

UK Biobank Research Analysis Platform Rate Card

All costs are quoted in GBP / £

RAP Storage and Egress Rate Card

Storage: 0.0141 £ per GB per month (excludes data dispensed by UKB RAP)

Egress: 0.0396 £ per GB

RAP Compute Rate Card

DNAnexus Instance Type	EC2 Instance Type	GPUs	vCPUs	Memory (GiB)	Storage (GiB)	Storage Type	On-demand GBP/hr	Spot GBP/hr
mem1_ssd1							0.0248*	0.0066
mem1_ssd1_v2_x2	c5d.large		2	4	50	SSD	0.0496	0.0132
mem1_ssd1_v2_x4	c5d.xlarge		4	8	100	SSD	0.0992	0.0264
mem1_ssd1_v2_x8	c5d.2xlarge		8	16	200	SSD	0.1984	0.0528
mem1_ssd1_v2_x16	c5d.4xlarge		16	32	400	SSD	0.3968	0.1056
mem1_ssd1_v2_x36	c5d.9xlarge		36	72	900	SSD	0.8928	0.2376
mem1_ssd1_v2_x72	c5d.18xlarge		72	144	1800	SSD	1.7856	0.4752
mem1_ssd2							0.0319	0.0167
mem1_ssd2_v2_x2	c5.large		2	4	159	EBS-gp2	0.0638	0.0334
mem1_ssd2_v2_x4	c5.xlarge		4	8	318	EBS-gp2	0.1276	0.0668
mem1_ssd2_v2_x8	c5.2xlarge		8	16	639	EBS-gp2	0.2552	0.1336
mem1_hdd1							0.0315	0.0124
mem1_hdd1_v2_x2	c5.large		2	4	200	EBS-st1	0.0630	0.0248
mem1_hdd1_v2_x4	c5.xlarge		4	8	400	EBS-st1	0.1260	0.0496
mem1_hdd1_v2_x8	c5.2xlarge		8	16	800	EBS-st1	0.2520	0.0992
mem1_hdd1_v2_x16	c5.4xlarge		16	32	1600	EBS-st1	0.5040	0.1984

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mem1 hdd1 v2 x36	c5.9xlarge		36	72	3600	EBS-st1	1.1340	0.4464
mem1 hdd1 v2 x72	c5.18xlarge		72	144	7200	EBS-st1	2.2680	0.8928
mem1 hdd1 v2 x96	c5.24xlarge		96	192	9600	EBS-st1	3.0240	1.1904
mem1 hdd1 x2	c4.large		2	3.75	200	EBS-st1	0.0630	0.0248
mem1 hdd1 x4	c4.xlarge		4	7.5	400	EBS-st1	0.1260	0.0496
mem1 hdd1 x8	c4.2xlarge		8	15	800	EBS-st1	0.2520	0.0992
mem1 hdd1 x16	c4.4xlarge		16	30	1600	EBS-st1	0.5040	0.1984
mem1 hdd1 x36	c4.8xlarge		36	60	3600	EBS-st1	1.1340	0.4464
mem2 hdd2							0.0528	0.0355
mem2 hdd2 v2 x2	m5.large		2	8	1000	EBS-st1	0.1056	0.0710
mem2 hdd2 v2 x4	m5.xlarge		4	16	2000	EBS-st1	0.2112	0.1420
mem2 ssd1							0.0283	0.0066
mem2 ssd1 v2 x2	m5d.large		2	8	75	SSD	0.0566	0.0132
mem2 ssd1 v2 x4	m5d.xlarge		4	16	150	SSD	0.1132	0.0264
mem2 ssd1 v2 x8	m5d.2xlarge		8	32	300	SSD	0.2264	0.0528
mem2 ssd1 v2 x16	m5d.4xlarge		16	64	600	SSD	0.4528	0.1056
mem2 ssd1 v2 x32	m5d.8xlarge		32	128	1200	SSD	0.9056	0.2112
mem2 ssd1 v2 x48	m5d.12xlarge		48	192	1800	SSD	1.3584	0.3168
mem2 ssd1 v2 x64	m5d.16xlarge		64	256	2400	SSD	1.8112	0.4224
mem2 ssd1 v2 x96	m5d.24xlarge		96	384	3600	SSD	2.7168	0.6336
mem2 ssd2							0.0352	0.0167
mem2 ssd2 v2 x2	m5.large		2	8	160	EBS-gp2	0.0704	0.0334
mem2 ssd2 v2 x4	m5.xlarge		4	16	320	EBS-gp2	0.1408	0.0668
mem2 ssd2 v2 x8	m5.2xlarge		8	32	640	EBS-gp2	0.2816	0.1336
mem2 ssd2 v2 x16	m5.4xlarge		16	64	1280	EBS-gp2	0.5632	0.2672
mem2 ssd2 v2 x32	m5.8xlarge		32	128	2560	EBS-gp2	1.1264	0.5344
mem2 ssd2 v2 x48	m5.12xlarge		48	192	3840	EBS-gp2	1.6896	0.8016
mem2 ssd2 v2 x64	m5.16xlarge		64	256	5120	EBS-gp2	2.2528	1.0688
mem2 ssd2 v2 x96	m5.24xlarge		96	384	7480	EBS-gp2	3.3792	1.6032
mem2 ssd2 x2	m4.large		2	8	160	EBS-gp2	0.0704	0.0334
mem2 ssd2 x4	m4.xlarge		4	16	320	EBS-gp2	0.1408	0.0668

