Getting Started Tutorial

IBM Spectrum Protect Plus Trial for VMware vSphere

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Introduction

IBM® Spectrum Protect™ Plus (SPP) provides data protection for virtual machines in data centers using VMware vSphere and Microsoft Hyper-V hypervisor environments.

In this brief tutorial, you explore the procedures for:
- Installing the SPP product
- Configuring options
- Performing backup and recovery operations

This tutorial will focus on implementing IBM Spectrum Protect Plus in a VMware vSphere environment.

Before you begin

NOTE: *This free trial version of Spectrum Protect Plus has been made available with limited storage capacity and disabled configuration options. It is not supported nor intended to be suitable as a production environment.*

You are strongly urged to consider using a test environment for implementing the SPP Trial package. For example, this tutorial document was created using these resources:

- A host machine for running the **VMware vSphere 6.5** (and above) hypervisor (ESXi).
- A Microsoft Windows Server for running the **VMware vCenter Server** management console.
- Installation ISO files for creating a few **Windows** or **Linux** (or both) virtual machines in vSphere. These VMs are used for performing the backup and recovery operations presented in this tutorial.
- The IBM Spectrum Protect Plus Trial package downloaded from the SPP Trial web page:

https://www-01.ibm.com/marketing/iwm/dre/downloadUrx?source=swerpzsw-protectplus-3
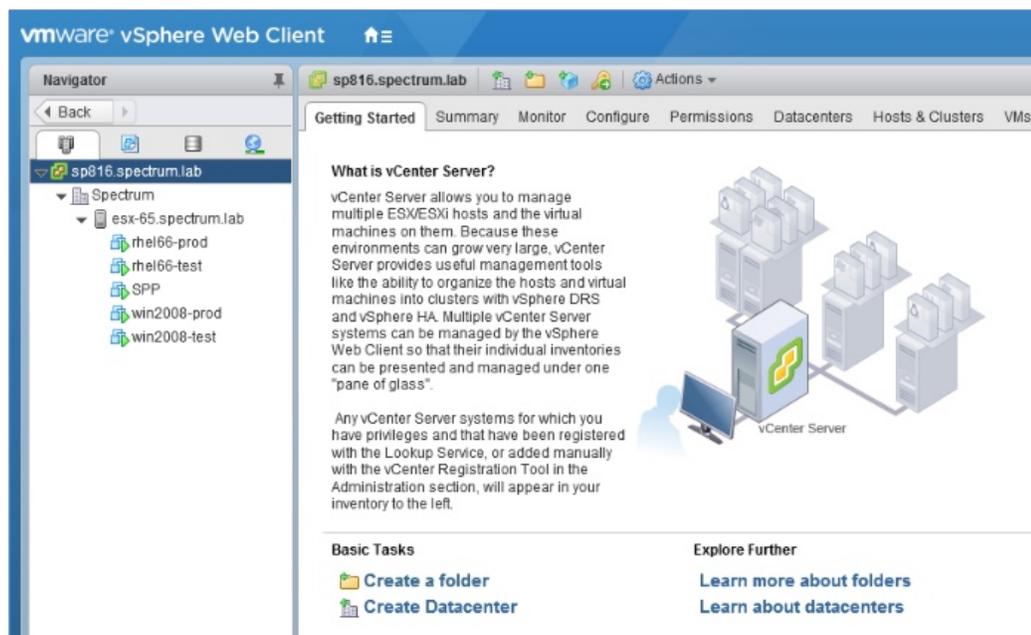
This tutorial was constructed using a VMware vCenter Server test environment similar to that shown above. Your environment will likely vary from this, so be prepared to make the appropriate substitutions for host names, resources, and properties as you proceed.

Once you have acquired the resources and have your test environment running, begin with **Exercise 1**.

