Spectrum Protect 8.12 - TS619

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> ⚠ **Attention**
>
> This content should provide a detailed and structured learning experience for Eric, enhancing his understanding and practical skills in IBM Spectrum Protect.

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Day 3 of 5

Components

- **DB2**: Integral database for IBM Spectrum Protect, storing all the metadata about backup, archive, and space management data.
- **Recovery logs**: Used to track changes and facilitate recovery processes. Includes:
  - Active Logs
  - Archive Logs (x3 size of Active Logs)
- **User Interfaces**:
  - **Operations Center (OC)**
  - **Administrative Command Line Interface (dsmadmc)**
  - **Backup-Archive Client (BA Client)**
  - **Command Line Interface (dsmc/j)**
- **Server or Instance**: The main control unit in IBM Spectrum Protect, managing client operations.
- **Client**: Systems or applications being protected by Spectrum Protect.
- **Storage Pools (STG's) and Libraries**: Define where backup data is stored, such as LTO (Linear Tape-Open) libraries.
- **Policies**: Rules defining data retention, backup schedules, and management classes.
- **Scheduler**: Manages backup and restore operations, available both at the server and client levels.

> **Example Activity:**
>
> Configure a backup policy and assign it to a test client. Use `dsmc` commands to initiate backups and verify data in the storage pools.

Disaster Recovery Manager

- **7 Disaster Recovery Tiers**: Strategies ranging from simple backups to complete, geographically dispersed failover setups.
- **Disaster Recovery Manager & Plan**: Requires a license (Tee).
- **SNIA (Storage Network Industry Association)**: Provides best practices and standards for storage management.

> **Example Exercise: Create a disaster recovery plan for a small business. Outline the steps and necessary tools for each of the 7 tiers.**

Security and Encryption

- **GS8kit**: Hardware security module for managing encryption keys.
- **iKEYMAN**: Utility for managing digital certificates and keys.
- **IBM Key Lifecycle Manager (IKLM)**: Centralized management of encryption keys.
- **IBM Security Verify Access**: Comprehensive access management solution.
  - Introduction to IBM Security Verify Access - IBM Documentation

Example Activity:

Set up and configure iKEYMAN to create a self-signed certificate. Use this certificate in Spectrum Protect for secure communication.

Product Overview

- **Standard Edition**: Basic features for small to mid-sized environments.
- **Extended Edition**: Additional features for large, complex environments.

Exercise: Login to the administrative command-line interface (`dsmadmc`) and register a license:

```
dsmadmc

reg lic tee.lic
```

Configuration Options

- **dsm.sys**: Configuration file for UNIX/Linux clients, detailing server communication settings.
- **dsm.opt**: Options file read from bottom to top, containing client options.
- **dsmsev.opt**: Server options file.
- **OPT**: Custom options tailored to specific client requirements.
- **SETOPT**: Commands to set options dynamically.

Example Activity:

Edit the `dsm.opt` file to include compression and encryption settings. Test the settings by performing a backup.

Macros

- Find and create useful scripts for Eric to streamline daily admin tasks.
- **Hub/Spoke Planning**: Design and implement a hub-and-spoke topology for data backup and recovery. Explore best practices and use cases.

Example Exercise:

Write a script that automates daily backups, including error checking and logging.

Macro 1: Weekly Backup Status Report

This macro generates a detailed report of the backup status for all clients, which can be scheduled to run weekly. It will output the results to a text file for review.

```
# Weekly Backup Status Report Macro
macro weekly_backup_status_report

# Set the output file name with the current date
define var report_file "backup_status_report_$(date +%Y-%m-%d).txt"

# Generate the report
select \
    cast(node_name as varchar(30)) as Node_Name, \
    cast(backup_end as timestamp) as Backup_End, \
    cast(backup_type as varchar(10)) as Backup_Type, \
    cast(total_mb as bigint) as Total_MB, \
    cast(backup_status as varchar(20)) as Backup_Status \
from backups \
where date(backup_end) >= current_date - 7 \
order by Backup_End desc \
outputfile=$report_file
```

```
# Print completion message
echo "Weekly Backup Status Report has been generated and saved to
$report_file."

endmacro
```

Usage:

Schedule this macro to run weekly using a cron job or any other scheduling tool. The report file will contain the status of backups performed in the last week.

Macro 2: Weekly Storage Pool Utilization Report

This macro generates a report showing the utilization of storage pools, helping to monitor and manage storage resources effectively.

```
# Weekly Storage Pool Utilization Report Macro
macro weekly_stgpool_utilization_report

# Set the output file name with the current date
define var report_file "stgpool_utilization_report_$(date +%Y-%m-%d).txt"

# Generate the report
select \
    cast(stgpool_name as varchar(30)) as Stgpool_Name, \
    cast(total_mb as bigint) as Total_MB, \
    cast(used_mb as bigint) as Used_MB, \
    cast((used_mb*100/total_mb) as decimal(5,2)) as Utilization_Percentage \
from stgpools \
order by Utilization_Percentage desc \
outputfile=$report_file

# Print completion message
echo "Weekly Storage Pool Utilization Report has been generated and saved to
$report_file."

endmacro
```

Usage:

Schedule this macro to run weekly using a cron job or any other scheduling tool. The report file will contain detailed information about the utilization of storage pools.

Scheduling the Macros

To schedule these macros to run weekly, you can create a cron job on a UNIX/Linux system. Here's an example of how to set up a cron job:

```
# Open the cron file
crontab -e

# Add the following lines to schedule the macros (adjust the paths as
necessary)
# Run the backup status report every Monday at 2 AM
0 2 * * 1 /path/to/dsmadmc -id=admin -password=adminpassword macro
weekly_backup_status_report

# Run the storage pool utilization report every Monday at 3 AM
0 3 * * 1 /path/to/dsmadmc -id=admin -password=adminpassword macro
weekly_stgpool_utilization_report
```

Ensure that the paths to `dsmadmc` and the macro files are correct. These macros will help Eric efficiently monitor the health and utilization of the IBM Spectrum Protect environment.

Add-ons

- **CMS (Content Management System)**
- **Remote Web Client**: Interface for remote administration.
- **TSM Client Acceptor**: Service that handles client sessions.
- **CAD (Client Acceptor Daemon)**: Manages client connections and sessions.

Example Activity:

Install and configure the Remote Web Client. Use it to perform basic administrative tasks.