

Creating GPU Instances

Create only GPU instances

```
$ sudo nvidia-smi mig -cgi 14,14,19,19,20
Successfully created GPU instance ID 5 on GPU 0 using profile MIG 2g.20gb (ID 14)
Successfully created GPU instance ID 3 on GPU 0 using profile MIG 2g.20gb (ID 14)
Successfully created GPU instance ID 13 on GPU 0 using profile MIG 1g.10gb (ID 19)
Successfully created GPU instance ID 9 on GPU 0 using profile MIG 1g.10gb (ID 19)
Successfully created GPU instance ID 10 on GPU 0 using profile MIG 1g.10gb+me (ID 20)
```

Create GPU instances and apply default compute instance profile

```
$ sudo nvidia-smi mig -cgi 14,14,19,19,20 -C
Successfully created GPU instance ID 5 on GPU 0 using profile MIG 2g.20gb (ID 14)
Successfully created compute instance ID 0 on GPU 0 GPU instance ID 5 using profile MIG 2g.20gb (ID 1)
Successfully created GPU instance ID 3 on GPU 0 using profile MIG 2g.20gb (ID 14)
Successfully created compute instance ID 0 on GPU 0 GPU instance ID 3 using profile MIG 2g.20gb (ID 1)
Successfully created GPU instance ID 13 on GPU 0 using profile MIG 1g.10gb (ID 19)
Successfully created compute instance ID 0 on GPU 0 GPU instance ID 13 using profile MIG 1g.10gb (ID 0)
Successfully created GPU instance ID 9 on GPU 0 using profile MIG 1g.10gb (ID 19)
Successfully created compute instance ID 0 on GPU 0 GPU instance ID 9 using profile MIG 1g.10gb (ID 0)
Successfully created GPU instance ID 10 on GPU 0 using profile MIG 1g.10gb+me (ID 20)
Successfully created compute instance ID 0 on GPU 0 GPU instance ID 10 using profile MIG 1g.10gb (ID 0)
```

One big GPU

```
$ sudo nvidia-smi mig -cgi 0 -C
Successfully created GPU instance ID 0 on GPU 0 using profile MIG 7g.80gb (ID 0)
Successfully created compute instance ID 0 on GPU 0 GPU instance ID 0 using profile MIG 7g.80gb (ID 4)
```

```
$ nvidia-smi -L
GPU 0: NVIDIA A100 80GB PCIe (UUID: GPU-
a166d193-64ba-8969-91b0-7729983c680b)
    MIG 7g.80gb    Device  0: (UUID: MIG-c4f17314-2b46-5569-ac07-
bb0781b44ba7)
$ nvidia-smi
Thu Mar 10 21:34:25 2022
+-----+
--+
| NVIDIA-SMI 510.47.03      Driver Version: 510.47.03      CUDA Version: 11.6
|
|-----+-----+-----+
--+
| GPU   Name                Persistence-M| Bus-Id        Disp.A | Volatile Uncorr.
ECC |
| Fan   Temp   Perf   Pwr:Usage/Cap|      Memory-Usage | GPU-Util  Compute
M. |
|                               |                      |              MIG
M. |
|=====+=====+=====+
==|
|  0  NVIDIA A100 80G...  Off  | 00000000:06:00.0 Off  |
On |
| N/A   32C    P0     67W / 300W |      0MiB / 81920MiB |      N/A
Default |
|                               |                      |
Enabled |
+-----+-----+-----+
--+

+-----+
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| MIG devices:
|
+-----+-----+-----+
--+
| GPU  GI  CI  MIG |      Memory-Usage |      Vol |      Shared
|
|      ID  ID  Dev |      BAR1-Usage | SM      Unc| CE  ENC  DEC  OFA
JPG|
|                  |                  |          ECC|
|
|=====+=====+=====+
==|
|  0    0    0    0 |      0MiB / 81069MiB | 98      0 |  7   0   5   1
1 |
|                  |      1MiB / 13107... |          |
|
+-----+-----+-----+
--+
```

```

+-----+
--+
| Processes:
|
| GPU   GI    CI          PID   Type   Process name                      GPU
Memory |
|       ID    ID                                Usage
|
|=====|
==|
| No running processes found
|
+-----+
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```

Many (7) smallest GPUs