If you choose to forgo building your own demo environment and skip the installation exercise, you can begin with **Exercise 2** and access the online demo using this URL:

https://spp.tsm.ibmserviceengage.com/demo/

Installation in VMware vSphere

Exercise 1: Installation

IBM Spectrum Protect Plus for VMware is delivered as an Open Virtual Appliance (OVA) file. To install the product, you use the **VMware vSphere Web Client** to deploy the appliance into the data center.
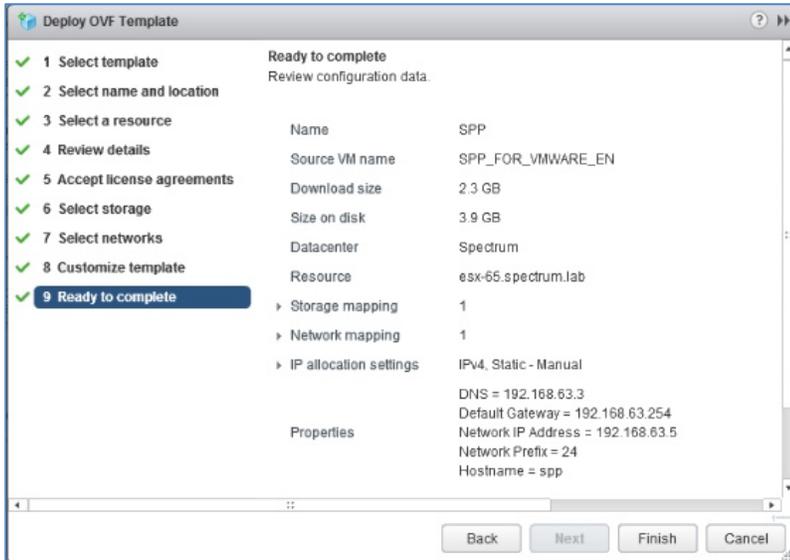
1. In the vSphere **Navigator** panel, right-click the data center to expand the **Actions** menu.

2. Click **Deploy OVF Template**.
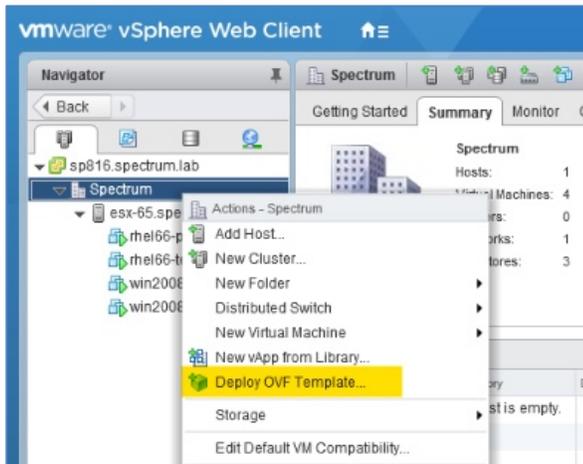
The installation wizard will guide you through the required actions.

You will be prompted to:

3. Select the OVA template file.

4. Enter a name and select a deployment location for the appliance.

5. Select a compute resource.

6. Review the template details.

7. Accept the license agreements.

8. Select a storage resource.

9. Select a destination network.

10. Customize the template.

11. Review the configuration data and begin the deployment.

12. In the **Recent Tasks** panel, locate the **Deploy OVF template** task and observe the progress to verify that it completes successfully.

Note: It may take several minutes for your deployment to complete.

13. In the **vSphere Navigator** panel, select the new Spectrum Protect Plus appliance and open the **Summary** tab.

14. Click the **Power On** icon to start the appliance.
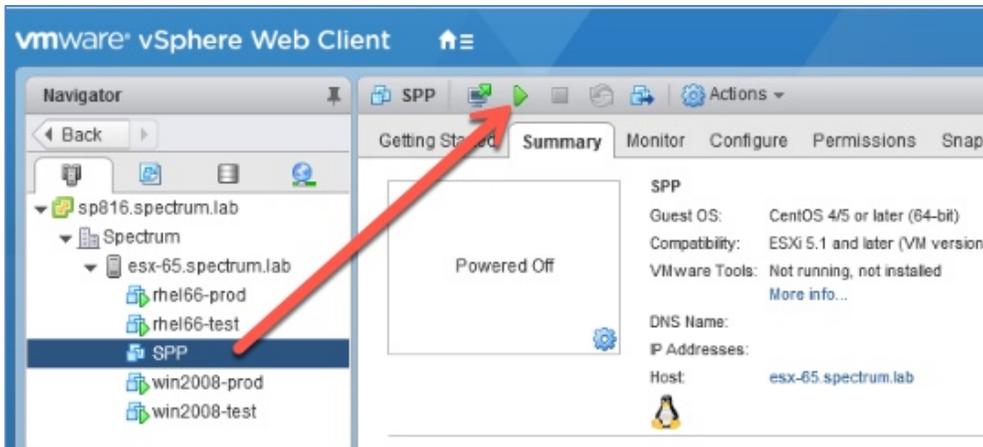
15. Click the **Console** icon to open a console terminal in a new browser tab.