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mem2_ssd2_x8	m4.2xlarge		8	32	640	EBS-gp2	0.2816	0.1336
mem2_ssd2_x16	m4.4xlarge		16	64	1280	EBS-gp2	0.5632	0.2672
mem2_ssd2_x40	m4.10xlarge		40	160	3200	EBS-gp2	1.4080	0.6680
mem2_ssd2_x64	m4.16xlarge		64	256	5120	EBS-gp2	2.2528	1.0688
mem2_ssd1_gpu							0.0380	0.0310
mem2_ssd1_gpu_x16	g4dn.4xlarge	1	16	64	225	SSD	0.6080	0.4960
mem2_ssd1_gpu1							0.0344	0.0281
mem2_ssd1_gpu1_x32	g4dn.8xlarge	1	32	128	900	SSD	1.1008	0.8992
mem2_ssd1_gpu1_x64	g4dn.16xlarge	1	64	256	900	SSD	2.2016	1.7984
mem2_ssd1_gpu4							0.0412	0.0336
mem2_ssd1_gpu4_x48	g4dn.12xlarge	4	48	192	900	SSD	1.9776	1.6128
mem3_hdd2							0.0464	0.0211
mem3_hdd2_v2_x2	r5.large		2	16	500	EBS-st1	0.0928	0.0422
mem3_hdd2_v2_x4	r5.xlarge		4	32	1000	EBS-st1	0.1856	0.0844
mem3_hdd2_v2_x8	r5.2xlarge		8	64	2000	EBS-st1	0.3712	0.1688
mem3_ssd1							0.0365	0.0066
mem3_ssd1_v2_x2	r5d.large		2	16	75	SSD	0.0730	0.0132
mem3_ssd1_v2_x4	r5d.xlarge		4	32	150	SSD	0.1460	0.0264
mem3_ssd1_v2_x8	r5d.2xlarge		8	64	300	SSD	0.2920	0.0528
mem3_ssd1_v2_x16	r5d.4xlarge		16	128	600	SSD	0.5840	0.1056
mem3_ssd1_v2_x32	r5d.8xlarge		32	256	1200	SSD	1.1680	0.2112
mem3_ssd1_v2_x48	r5d.12xlarge		48	384	1800	SSD	1.7520	0.3168
mem3_ssd1_v2_x64	r5d.16xlarge		64	512	2400	SSD	2.3360	0.4224
mem3_ssd1_v2_x96	r5d.24xlarge		96	768	3600	SSD	3.5040	0.6336
mem3_ssd1_gpu							0.1960	0.1605
mem3_ssd1_gpu_x8	p3.2xlarge	1	8	61	160	EBS-gp2	1.5680	1.2840
mem3_ssd1_gpu_x32	p3.8xlarge	4	32	244	640	EBS-gp2	6.2720	5.1360
mem3_ssd1_gpu_x64	p3.16xlarge	8	64	488	1280	EBS-st1	12.5440	10.2720
mem3_ssd2							0.0391	0.0319
mem3_ssd2_v2_x2	i3.large		2	15.25	475	SSD	0.0782	0.0638
mem3_ssd2_v2_x4	i3.xlarge		4	30.5	950	SSD	0.1564	0.1276