```

~$ sudo nvidia-smi mig -cgi 19,19,19,19,19,19,19 -C
Successfully created GPU instance ID 13 on GPU 0 using profile MIG 1g.10gb
(ID 19)
Successfully created compute instance ID 0 on GPU 0 GPU instance ID 13
using profile MIG 1g.10gb (ID 0)
Successfully created GPU instance ID 11 on GPU 0 using profile MIG 1g.10gb
(ID 19)
Successfully created compute instance ID 0 on GPU 0 GPU instance ID 11
using profile MIG 1g.10gb (ID 0)
Successfully created GPU instance ID 12 on GPU 0 using profile MIG 1g.10gb
(ID 19)
Successfully created compute instance ID 0 on GPU 0 GPU instance ID 12
using profile MIG 1g.10gb (ID 0)
Successfully created GPU instance ID 7 on GPU 0 using profile MIG 1g.10gb
(ID 19)
Successfully created compute instance ID 0 on GPU 0 GPU instance ID 7
using profile MIG 1g.10gb (ID 0)
Successfully created GPU instance ID 8 on GPU 0 using profile MIG 1g.10gb
(ID 19)
Successfully created compute instance ID 0 on GPU 0 GPU instance ID 8
using profile MIG 1g.10gb (ID 0)
Successfully created GPU instance ID 9 on GPU 0 using profile MIG 1g.10gb
(ID 19)
Successfully created compute instance ID 0 on GPU 0 GPU instance ID 9
using profile MIG 1g.10gb (ID 0)
Successfully created GPU instance ID 10 on GPU 0 using profile MIG 1g.10gb
(ID 19)
Successfully created compute instance ID 0 on GPU 0 GPU instance ID 10
using profile MIG 1g.10gb (ID 0)

$ nvidia-smi -L
GPU 0: NVIDIA A100 80GB PCIe (UUID: GPU-
a166d193-64ba-8969-91b0-7729983c680b)

```

```
MIG 1g.10gb      Device  0: (UUID: MIG-6655c8fd-3878-5030-
a9b0-65b40839f65e)
MIG 1g.10gb      Device  1: (UUID: MIG-52c663bb-eef5-580c-
b98f-2c2d93f4d668)
MIG 1g.10gb      Device  2: (UUID: MIG-
efafa9b6-09cc-5b9f-9a43-73dc927794f0)
MIG 1g.10gb      Device  3: (UUID:
MIG-3f2ece72-3e45-560d-8698-79d951b1312b)
MIG 1g.10gb      Device  4: (UUID: MIG-09f3602a-747a-5357-9d60-
fd883da6fae2)
MIG 1g.10gb      Device  5: (UUID:
MIG-38d561b9-0ddf-5033-9fc0-1016588a3854)
MIG 1g.10gb      Device  6: (UUID: MIG-33709a1d-5135-5f0d-a6ab-
b936857ed5e4)

$ nvidia-smi
Thu Mar 10 21:36:19 2022
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| NVIDIA-SMI 510.47.03      Driver Version: 510.47.03      CUDA Version: 11.6
|
|-----+-----+-----+
--+
| GPU   Name                Persistence-M| Bus-Id        Disp.A | Volatile Uncorr.
ECC |
| Fan   Temp   Perf    Pwr:Usage/Cap|      Memory-Usage | GPU-Util  Compute
M. |
|                               |                      |              MIG
M. |
|=====+=====+=====+
==|
|   0   NVIDIA A100 80G...  Off  | 00000000:06:00.0 Off  |
On |
| N/A    32C    P0      68W / 300W |    45MiB / 81920MiB |      N/A
Default |
|                               |                      |
Enabled |
+-----+-----+-----+
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+-----+
--+
| MIG devices:
|
+-----+-----+-----+
--+
| GPU  GI  CI  MIG |      Memory-Usage |      Vol|      Shared
|
|      ID  ID  Dev |      BAR1-Usage | SM      Unc| CE  ENC  DEC  OFA
JPG|
|                               |      ECC|

```

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0 7 0 0				6MiB / 9728MiB				14		0		1 0		0 0													
0				0MiB / 16383MiB																							
+-----+-----+-----+-----																											
--+																											
0 8 0 1				6MiB / 9728MiB				14		0		1 0		0 0													
0				0MiB / 16383MiB																							
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0 9 0 2				6MiB / 9728MiB				14		0		1 0		0 0													
0				0MiB / 16383MiB																							
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0 10 0 3				6MiB / 9728MiB				14		0		1 0		0 0													
0				0MiB / 16383MiB																							
+-----+-----+-----+-----																											
--+																											
0 11 0 4				6MiB / 9728MiB				14		0		1 0		0 0													
0				0MiB / 16383MiB																							
+-----+-----+-----+-----																											
--+																											
0 12 0 5				6MiB / 9728MiB				14		0		1 0		0 0													
0				0MiB / 16383MiB																							
+-----+-----+-----+-----																											
--+																											
0 13 0 6				6MiB / 9728MiB				14		0		1 0		0 0													
0				0MiB / 16383MiB																							
+-----+-----+-----+-----																											
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+-----+-----+-----+-----																											
--+																											
Processes:																											

GPU	GI	CI	PID	Type	Process name	GPU
Memory						Usage
	ID	ID				
=====						
==						
No running processes found						
+-----						
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One big GPU with many compute instances

