6m 32s	5m 49s
Align Cameras (High)		v	4m 33s	3m 4s	4m 10s	2m 42s	3m 39s	3m 0s	2m 11s	2m 16s
Depth Maps (High/Mild)	v		3h 20m	3h 18m	1h 45m	1h 49m	1h 21m	1h 8m	1h 5m	1h 5m
Dense Cloud (High/Mild) without "Point color calculation"		v	4h 7m	2h 21m	3h 34m	1h 54m	2h 56m	2h 31m	1h 39m	1h 33m
DEM (from Dense Cloud)		v	15m 42s	9m 16s	11m 41s	8m 57s	12m 51s	9m 49s	7m 27s	6m 42s
Orthomosaic (DEM) NO "Refine seamlines"		v	1h 20m	56m 33s	1h 9m	55m 56s	1h 6m	55m 42s	45m 14s	38m 39s
Price ($/h)			**$6.914**	**$7.550**	**$11.587**	**$12.383**	**$11.665**	**$11.665**	**$12.393**	**$12.393**
Total time (h)			**9.35**	**7.00**	**6.87**	**5.98**	**5.77**	**4.89**	**3.76**	**3.52**
Total time (h,m)			**9h 21m**	**7h 0m**	**6h 52m**	**5h 59m**	**5h 46m**	**4h 53m**	**3h 46m**	**3h 31m**
Total price			**$64.65**	**$52.85**	**$79.60**	**$74.05**	**$67.31**	**$57.04**	**$46.60**	**$43.62**
Mesh (from Depth Maps) Reconstruction (High/Mild)	v	v	8h 35m	6h 50m	6h 19m	6h 30m	6h 40m	5h 6m	3h 24m	2h 50m
Tiled Model (from Depth maps, High/Mild, High)	v	v	20h 7m	15h 30m	17h 44m	14h 33m	16h 38m	13h 43m	9h 59m	9h 13m

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19. Metashape 1.6.5: **371** images of **PhaseOne iXM-50** 50MP (8280x6208) (35mm).

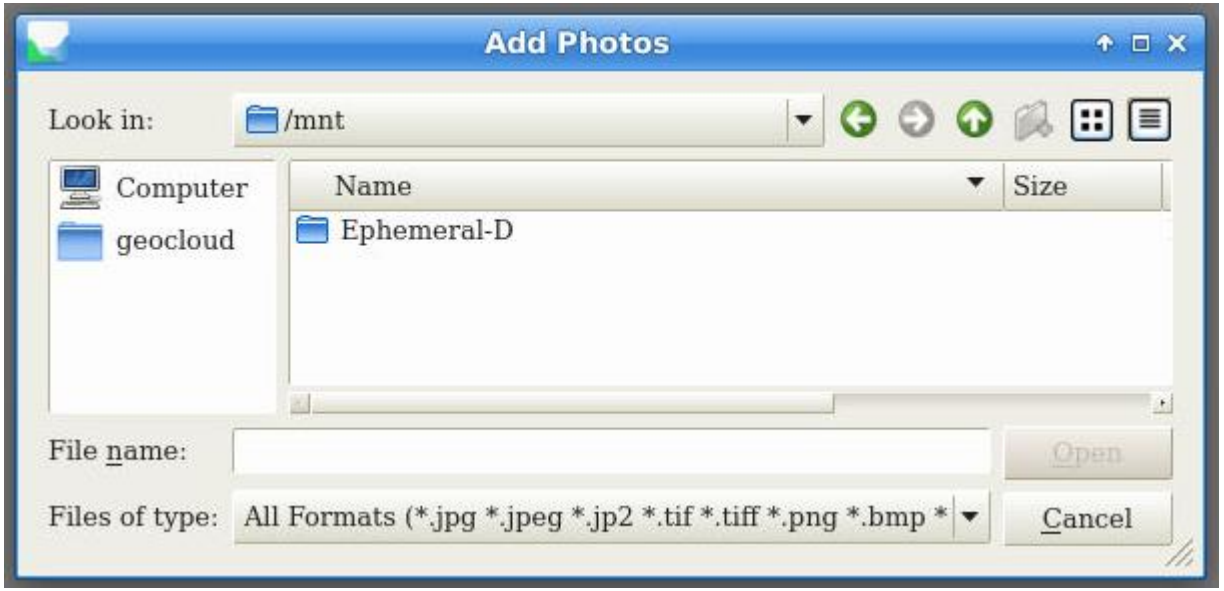
File size (TIFF) – 150 MB; Flight altitude – 100 m; GSD – 1.3 cm; Area - 0.04 sq.km;

