

Choose the Right Hardware

Proposal Template

Scenario 1: Manufacturing

Client Requirements and Potential Hardware Solution

Look through the scenario and find any relevant client requirements. Then, suggest a potential hardware type and explain how this hardware would satisfy each of the requirements.

Which hardware might be most appropriate for this scenario? (CPU / IGPU / VPU / FPGA)
<i>FPGA is most appropriate for this scenario. According to the client requirement, there are three main focus are, 1. FPS, 2. New issue, 3. Life time. For this point, FPGA is more suitable because it has long time support, re programmable and good FPS.</i>

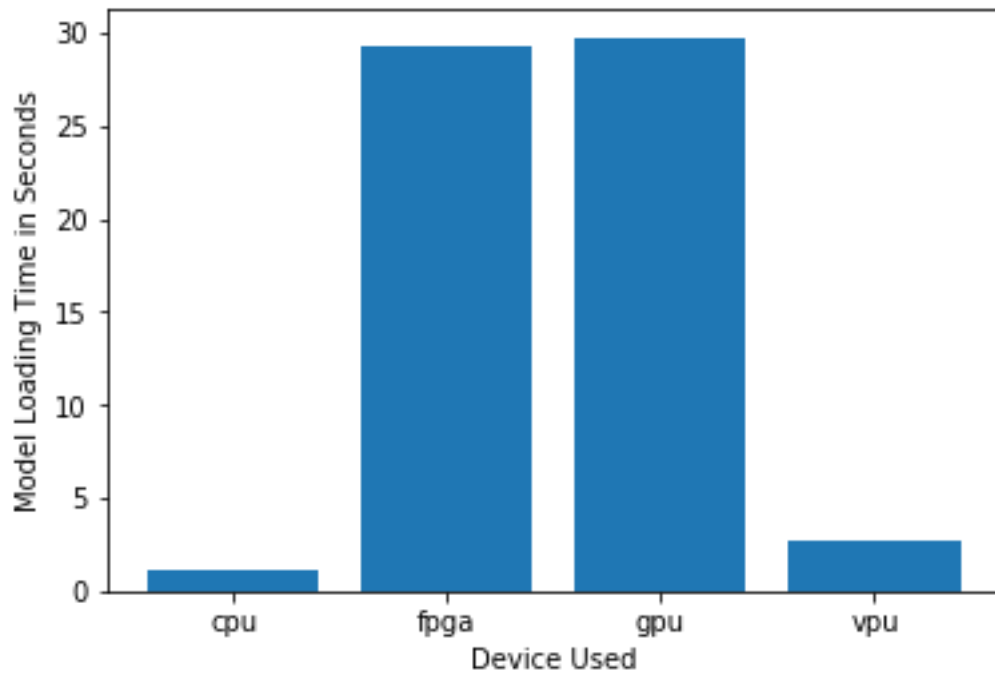
Requirement Observed (Include at least two.)	How does the chosen hardware meet this requirement?
<i>The client requires long lifetime support.</i>	<i>FPGA is very costly, so it make with long lifetime support and good fit for this scenario.</i>
<i>The client raises new problem issues.</i>	<i>FPGA can reprogrammable and would fit in this issues.</i>