```
$sudo nvidia-smi mig -cci 0
Successfully created compute instance ID 0 on GPU 0 GPU instance ID 0
using profile MIG 1c.7g.80gb (ID 0)

$ sudo nvidia-smi mig -cci 0,0,0,0,0,0,0
Successfully created compute instance ID 0 on GPU 0 GPU instance ID 0
using profile MIG 1c.7g.80gb (ID 0)
Successfully created compute instance ID 1 on GPU 0 GPU instance ID 0
using profile MIG 1c.7g.80gb (ID 0)
Successfully created compute instance ID 2 on GPU 0 GPU instance ID 0
using profile MIG 1c.7g.80gb (ID 0)
Successfully created compute instance ID 3 on GPU 0 GPU instance ID 0
using profile MIG 1c.7g.80gb (ID 0)
Successfully created compute instance ID 4 on GPU 0 GPU instance ID 0
using profile MIG 1c.7g.80gb (ID 0)
Successfully created compute instance ID 5 on GPU 0 GPU instance ID 0
using profile MIG 1c.7g.80gb (ID 0)
Successfully created compute instance ID 6 on GPU 0 GPU instance ID 0
using profile MIG 1c.7g.80gb (ID 0)

$ nvidia-smi -L
GPU 0: NVIDIA A100 80GB PCIe (UUID: GPU-
a166d193-64ba-8969-91b0-7729983c680b)
  MIG 1c.7g.80gb Device 0: (UUID: MIG-c4f17314-2b46-5569-ac07-
bb0781b44ba7)
  MIG 1c.7g.80gb Device 1: (UUID: MIG-2b5e73e1-66c1-5801-8084-
ef0d0ec08b6c)
  MIG 1c.7g.80gb Device 2: (UUID: MIG-000028a5-5c26-532f-
b903-38ffc3ed1422)
  MIG 1c.7g.80gb Device 3: (UUID: MIG-3046d0e8-aaf9-546e-
a9a7-5673d31eeea8)
  MIG 1c.7g.80gb Device 4: (UUID: MIG-80c0ecbd-29bb-5944-8576-
a0c04b437a27)
  MIG 1c.7g.80gb Device 5: (UUID: MIG-e5a655a5-9430-51ef-
abca-3f8c1527023c)
  MIG 1c.7g.80gb Device 6: (UUID: MIG-
b6de6961-47b2-56c1-88f9-26775c22e1a7)
```

```

$ nvidia-smi
Thu Mar 10 21:21:23 2022
+-----+
--+
| NVIDIA-SMI 510.47.03      Driver Version: 510.47.03      CUDA Version: 11.6
|
|-----+-----+-----+
--+
| GPU   Name               Persistence-M| Bus-Id        Disp.A | Volatile Uncorr.
ECC |
| Fan   Temp   Perf   Pwr:Usage/Cap|      Memory-Usage | GPU-Util  Compute
M. |
|                               |                      |              MIG
M. |
|=====+=====+=====+
==|
|  0  NVIDIA A100 80G...  Off  | 00000000:06:00.0 Off  |
On |
| N/A   32C    P0     61W / 300W |      0MiB / 81920MiB |      N/A
Default |
|                               |                      |
Enabled |
+-----+-----+-----+
--+

+-----+
--+
| MIG devices:
|
+-----+-----+-----+
--+
| GPU  GI  CI  MIG |      Memory-Usage |      Vol |      Shared
|
|      ID  ID  Dev |      BAR1-Usage | SM      Unc| CE  ENC  DEC  OFA
JPG|
|                  |                  |          ECC|
|
|=====+=====+=====+
==|
|  0    0    0    0 |      0MiB / 81069MiB | 14      0 |  7   0   5   1
1 |
|                  |      1MiB / 13107... |          |
|
+-----+-----+-----+
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|  0    0    1    1 |                  | 14      0 |  7   0   5   1
1 |
|                  |                  |          |
|
+-----+-----+-----+

```

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	0	0	2	2					1407051
1									
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	0	0	3	3					1407051
1									
+-----+									
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	0	0	4	4					1407051
1									
+-----+									
--+									
	0	0	5	5					1407051
1									
+-----+									
--+									
	0	0	6	6					1407051
1									
+-----+									
--+									
+-----+									
--+									
+-----+									
Processes:									
GPU GI CI PID Type Process name GPU									
Memory									
ID ID Usage									
=====									
==									
No running processes found									
+-----+									
--+									

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