	GPU	CPU	Metashape 192GB	Metashape 192GB	Metashape 192GB	Metashape 192GB
OS			**Windows 2019**	**Windows 2019**	**Linux**	**Linux**
Storage			**Storage X enhanced**	**Ephemeral D**	**Storage X enhanced**	**Ephemeral D**
GPU			**4 x TESLA T4**	**4 x TESLA T4**	**4 x TESLA T4**	**4 x TESLA T4**
Processor type			**Intel ® Xeon ® Cascade Lake 24C**	**Intel ® Xeon ® Cascade Lake 24C**	**Intel ® Xeon ® Cascade Lake 24C**	**Intel ® Xeon ® Cascade Lake 24C**
vCPU			1 socket 24 CPU @ 2.50GHz 48 vCPU	1 socket 24 CPU @ 2.50GHz 48 vCPU	1 socket 24 CPU @ 2.50GHz 48 vCPU	1 socket 24 CPU @ 2.50GHz 48 vCPU
RAM			192	192	192	192
Match Photos (High)	v		14m 15s	2m 28s	6m 47s	2m 15s
Align Cameras (High)		v	1m 36s	1m 36s	1m 24s	1m 12s
Depth Maps (High/Mild)	v		2h 24m	1h 37m	1h 48m	1h 25m
Dense Cloud (High/Mild) without "Point color calculation"		v	3h 48m	3h 36m	3h 18m	3h 20m
Tiled Model (from Depth maps, High/Mild, High)	v	v	4h 15m	3h 48m	2h 36m	2h 32m
DEM (from Dense Cloud)		v	55s	53s	40s	38s
Orthomosaic (DEM) NO "Refine seamlines"		v	32m 9s	27m 2s	25m 31s	20m 53s
Price ($/h)			**$11.665**	**$11.665**	**$12.393**	**$12.393**
Total time (h)			**11.03**	**9.51**	**8.16**	**7.66**
Total time (h,m)			**11h 2m**	**9h 31m**	**8h 10m**	**7h 40m**
Total price			**$128.66**	**$110.93**	**$101.13**	**$94.93**

20. Ephemeral disk D: for Metashape 16/32/64/128 and 192GB

Using a local D drive for your data (images, project and log file) can improve processing performance by 11% for Metashape 16GB, 18% for Metashape 32GB, and 68% for Metashape 192GB (see second table for 150MP benchmarks). Processing performance improves mainly on GPU-based processes.
In our tests, there was only an improvement for 150MP large format frames, and there was only minor improvement for small 7.5MB frames.
To get started with local drive D: you need to copy data from Storage X: to D:

To access the local drive from Metashape on Linux-based computers, select the folder: Computer / mnt / Ephemeral-D



Pay attention!
Local drive D: exists only when the computer (Metashape) is operational. If you stop your computer, the D: drive will disappear along with all data. There is no way to recover data. Therefore, please copy the processing results back to Storage X: after processing is complete and before stopping the computer. **Don't use the following script for automatic stopping of the computer in a batch mode if you use the Ephemeral disk for processing and saving the data.**

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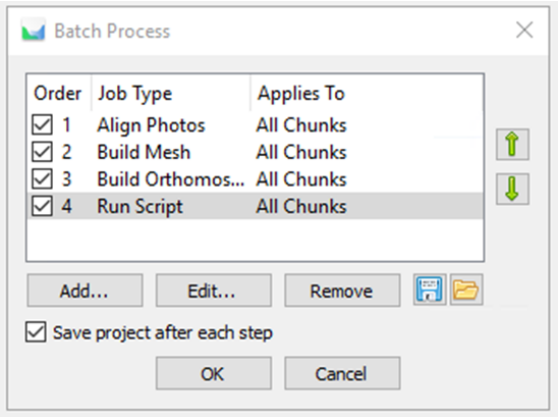
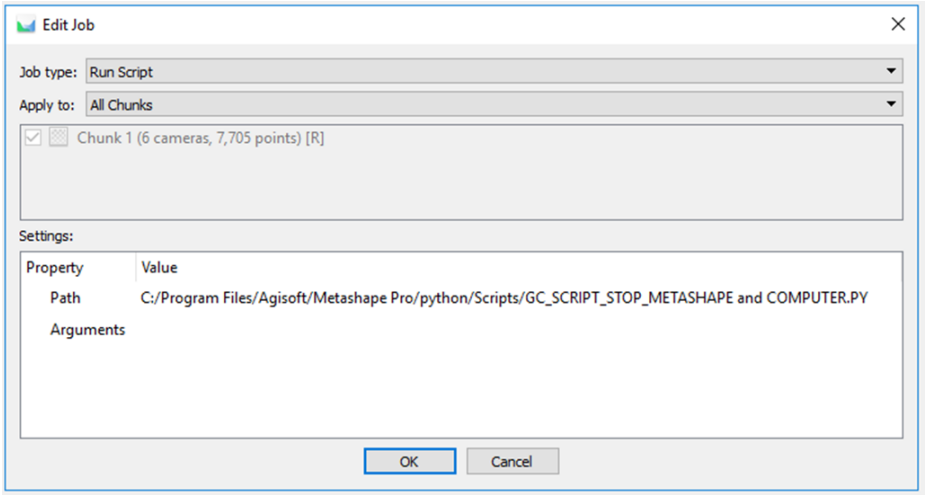
21. Metashape script to stop computer in a Batch Process

To exit Metashape and stop your computer in a Batch Process of Metashape use the script



Windows

C:/Program Files/Agisoft/Metashape Pro/python/Scripts/GC_SCRIPT_STOP_METASHAPE and COMPUTER.py



Linux

/home/geocloud/Metashape-pro/python/Scripts/GC_SCRIPT_STOP_METASHAPE and COMPUTER.py