Queue Monitoring Requirements

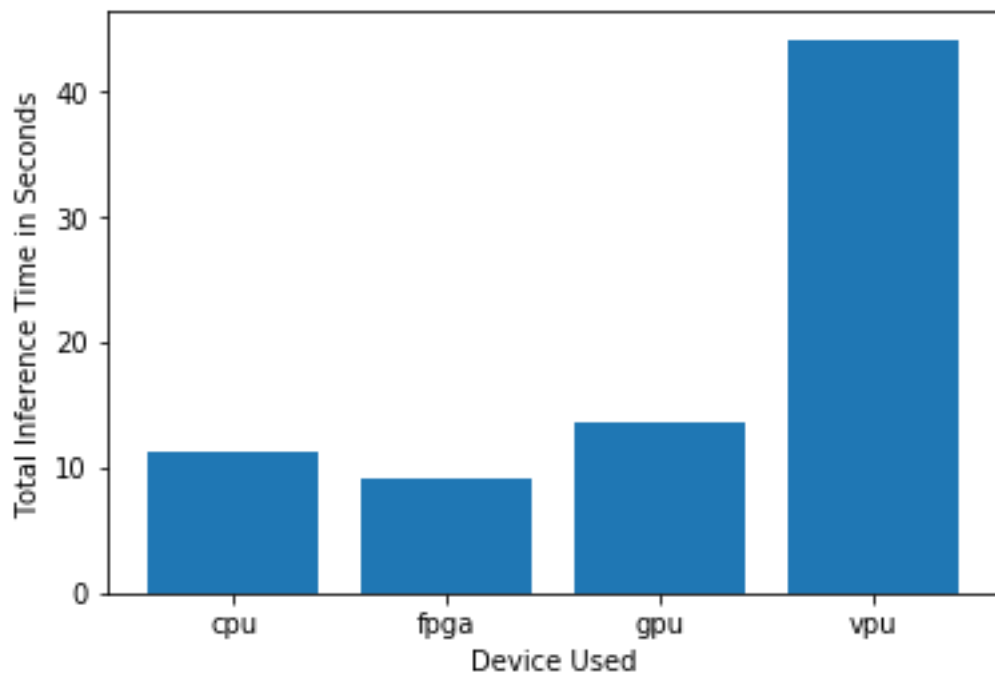
Maximum number of people in the queue	<i>Maximum number of the people in the queue is 2.</i>
Model precision chosen (FP32, FP16, or Int8)	<i>FP32 for CPU and FP16 for GPU, VPU, FPGA.</i>

Test Results

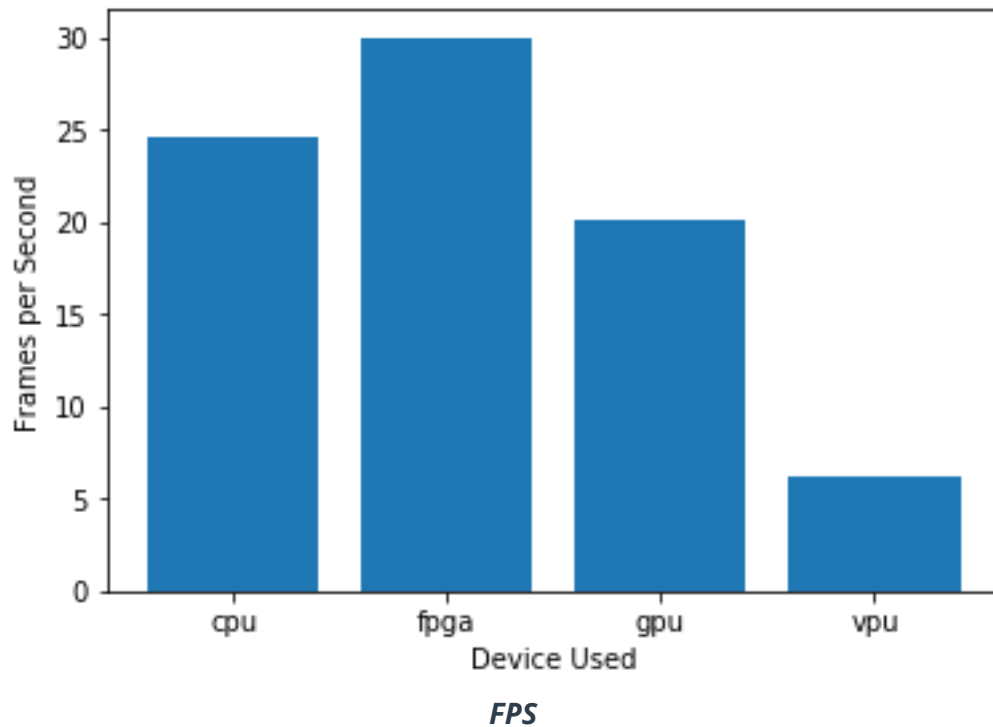
After you've tested your application on all four hardware types (CPU, IGPU, VPU, and FPGA), copy the matplotlib output showing the comparison into the spaces below. You should have three graphs (for model load time, inference time, and FPS).



Model Load Time



Inference Time



Final Hardware Recommendation

Now synthesize your points from above and provide a brief write-up describing why the chosen hardware is the best choice for this scenario. Be sure to discuss the client's requirements, the test results, and how these relate to one another (e.g., perhaps one of the devices performed better than the rest, but does not meet one of the client's requirements).

Write-up: Final Hardware Recommendation

The final hardware recommendation for this scenario is FPGA, it meets all requirements of the client.

