

Cloud Computing and Cloud Native Systems

ECE 573

Homework 1

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Solutions

1 Choice of VPS for comparison

The choice of VPS for the comparison has been chosen to be **Hostinger** and **Hostwinds**. In brief, as per resources¹, Hostinger is known for its best in class AI integration and Hostwinds is known for its guarantee for longest average uptime.

2 Question 1

What is the cost to rent a VPS there with minimum number of cores? How many cores are there and how much memory, storage, and network traffic are available? Is the cost per month or per year?

2.1 Hostinger

The minimum number of cores that hostinger VPS hosting service offers is 1 core of vCPU. It is understood that the options provided by Hostinger are unmanaged and the user bears the responsibility of managing the server environment. The following Table 1 provides further information with respect to the premium that is to be paid by the user during the period of initial sign up and the term post that as well.

Months	1 Month	12 Months	24 Months
Current Pricing	\$9.99/month	\$5.49/month	\$4.99/month
Price after the period	\$13.99/month	\$8.49/month	\$7.99/month

Table 1: Pricing of Hostinger for least number of cores.²

There are 4 options to select from the categorized list for the number of cores which are either 1 core of vCPU, 2 core vCPU, 4 core vCPU or 8 core vCPU. The combination of memory, storage and network traffic is listed in the Table 2.

¹ (Rayome & Gunn, 2024)

² This is the pricing mentioned by Hostinger in their website
(<https://cart.hostinger.com/pay/ddbb11a9-87bc-4c68-8e52-209c339ccfb1>) on 09/07/2024.

Feature Options	Option 1	Option 2	Option 3	Option 4
CPU	1 core vCPU	2 core vCPU	4 core vCPU	8 core vCPU
Memory	4 GB RAM	8 GB RAM	16 GB RAM	32 GB RAM
Storage	50 GB NVMe diskspace	100 GB NVMe diskspace	200 GB NVMe diskspace	400 GB NVMe diskspace
Network Traffic	4 TB bandwidth	8 TB bandwidth	16 TB bandwidth	32 TB bandwidth

Table 2: Categorical options of features available to the user to choose.

As mentioned in Table 1, the pricing options either for a month, 1 year or 2 years. However, the pricing scheme is based on the monthly cost to the user.

2.2 Hostwinds

The minimum number of cores that Hostwinds VPS hosting service offers is 1 core of CPU. There are options to select from the service provider to either for a managed hosting environment or an unmanaged hosting environment. There is also another level of customization that is allowed in choosing the platform in hosting the VPS system either on a Linux or a Windows operating system.

Type vs Term	1 Month	3 Months	6 Months	12 Months	24 Months	36 Months
Managed	-----\$8.24/month-----					
Unmanaged	-----\$4.99/month-----					

Table 3: Tabulated demonstration of Linux OS's monthly service costing vs the type of service opted for.³

Table 3 clearly elucidates that the service cost, to be paid monthly, remains the same irrespective of the term, however a managed service costs nearly twice to an unmanaged service.

Hostwinds offers a much extensive set of options to pick from for the hosting service, considering the factors such as Operating system (Windows or Linux). With an option to pick either managed or unmanaged service and the following are further options:

1. CPU
2. RAM
3. Storage
4. Bandwidth

³ Hostwinds's Pricing Model in their website (<https://clients.hostwinds.com/cart.php?a=view>) (requires account creation/login) on 09/07/2024.

Feature Options	CPU	RAM	Storage	Bandwidth	Price
Option 1	1 CPU	1 GB	30 GB	1 TB	\$4.99/month
Option 2	1 CPU	2 GB	50 GB	2 TB	\$9.99/month
Option 3	2 CPU	4 GB	75 GB	2 TB	\$18.99/month
Option 4	2 CPU	6 GB	100 GB	2 TB	\$28.99/month
Option 5	4 CPU	8 GB	150 GB	3 TB	\$38.99/month
Option 6	4 CPU	12 GB	200 GB	4 TB	\$49.99/month
Option 7	6 CPU	16 GB	300 GB	5 TB	\$76.99/month
Option 8	8 CPU	32 GB	400 GB	6 TB	\$124.99/month
Option 9	12 CPU	64 GB	500 GB	8 TB	\$214.99/month
Option 10	16 CPU	96 GB	750 GB	9 TB	\$328.99/month

Table 4: Extensive categorical options available for the user to choose from with individual pricing structure for each.

The pricing structure offers the user to choose commitment to the service from 1 month to 3 years, with the pricing calculated for each month of usage based on the specification chosen as demonstrated in Table 3 and Table 4.

3 Question 2

What is the cost to rent a VPS there with atleast 4 cores and 8 GB of memory? How many cores are there and how much memory, storage, and network traffic are available? Is the cost per month or per year?

3.1 Hostinger

3.1.1 Pricing options for set specifications

The cost to rent a VPS with Hostinger for the said specification is listed in Table 5. It is note that Hostinger offers a limited specifications set of options to choose from and generally sells its services as a packaged bundle.