16. If prompted to choose a default console, select **Web Console**.

17. Log in using the default credentials *serveradmin* and *sppDP758-SysXyz*.

18. Before continuing, you must provide a new serveradmin password (e.g., *ibmSPP-10.1.5-Trial*).

```
CentOS Linux 7 (Core)
Kernel 3.10.0-862.el7.x86_64 on an x86_64

spp login: serveradmin
Password:
You are required to change your password immediately (root enforced)
Changing password for serveradmin.
(current) UNIX password:
New password:
Retype new password:
-----------------------------------------------------------------
   IBM Spectrum Protect Plus  10.1.3 build [ 237 ]
-----------------------------------------------------------------
[serveradmin@spp ~]$ _
```

19. Once complete, close the console browser tab and continue with Exercise 2.

Exercise 2: Login to Spectrum Protect Plus

Open a new browser tab and enter the URL for the Spectrum Protect Plus interface
(e.g., **https://192.168.63.5**).

1. If a security warning appears, accept the risk and continue.
   (The exact method varies by browser.)

2. Wait for the login screen. This can take a few minutes.

3. On the login screen, enter the default GUI credentials *admin* and *password*.
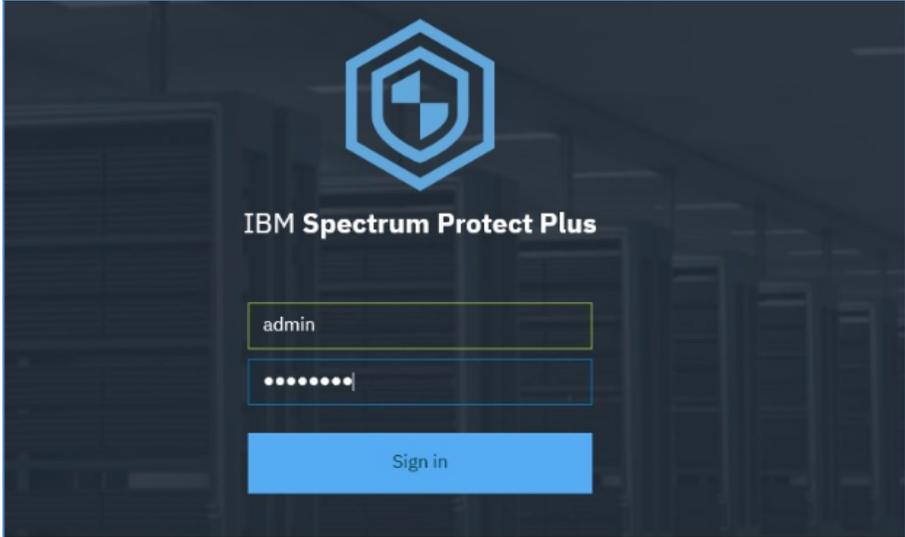
4. You must update your credentials by providing a new username and password (e.g., **sppadmin** and *ibmSPP-10.1.5-Trial*).


5. When the Initialize **Storage** dialog is displayed, click **Initialize without encryption**.

6. **Close** the **Quick Start** dialog.

7. Verify that the IBM Spectrum Protect **Dashboard** is displayed as expected.

Exercise 3: Dashboard

Click the **>** symbol near the upper left corner of the window to expand the navigation panel. This will display six top-level categories for performing daily administration and configuration tasks:

- Dashboard
- Jobs and Operations
- Manage Protection
- System Configuration
- Reports and Logs
- Accounts

Spend a few minutes exploring and becoming familiar with the user interface and dashboard.
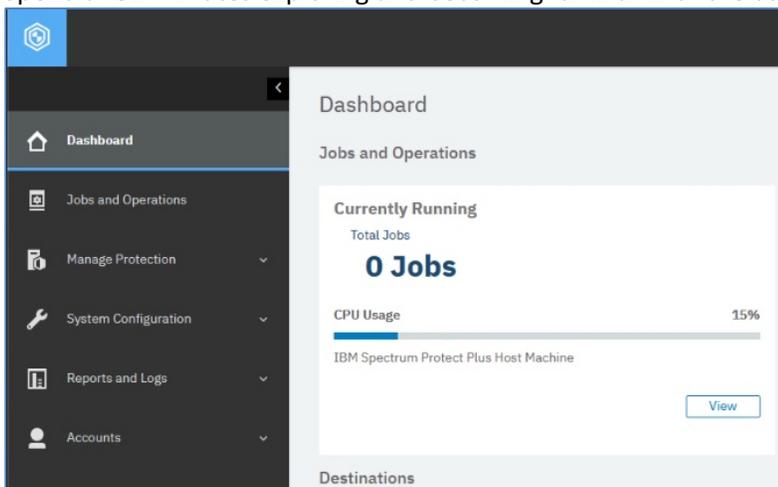
Exercise 4: Register a vCenter Server