Scenario 2: Retail

Client Requirements and Potential Hardware Solution

Look through the scenario and find any relevant client requirements. Then, suggest a potential hardware type and explain how this hardware would satisfy each of the requirements.

**Which hardware might be most appropriate for this scenario?
(CPU / IGPU / VPU / FPGA)**

VPU is most appropriate for this scenario.

Three main focus area is observed for this scenario, first is that the system has already a good CPU and second is that low budget and last is that the model loading time. And, VPU is appropriate for this scenario.

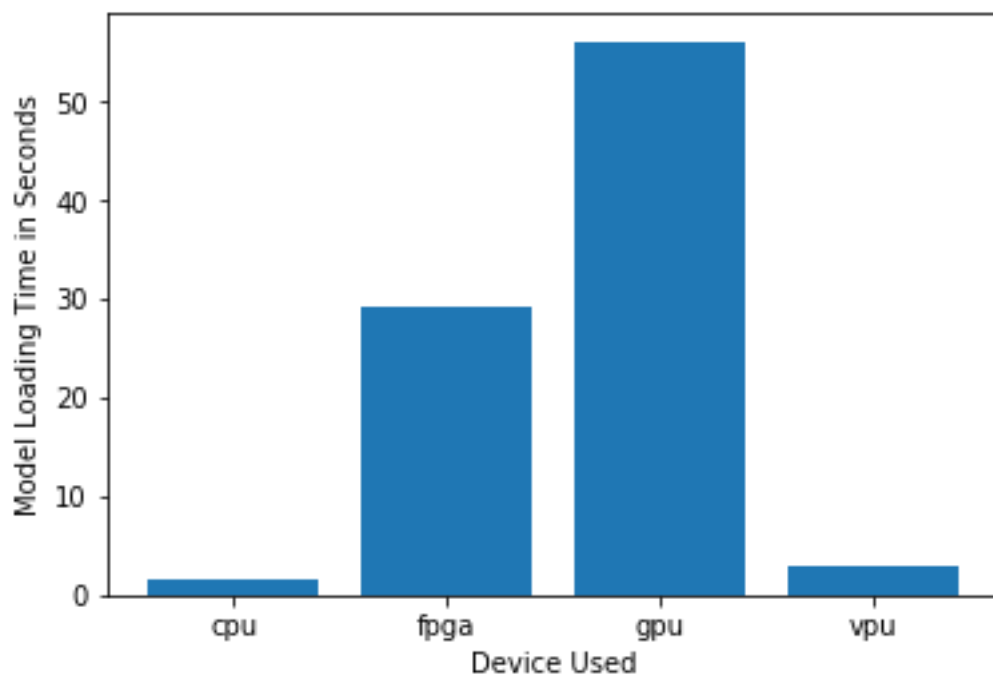
Requirement Observed (Include at least two.)	How does the chosen hardware meet this requirement?
<i>The budget of the client is very low.</i>	<i>NCS2 price is approximate \$100, so it is good fit in this scenario.</i>
<i>The client require low model loading time.</i>	<i>NCS2 is working as AI acceleration device and it would fit in this scenario.</i>

