

Device

```
=== Device Information ===
Available Devices:
Device 0: "NVIDIA GeForce RTX 4050 Laptop GPU"
Selected Device: NVIDIA GeForce RTX 4050 Laptop GPU
Selected Device ID: 0
Compute Capability: 8.9
SMs: 20
Device Global Memory: 6140 MiB
Shared Memory per SM: 100 KiB
Memory Bus Width: 96 bits (ECC disabled)
Application Compute Clock Rate: 2.355 GHz
Application Memory Clock Rate: 7.825 GHz
```

Output Details

- **Latency**: refers to the [min, max, mean, median, 99% percentile] of the engine latency measurements, when timing the engine w/o profiling layers.
- **Throughput**: is measured in query (inference) per second (QPS).
- **Enqueue Time**: Time taken to enqueue inference requests.
- **H2D Latency**: Host-to-Device latency (data transfer time).
- **GPU Compute Time**: Time spent computing on the GPU.
- **D2H Latency**: Device-to-Host latency (data transfer time).
- **Total Host Walltime**
- **Total GPU Compute Time**

YOLOv9-C QAT (SiLU)

Precision: FP32+FP16+INT8

Batch Size 1

```
=== Performance summary ===
Throughput: 353.35 qps
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```
Latency: min = 2.81299 ms, max = 3.00446 ms, mean = 2.82833 ms, median = 2.82812 ms, percentile(90%) = 2.83105 ms, percentile(95%) = 2.83203 ms, percentile(99%) = 2.83984 ms
```

```
Enqueue Time: min = 0.0180664 ms, max = 0.638184 ms, mean = 0.0440733 ms, median = 0.0322266 ms, percentile(90%) = 0.0759888 ms, percentile(95%) = 0.0914307 ms, percentile(99%) = 0.172363 ms
```

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H2D Latency: min = 0 ms, max = 0 ms, mean = 0 ms, median = 0 ms, percentile(90%) = 0 ms, percentile(95%) = 0 ms, percentile(99%) = 0 ms
```

```
GPU Compute Time: min = 2.81299 ms, max = 3.00446 ms, mean = 2.82833 ms, median = 2.82812 ms, percentile(90%) = 2.83105 ms, percentile(95%) = 2.83203 ms, percentile(99%) = 2.83984 ms
```

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D2H Latency: min = 0 ms, max = 0 ms, mean = 0 ms, median = 0 ms, percentile(90%) = 0 ms, percentile(95%) = 0 ms, percentile(99%) = 0 ms
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Total Host Walltime: 10.0043 s
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Total GPU Compute Time: 9.99813 s
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BatchSize 4

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=== Performance summary ===
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Throughput: 105.978 qps
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Latency: min = 9.4126 ms, max = 9.45801 ms, mean = 9.4341 ms, median = 9.43408 ms, percentile(90%) = 9.44043 ms, percentile(95%) = 9.44336 ms, percentile(99%) = 9.44873 ms
```

```
Enqueue Time: min = 0.0179443 ms, max = 0.487793 ms, mean = 0.0609208 ms, median = 0.0522461 ms, percentile(90%) = 0.101562 ms, percentile(95%) = 0.114746 ms, percentile(99%) = 0.170898 ms
```

```
H2D Latency: min = 0 ms, max = 0 ms, mean = 0 ms, median = 0 ms, percentile(90%) = 0 ms, percentile(95%) = 0 ms, percentile(99%) = 0 ms
```

```
GPU Compute Time: min = 9.4126 ms, max = 9.45801 ms, mean = 9.4341 ms, median = 9.43408 ms, percentile(90%) = 9.44043 ms, percentile(95%) = 9.44336 ms, percentile(99%) = 9.44873 ms
```

```
D2H Latency: min = 0 ms, max = 0 ms, mean = 0 ms, median = 0 ms, percentile(90%) = 0 ms, percentile(95%) = 0 ms, percentile(99%) = 0 ms
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Total Host Walltime: 10.0209 s
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Total GPU Compute Time: 10.019 s
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BatchSize 8

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=== Performance summary ===
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Throughput: 51.9609 qps
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Latency: min = 19.1601 ms, max = 20.0898 ms, mean = 19.2436 ms, median = 19.2441 ms, percentile(90%) = 19.2549 ms, percentile(95%) = 19.2588 ms, percentile(99%) = 19.2646 ms
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Enqueue Time: min = 0.0224609 ms, max = 0.500488 ms, mean = 0.0793705 ms, median =
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0.0615234 ms, percentile(90%) = 0.120972 ms, percentile(95%) = 0.150635 ms,  
percentile(99%) = 0.366333 ms
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```
H2D Latency: min = 0 ms, max = 0 ms, mean = 0 ms, median = 0 ms, percentile(90%) =  
0 ms, percentile(95%) = 0 ms, percentile(99%) = 0 ms
```

```
GPU Compute Time: min = 19.1601 ms, max = 20.0898 ms, mean = 19.2436 ms, median =  
19.2441 ms, percentile(90%) = 19.2549 ms, percentile(95%) = 19.2588 ms,  
percentile(99%) = 19.2646 ms
```

```
D2H Latency: min = 0 ms, max = 0 ms, mean = 0 ms, median = 0 ms, percentile(90%) =  
0 ms, percentile(95%) = 0 ms, percentile(99%) = 0 ms
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Total Host Walltime: 10.0268 s
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Total GPU Compute Time: 10.0259 s
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BatchSize 12

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=== Performance summary ===
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Throughput: 34.1497 qps
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Latency: min = 29.184 ms, max = 29.3555 ms, mean = 29.2811 ms, median = 29.2659  
ms, percentile(90%) = 29.3379 ms, percentile(95%) = 29.3428 ms, percentile(99%) =  
29.3477 ms
```