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mem3_ssd2_v2_x8	i3.2xlarge		8	61	1900	SSD	0.3128	0.2552
mem3_ssd2_v2_x16	i3.4xlarge		16	122	3800	SSD	0.6256	0.5104
mem3_ssd2_v2_x32	i3.8xlarge		32	244	7600	SSD	1.2512	1.0208
mem3_ssd2_v2_x64	i3.16xlarge		64	488	15200	SSD	2.5024	2.0416
mem3_ssd3							0.0568	0.0463
mem3_ssd3_x2	i3en.large		2	16	1250	SSD	0.1136	0.0926
mem3_ssd3_x4	i3en.xlarge		4	32	2500	SSD	0.2272	0.1852
mem3_ssd3_x8	i3en.2xlarge		8	64	5000	SSD	0.4544	0.3704
mem3_ssd3_x12	i3en.3xlarge		12	96	7500	SSD	0.6816	0.5556
mem3_ssd3_x24	i3en.6xlarge		24	192	15000	SSD	1.3632	1.1112
mem3_ssd3_x48	i3en.12xlarge		48	384	30000	SSD	2.7264	2.2224
mem3_ssd3_x96	i3en.24xlarge		96	768	60000	SSD	5.4528	4.4448
mem4_ssd1							0.0567	0.0463
mem4_ssd1_x128	x1.32xlarge		128	1952	3840	SSD	7.2576	5.9264
mem2_ssd2_gpu1_x4c							0.1377	0.1124
mem2_ssd2_gpu1_x4	g5.xlarge	1	4	16	250	SSD	0.5508	0.4496
mem2_ssd2_gpu1_x8c							0.0830	0.0677
mem2_ssd2_gpu1_x8	g5.2xlarge	1	8	32	450	SSD	0.6640	0.5416
mem2_ssd2_gpu1_x16c							0.0556	0.0454
mem2_ssd2_gpu1_x16	g5.4xlarge	1	16	64	600	SSD	0.8896	0.7264
mem2_ssd2_gpu1_x32c							0.0419	0.0342
mem2_ssd2_gpu1_x32	g5.8xlarge	1	32	128	900	SSD	1.3408	1.0944
mem2_ssd2_gpu1_x64c							0.0351	0.0286
mem2_ssd2_gpu1_x64	g5.16xlarge	1	64	256	1900	SSD	2.2464	1.8304
mem2_ssd2_gpu4_x48c							0.0647	0.0528
mem2_ssd2_gpu4_x48	g5.12xlarge	4	48	192	3800	SSD	3.1056	2.5344
mem2_ssd2_gpu4_x96c							0.0465	0.0380
mem2_ssd2_gpu4_x96	g5.24xlarge	4	96	384	3800	SSD	4.4640	3.6480
mem2_ssd2_gpu8_x192c							0.0465	0.0380
mem2_ssd2_gpu8_x192	g5.48xlarge	8	192	768	7600	SSD	8.9280	7.2960
mem3_ssd2_dragen_fpga1_x16c							0.1932	N/A
mem3_ssd2_dragen_fpga1_x16†	f1.4xlarge		16	244	940	SSD	3.0912	N/A

* Numbers in bold fonts are in **GBP/core hr** and used as unit pricing in invoice calculation. For example, 3 hours of mem1_ssd1_v2_x2 usage, will be translated into 6 core hours of mem1_ssd1 usage in the final invoice.

† The DRAGEN licence rate (\$1.5 per instance hour) is bundled into the mem3_ssd2_dragen_fpga1_x16 hourly rate. We do not expect mem3_ssd2_dragen_fpga1_x16 to be used for any other purposes than running the DRAGEN app (dragen_germline_ukb).