Queue Monitoring Requirements

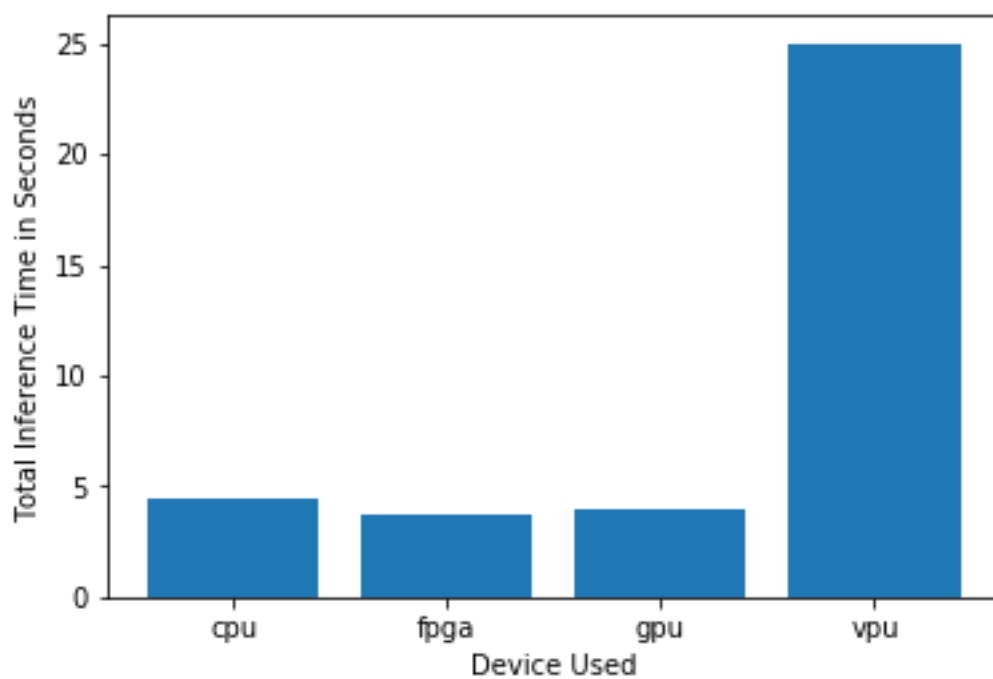
Maximum number of people in the queue	<i>Maximum number of the people in the queue is 2.</i>
Model precision chosen (FP32, FP16, or Int8)	<i>FP32 for CPU and FP16 for GPU, VPU, FPGA.</i>

Test Results

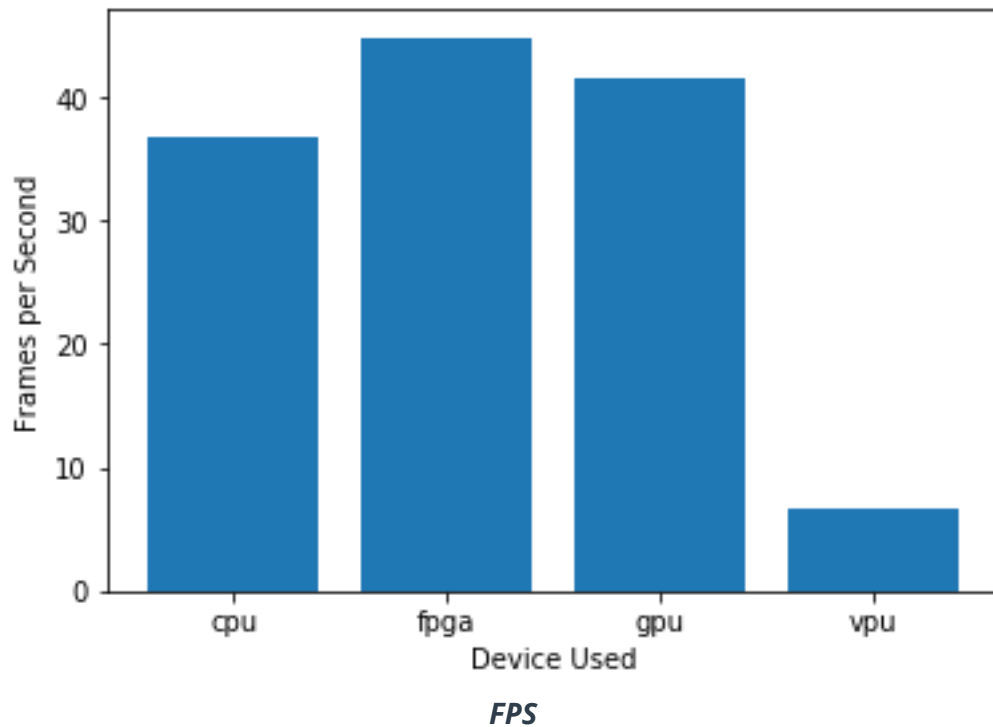
After you've tested your application on all four hardware types (CPU, IGPU, VPU, and FPGA), copy the matplotlib output showing the comparison into the spaces below. You should have three graphs (for model load time, inference time, and FPS).



Model Load Time



Inference Time



Final Hardware Recommendation

Now synthesize your points from above and provide a brief write-up describing why the chosen hardware is the best choice for this scenario. Be sure to discuss the client's requirements, the test results, and how these relate to one another (e.g., perhaps one of the devices performed better than the rest, but does not meet one of the client's requirements).

Write-up: Final Hardware Recommendation

As, VPU is low model lading time and the cost of the VPU is also low. So, final hardware recommendation is VPU.