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Enqueue Time: min = 0.0268555 ms, max = 0.478027 ms, mean = 0.0878111 ms, median =  
0.0643921 ms, percentile(90%) = 0.127258 ms, percentile(95%) = 0.196289 ms,  
percentile(99%) = 0.312012 ms
```

```
H2D Latency: min = 0 ms, max = 0 ms, mean = 0 ms, median = 0 ms, percentile(90%) =  
0 ms, percentile(95%) = 0 ms, percentile(99%) = 0 ms
```

```
GPU Compute Time: min = 29.184 ms, max = 29.3555 ms, mean = 29.2811 ms, median =  
29.2659 ms, percentile(90%) = 29.3379 ms, percentile(95%) = 29.3428 ms,  
percentile(99%) = 29.3477 ms
```

```
D2H Latency: min = 0 ms, max = 0 ms, mean = 0 ms, median = 0 ms, percentile(90%) =  
0 ms, percentile(95%) = 0 ms, percentile(99%) = 0 ms
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Total Host Walltime: 10.0733 s
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Total GPU Compute Time: 10.0727 s
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BatchSize 16

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=== Performance summary ===
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Throughput: 25.3653 qps
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Latency: min = 39.3718 ms, max = 39.4531 ms, mean = 39.4221 ms, median = 39.4221
ms, percentile(90%) = 39.4346 ms, percentile(95%) = 39.4404 ms, percentile(99%) =
39.4482 ms

Enqueue Time: min = 0.0361328 ms, max = 0.253418 ms, mean = 0.0759963 ms, median =
0.0615234 ms, percentile(90%) = 0.116211 ms, percentile(95%) = 0.126953 ms,
percentile(99%) = 0.21582 ms

H2D Latency: min = 0 ms, max = 0 ms, mean = 0 ms, median = 0 ms, percentile(90%) =
0 ms, percentile(95%) = 0 ms, percentile(99%) = 0 ms

GPU Compute Time: min = 39.3718 ms, max = 39.4531 ms, mean = 39.4221 ms, median =
39.4221 ms, percentile(90%) = 39.4346 ms, percentile(95%) = 39.4404 ms,
percentile(99%) = 39.4482 ms

D2H Latency: min = 0 ms, max = 0 ms, mean = 0 ms, median = 0 ms, percentile(90%) =
0 ms, percentile(95%) = 0 ms, percentile(99%) = 0 ms

Total Host Walltime: 10.0925 s

Total GPU Compute Time: 10.0921 s
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BatchSize Resilience

```
=== Performance summary ===
Throughput: 51.5089 qps

Latency: min = 19.2051 ms, max = 22.4696 ms, mean = 19.4124 ms, median = 19.2358
ms, percentile(90%) = 19.293 ms, percentile(95%) = 20.3141 ms, percentile(99%) =
21.8358 ms

Enqueue Time: min = 0.0234375 ms, max = 0.817383 ms, mean = 0.0787169 ms, median =
0.0625 ms, percentile(90%) = 0.117065 ms, percentile(95%) = 0.129395 ms,
percentile(99%) = 0.319092 ms

H2D Latency: min = 0 ms, max = 0 ms, mean = 0 ms, median = 0 ms, percentile(90%) =
0 ms, percentile(95%) = 0 ms, percentile(99%) = 0 ms

GPU Compute Time: min = 19.2051 ms, max = 22.4696 ms, mean = 19.4124 ms, median =
19.2358 ms, percentile(90%) = 19.293 ms, percentile(95%) = 20.3141 ms,
percentile(99%) = 21.8358 ms

D2H Latency: min = 0 ms, max = 0 ms, mean = 0 ms, median = 0 ms, percentile(90%) =
0 ms, percentile(95%) = 0 ms, percentile(99%) = 0 ms

Total Host Walltime: 10.0371 s

Total GPU Compute Time: 10.0362 s
```