Now you will register the vCenter Server to the VMware hypervisor.

1. From the **Dashboard**, select **Manage Protection** > **Hypervisors** > **VMware**.

2. Click the **Manage vCenter** button.

3. Click **Add vCenter**

4. Enter the hostname, credentials, and port number needed to connect to the vCenter Server in your test environment.

Note: There are certain **Virtual Machine Privileges** to consider when selecting the appropriate account. These virtual machine privileges are fully detailed in the **Installation and User's Guide**.

5. Specify settings appropriate to your environment for **Port Number** and **SSL** requirements. Click **Save**.
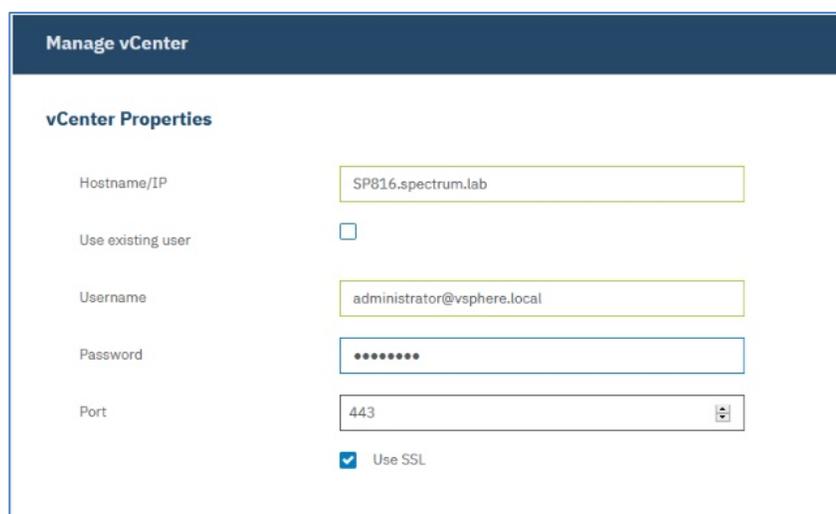
6. Click **OK** to close the successful registration notification.

SLA and Backup Operations

Understanding the IBM Spectrum Protect Plus SLA policy model

IBM Spectrum Protect Plus uses an innovative but simple concept called **SLA Policy** to easily configure frequency and retention requirements for data protection. SLA policies are applied to your backup operations.

There are three default policies that have SLA parameters pre-configured:
- Gold
- Silver
- Bronze

The difference between these default SLA policies is determined by **Frequency** and **Retention:**
- Frequency indicates how often you would like the backup operation to run.
- Retention indicates how long you would like to keep the backup.

In addition to the main policy, you can also configure a Replication Policy which can optionally have its own Frequency and Retention settings, and designate a remote Target Site. You can also choose to offload protected data to Cloud storage.

To prepare a backup operation, you must first either:
- Select of these pre-defined SLA policies and apply it, or
- Modify an existing SLA policy and apply it, or
- Create a new SLA policy and apply it.

Note that you can apply your SLA policies:
- To an entire Datacenter, or
- To individual VMs

For this guide, you will apply the SLA policies to individual VMs.

In a production data center, you might have hundreds of virtual machines. Defining a separate backup policy for each individual VM would be a challenging task. However, the SLA Policy model, along with the Search and Sort features of the SPP interface, allows you to group VMs with similar data protection requirements and quickly apply an appropriate policy to multiple VMs at once to meet your recovery objectives.

The SLA policies are fully detailed in the **Installation and User's Guide**. You can also learn more about Service Level Agreements by watching the *Getting Started with SLAs* video:

https://www.youtube.com/watch?v=8sN1aVWHe7I&feature=youtu.be

Continue with **Exercise 5** to apply one of the default policies.