Scenario 3: Transportation

Client Requirements and Potential Hardware Solution

Look through the scenario and find any relevant client requirements. Then, suggest a potential hardware type and explain how this hardware would satisfy each of the requirements.

**Which hardware might be most appropriate for this scenario?
(CPU / IGPU / VPU / FPGA)**

VPU is most appropriate for this scenario.

As, in this scenario, no significant additional processing power is available to run inference and the budget allows for a maximum of \$300 per machine. So that, is best fit for this scenario.

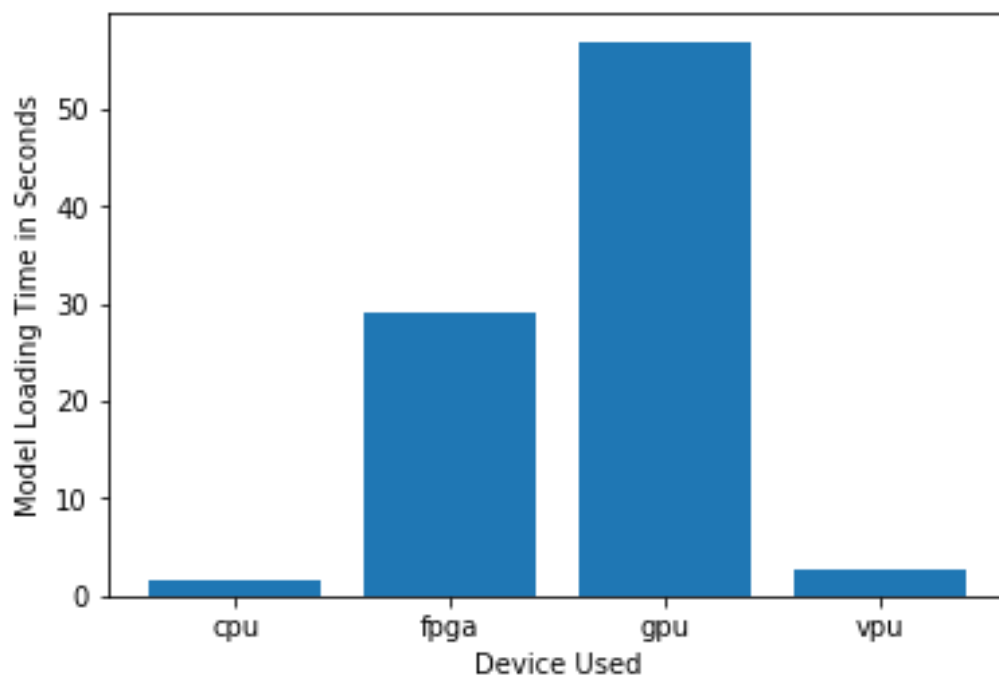
Requirement Observed (Include at least two.)	How does the chosen hardware meet this requirement?
<i>In this scenario, no additional processing power is available.</i>	<i>NCS2 is required ~1W for its power consumption and it is good fit in this scenario.</i>
<i>The budget of the client is fixed and very low.</i>	<i>NCS2 price is approximate \$100 and would fit in the price range.</i>

Queue Monitoring Requirements

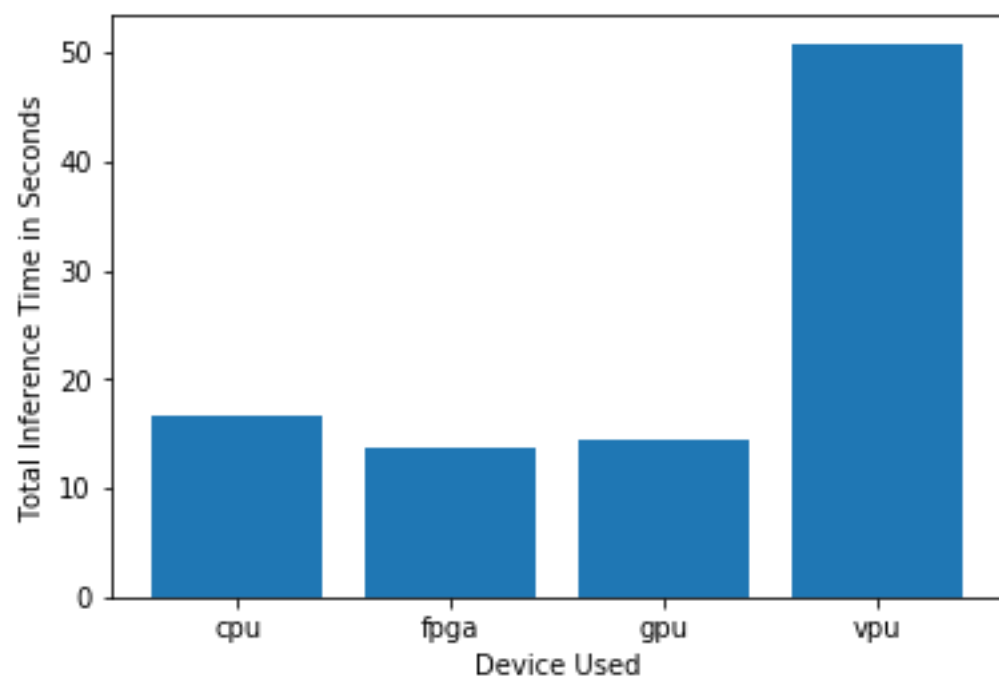
Maximum number of people in the queue	<i>Maximum number of the people in the queue is 5.</i>
Model precision chosen (FP32, FP16, or Int8)	<i>FP32 for CPU and FP16 for GPU, VPU, FPGA.</i>

