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Unit 4 Lab 1

Planning a Backup Solution

Objective

* Based on the business scenario, plan an appropriate backup solution.

Background / Preparation

You have been asked to plan and propose a backup solution for a small business customer of the ISP for which you work. Recently, a thunderstorm caused the loss of a databank on a drive used by the VP’s secretary. The small business is concerned about more loss of valuable company data. They want to ensure they have the quickest data recovery plan available built into the solution. The customer is willing to take on all local administrative tasks to monitor and manage the local backup system.

Current data storage location and amounts:

Server Room:Server 1: 50GB

Server Room:Server 2: 100GB

Accounting Dept: Server 3: 10GB

Based on their current growth in the amount of data, the company anticipates 10% growth in total volume of data each year.

The company has decided that they would like a backup solution that allows them to have 4 weeks worth of daily incremental backups, a monthly full backup and an additional 12 months worth of monthly archives. They would also like a solution that will last 5 years without outgrowing its capacity.

**NOTE:** You can assume that the capacity of the backup media needs to accommodate all the data in one unit.

Step 1: Choose the media and backup hardware

Based on the media types described in this course, use the Internet to identify a suitable media with the capacity that meets the requirements of the business. You are also required to investigate the cost of purchasing additional hardware, if required, and the price of the media. Also based on the history requirements, identify the number of backup media. Enter your recommendations in the table below.

**NOTE:** The company’s normal business hours are Monday through Friday, 8:00 a.m. to 6:00 p.m., but employees can come in as early as 7:00 a.m. and stay until as late as 8:00 p.m. Therefore, the company has decided that backups cannot start until after 10:00 p.m. and must be completed before 6:00 a.m. The equipment and backup media selected must be fast enough to back up all data from all servers within this time period.

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| --- | --- | --- |
| **Equipment / Media** | **Price** | **Quantity** |
| **4 TB WD My Cloud Net Storage** | $154.99 | 1 to 3 |
| Dell PowerEdge T30 Business Mini Tower Server System - Intel Quad-Core Xeon E3-1225 v5 8M Cache, 16GB UDIMM RAM, 1TB HDD, DVD+/-RW, HDMI, No Operating System - Black | $450.00 | 1 to 3 |
| **Microsoft Azure Cloud Storage** | $0.002 /GB per month  $21.60 - $28.80 after 5 years | 1 |

Step 2: Design a backup plan and procedure

Now that you have decided on the backup media, it is time to assemble the backup proposal and procedure for the company to manage their backup system. You need to decide what backup type is most appropriate for the business and how the business should schedule the swapping of the media. The business needs to have a procedure developed that is simple and easy to follow. Media needs to be labeled properly so the customer knows what is backed up on each day. Be sure to address the customer’s needs in your proposed backup plan. Also identify any other open issues or questions that may still need to be asked to achieve a good solution for the customer. Describe your plan in the following steps:

1. **Describe the equipment recommended and explain why you selected this equipment:**
   1. **The My Cloud personal storage:** *is very good personal cloud storage that can also potentially be used for small business. It contains 4 TB storage & has gigabyte network capabilities. Also, it can be attached to any PC/Server or Router to act as a network storage. It contains has software capabilities to be accessible through the internet like a cloud storage, or it can physically be altered to wipe its original software installation & act as an external SSD hard drive. It is extremely cheap as a physical media, 1 to 3 units of these devices can be installed to separate each task, if needed.*
   2. **The Dell Power Tower:** *is a relatively cheap server, has good processing and memory for a server. Comes with a 1 TB storage, can be configured with Raid for multi-segment back-ups. Also, network interface may-be gigabyte speed or can be upgraded with ease. This will act as a traditional server with good capabilities. It is, however, the most expensive solution.*
   3. **Microsoft Azure Cloud:** *This is the cheapest solution, costing less than $30 for 5 years. Data integrity, is also a good benefit. May also offer good management system and security. Only downside, is that this is not a local management system & may require training to understand but it is a good disaster recovery solution and maybe the most efficient and reliable solution.*
2. **Describe location of the equipment in the network and the network link speeds to the equipment:**
3. ***My Cloud:*** *Device can be attached to any server/pc or router through a USB 3.0 port. Supports gigabyte-network link speeds.*
4. ***Dell Tower:*** *Server is compatible and upgradable to the most recent ethernet interface cards & contains all the necessary requirements to implement the most logical & possibly automated self-serving solution.*
5. ***Azure:*** *Cheapest solution with the network speed that is only limited by the ISP facing WAN internet itself.*

**Describe the backup schedule:**

*Company has to have 3 back up tasks. 1 back up will take place every 4 weeks,*

*between* ***10 pm to 5 or 6 am***

*There will be a monthly back up that should take place every 30 days at the same time above.*

*There will be a 12 month back up that should take place yearly. This schedule may take time should run over the weekend, after casual business hours.*

**Describe the backup and restore procedure, including: what kind of backup (Normal, Differential, Incremental), how it will be tested, what kind of maintenance the equipment requires. How tapes will be labeled and where tapes that have been backed up will be stored. When backups need to be restored, what is the specific procedure for a file, a folder, a drive (use extra sheets it necessary)**

*Each computer on the network will be scheduled with the tasks above. The back-up will consist of the entire system image & labeled with the timestamp of the backup and computer name. The backups will be organized by file names, not necessarily storage tapes and media.*

*The* ***4 weekly*** *back up task will be done Incrementally*

*The* ***monthly*** *back up task will be done differentially*

*The* ***yearly*** *back up task will be a full-back up*

*Maintenance, should not be required other than normal system-administration checkup on server health (CPU utilization/ Network Utilization & Storage space health). In the new-school way of doing things, we like to implement the least physical maintenance as possible.*