Service Provider	Specifications	Cost at the start of service			Cost after service renewal		
		Option 1	Option 2	Option 3	Option 1	Option 2	Option 3
Hostinger	4 Core CPU & 16 GB memory	\$27.99/month (1 month plan)	\$11.99/month (12 months plan)	\$10.49/month (24 month plan)	\$29.99/month	\$24.99/month	\$22.99/month

Table 5: Cost of service from Hostinger for the chosen specification.⁴

⁴ Hostinger's pricing options from their website (<https://cart.hostinger.com/pay/9e668842-b04d-4752-b226-1e150b75a8d3>) as of 09/08/2024.

3.1.2 Overall specifications offered

Service Provider	CPU Cores	Memory	Storage	Network Traffic
Hostinger	4 Core CPU	16 GB	200 GB NVMe Diskspace	16 TB Bandwidth

Table 6: Options available for set specifications of the VPS service.

Table 6 shows the highlighted specifications namely CPU cores and Memory. For this set specification, the storage and Network Traffic is listed along with the same.

3.1.3 Monthly/Yearly cost to operate

As perviously mentioned in Table 5, the cost options provided by Hostinger for their VPS hosting service is charged monthly, however, the commitment offered to the user are either 1 month or 1 year or 2 years.

Service Provider vs Cost	Hostinger	Specifications: 4 Core CPU & 16 GB memory	
	Option 1	Option 2	Option 3
Cost at the start of service	\$27.99/month (1 month plan)	\$11.99/month (12 months plan)	\$10.49/month (24 month plan)
Overall Price for Inital Purchase	\$27.99	\$143.88	\$251.76
Cost after service renewal	\$29.99/month	\$24.99/month	\$22.99/month
Overall Price for Renewed Purchase	\$29.99	\$299.88	\$551.76

Table 7: Overall cost for set specification of Hostinger VPS service.⁴

Table 7 portrays the actual costs to be borne by the user during the time of initial purchase of the service along with the overall costs during the renewal of the service as well.

3.2 Hostwinds

3.2.1 Pricing options for set specifications

Table 8 portrays the pricing for the set specifications of the VPS service, set at 4 core CPU and 8 GB Memory.

Service Provider: Hostwinds	Specifications: 4 Core CPU & 8 GB Memory
Cost	
Option 1	\$38.99/month (1 month plan)
Option 2	\$38.99/month (3 months plan)
Option 3	\$38.99/month (6 months plan)
Option 4	\$38.99/month (12 months plan)
Option 5	\$38.99/month (24 months plan)
Option 6	\$38.99/month (36 months plan)

Table 8: Pricing Options provided by Hostwinds on their VPS service for a set specification.⁵

It is also to note from Table 8 that the pricing options provided by Hostwinds ensures that the price per month remains the same irrespective of the number of months of commitment that the user signs up for.

3.2.2 Overall specifications offered

Service Provider	CPU Cores	Memory	Storage	Network Bandwidth
Hostwinds	4 CoreCPU	8 GB	150 GB	3 TB

Table 9: Options available for set specifications of the server.

The data from Table 9 shows the list of specifications i.e. Storage and Network Bandwidth provided by the bundle from selecting the CPU cores and Memory option which is highlighted in the table.

3.2.3 Monthly/Yearly cost to operate

The pricing model for Hostwinds remains constant irrespective of the term commitment that the user agrees to purchase. However, the overall costing for the same is listed in Table 10.

⁵ Hostwinds pricing options from their website (<https://clients.hostwinds.com/cart.php?a=view>) as of 09/08/2024

Service Provider: Hostwinds	Specifications: 4 Core CPU & 8 GB Memory	
List of Options	Pricing	Overall operational cost to the user
Option 1	\$38.99/month (1 month plan)	\$38.99
Option 2	\$38.99/month (3 months plan)	\$116.97
Option 3	\$38.99/month (6 months plan)	\$233.94
Option 4	\$38.99/month (12 months plan)	\$467.88
Option 5	\$38.99/month (24 months plan)	\$935.76
Option 6	\$38.99/month (36 months plan)	\$1,403.64

Table 10: Overall cost of set specifications of a Hostwinds VPS service.⁵

4 Question 3

What if the network traffic goes beyond the limit?

If the network traffic goes beyond the limit, then the server would start scheduling requests and not responding to each of these requests immediately. This would hamper the performance of the server and thereby rendering a very slow and jittery performance.

Both Hostinger and Hostwinds offer a throttling of the resources upto a certain limit, post which a likely warning would be issued by both these services to handle the traffic more efficiently by optimizing the tasks performed on the hosted server.

Additionally, both Hostinger and Hostwinds offer the option of upgrading any specification at any point in time to enable the user to handle the high traffic more efficiently.

However, with Hostinger, it is to note that even though there is no downtime during this upgrade, the service often takes a brief period towards service adjustment. Hostwinds on the other hand, is generally seamless and adjusts its services at the client's area with very minimal downtime based on the service specifications that are to be changed.

Bibliography

Rayome, A. D., & Gunn, D. (2024, August 25). *Best VPN Hosting for 2024 - CNET*. Retrieved from CNET: <https://www.cnet.com/tech/services-and-software/best-vps-hosting/>