Test Results

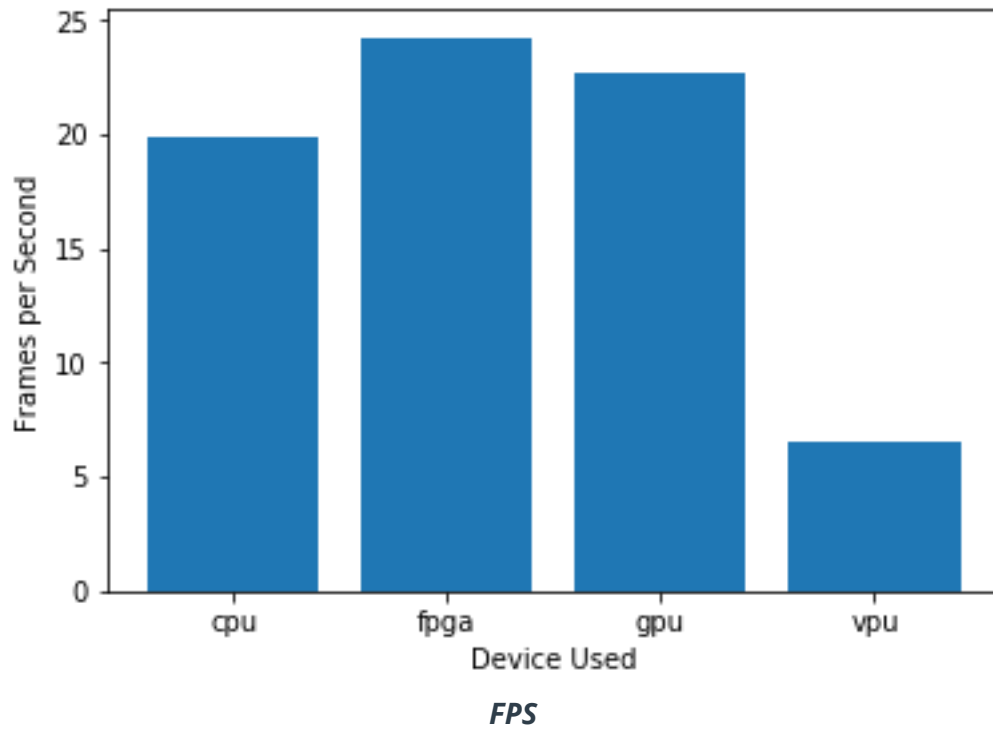
After you've tested your application on all four hardware types (CPU, IGPU, VPU, and FPGA), copy the matplotlib output showing the comparison into the spaces below. You should have three graphs (for model load time, inference time, and FPS).



Model Load Time



Inference Time



Final Hardware Recommendation

Now synthesize your points from above and provide a brief write-up describing why the chosen hardware is the best choice for this scenario. Be sure to discuss the client's requirements, the test results, and how these relate to one another (e.g., perhaps one of the devices performed better than the rest, but does not meet one of the client's requirements).

Write-up: Final Hardware Recommendation

For this scenario, GPU is better than any others device but it is not meet the client's requirements. So, the final hardware recommendation is GPU.