

Final Term Paper (Spring - 2020)
Cloud Computing

Name: shabban khan

ID #:12994

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Instructor: M Omer Rauf

Note: Attempt all Questions. Answers should be in your own words. Plagiarism will not be tolerated, if detected, it will lead to failure.

Question No. 1:

(20)

a. Explain in detail network and cloud-based storage.

Ans:

Network Storage:

Network Storage have different variations first people use File Servers For local storage then with advancement in technology people start using storage area networks (SAN). Now we use NAS servers for local storage.

Advantage:

- Local storage is fast way to store and access your data
- Data is Store it your place you can access data physical.
- No Internet connection is needed, and any mobile device data charges would not apply

Disadvantage:

- If your device is stolen (phone, laptop, etc.) your information on the local drive is lost or compromised.
- If your drive reaches capacity and is full, you have to purchase and installation of another drive for more space.

Cloud Based Storage:

Cloud based storage give the ability to access your data from any where in The world with internet access.

Advantage:

- You can access your data from any device, anywhere.
- Sharing your data is easier and you can give access to people you are collaborating on project.
- You can reduce hardware costs because you don't have to buy drives.

Disadvantage:

- You must have an Internet connection or a mobile device data plan to get to your files. If you have issues with service in your location, this should be a factor in your decision.

- Security of the data you store in the cloud may be not that good.

Question No. 2:

(20)

- a. Explain in detail web application and multitenant technology.

Ans:

WEB Application:

Web application are Software which we can access through Internet. As an example (Facebook, Gmail, Instagram) Web application are code in languages like (JavaScript, PHP, HTML,) which work in web browsers

How web application works:

- User send a request to the web server over the Internet, using web browser
- Web server forwards this request to web application server which user want to access
- server process user requited ask
- server sends results back to user
- Web server responds back to the client with the requested information that then appears on the user's display

Where everyone can access the same version, with no compatibility issues and the software is not installed on the hard drive so it eliminates space limitations

Multitenant Technology:

Multi-tenancy is architecture which allows one instance of a software application serves multiple customers. every customer is tenant. Tenants the ability to customize some section of the application. As an example, the color of the user interface but tenant is not allowed to customize the application's code.

Advantages:

- It's less expensive as compared to other tenant hosting architectures.
- An offering of pay-for-what-you-need pricing models.
- The architecture is easily scalable.

Disadvantages:

- Multi tenancy is more complex than single-tenancy.
- Multi-tenant apps need stricter authentication and access controls for security.
- Downtime may also be an issue depending on the provider.

- b. Explain in detail cloud security threats.

Ans:

DATA breaches:

The risk of a data breach is not unique to cloud computing but its consistently ranks as a top concern for cloud customers

DATA Loss with no backups:

Accident or catastrophe can lead to permanent loss of customer data unless there are measures in place to back up that data

Insider threats:

Research report noted 50% of Organizations surveyed confirmed insider attacks against their organizations

DDoS attacks:

Distributed denial of service attacks poses significant risks to cloud customer and providers including lengthy services outages reputational damage and exposure to customer data

Insecure API's:

As the public "front door" to your application, an API is likely to be the initial entry point for attackers. Use pen testing to uncover security weaknesses in the APIs you use.

Exploits:

The multitenancy nature of the cloud (where customers share computing resources) means shared memory and resources may create new attack surfaces for malicious actors.

Account hijacking:

Using stolen credentials, attackers may gain access to critical areas of cloud computing services, compromising the confidentiality, integrity, and availability of those services.

Advanced persistent threats:

Many advanced persistent threat groups not only target cloud environments but use public cloud services to conduct their attacks.

Spectre & meltdowns:

Attackers can exploit Meltdown to view data on virtual servers hosted on the same hardware, potentially disastrous for cloud computing hosts. Spectre is even worse harder to exploit, but harder to fix too.

Question No. 3:

(10)

a. Briefly describe following.

a. Advantages and disadvantages of cloud computing.

Ans:

Advantage

- **Cost saving**

You don't have to pay for bills not need to buy new hardware every time no maintenance cost

- **High speed**

Cloud computer have multiple core in one computer you are only limited to internet

- **Mobility**

YOU can access the it from any where in the world. All of the computing can be access from any where

- **Unlimited storage capacity**

You are not limited to certain capacity you can have as much capacity you want

Disadvantage:

- **Internet dependence**

You can not access you file and computing without internet

- **Security**

Attacks are growing substantially every year it require services provider to Spend more money

- **Technical issues**

- **Limited control**

b. Collaborative meeting in cloud.

Ans:

Cloud collaboration meeting is secure collaborative environment where colleagues can access, share work. you can,

Features:

- Universal user access
- IP voice and video
- Instant messaging
- Group video conferencing