Exercise 5: Apply an SLA Policy and Run a Backup Operation

1. Still on the **Manage vCenter** page, scroll down to the **VMware Backup** region.

2. The vCenter Server that you just registered should be displayed. (You may need to click the **Refresh** icon.) Expand the vCenter Server folder to reveal the datacenters that it manages.

3. Click the **datacenter** to reveal the individual VMs within it.

4. Use the selection boxes to choose two VMs (e.g., **rhel66-test** and **win2008-test**), then click **Select SLA Policy**.

5. Select the **Demo** policy and click **Save**.

Note that the **VMware Backup** table, the **SLA Policy** column now shows that the SLAs have been applied to the VMs you selected.

6. Select one of the VMs that does *not* have a policy applied. Notice that the **Run** button remains greyed out. Note that a VM must have an SLA Policy applied before it can be backed up.
   Clear the selection box.

Note that in a production environment there are three ways to start a backup operation:
- Wait for the scheduled date and time specified in the SLA Policy.
- In the SLA **Policy Status** region, select a policy, expand the **Actions** menu, and click **Start**.
- In the **VMware Backup** region, select an individual VM and click **Run**.

7. In the **SLA Policy Status** region, identify the **Demo** policy, expand the **Actions** menu, and click **Start**.

8. Expand the **Demo** policy that is now running.

9. Expand the backup job as needed to display additional detail and monitor the progress of the operation.

Because the initial backup of a VM is a *Full* backup, the operation may take ten to 15 minutes to complete. Subsequent backups are *Incremental* backups, and complete much faster.

Consider watching the *Getting Started with SLAs* video while you wait:

https://www.youtube.com/watch?v=8sN1aVWHe7I&feature=youtu.be

Note: In a production environment, you would typically let the backup operations run according to the schedules defined in the SLA Policies. However, you always have the option to perform a manual backup operation as you have just done here.

10. When the Full backup operations have completed, repeat Step 7 above to create additional recovery points. These will be Incremental backup operations and will complete quickly.

Recovery Operations

Exercise 6: Restoring Virtual Machines

In a production environment with hundreds of virtual machines, you can use the search and filter options to rapidly identify the recovery points needed for restoring a specific VM.

You can also choose to restore from a Primary or Secondary site, or from a Cloud repository.

For this demo, with only a few recovery points, you can simply browse the primary repository.

1. From the Spectrum Protect Plus **Dashboard**, select **Manage Protection** > **Hypervisors** > **VMware**.
2. Expand the **vCenter Server** and **Datacenter**, then select a VM (e.g., **win2008-test**) to reveal the available **Restore Points**.

3. Identify the most recent restore point and click the **Select** icon to add it to the **Restore List**.

4. Click the **Options** button and scroll down to review the available selections.

There are three **Restore Types** to choose from:

- **Test**
  This type creates temporary virtual machines for development, testing, snapshot verification, and disaster recovery validation on a scheduled, repeatable basis without affecting production environments. Test machines are kept running as long as needed to complete testing and verification.

- **Production**
  This type enables disaster recovery at the local site from primary storage or a remote disaster recovery site replacing the original machine images with recovered images. All configurations are carried over as part of the recovery including names and identifiers and all copy data jobs associated with the virtual machine continue to run.

- **Clone**
  This type creates copies of virtual machines for use cases requiring permit or long-running copies for data mining or duplication of a test environment in potentially a fenced network. Virtual machines created through clone mode are also given unique names and identifiers to avoid conflicts within your production environment.

5. **IN A TEST ENVIRONMENT ONLY** simulate a disaster by returning to the **vSphere Web Client** and delete the original VM (e.g., **win2008-test**) corresponding to the chosen restore point. Return to the **SPP** interface.

6. Select **Production** as the Restore Type and scroll down to review the **Destination** options.
   There are three **Destinations** to choose from:

   - **Original ESX Host or Cluster**

   - **Alternate ESX Host or Cluster**
     If you select **Alternate ESX Host or Cluster**, a menu of other vCenters in your virtual environment will be presented, allowing you to select the alternate destination.

   - **ESX host if vCenter is down**

7. Select **Original ESX Host or Cluster** as the destination, and review the **Network Settings** options.

The options for **Network Settings** are:

- **Allow system to define IP configuration**

- **Use original IP configuration**

8. Select **Use original IP configuration**.

9. Take a minute to review the remaining options for restoring VMs, then click **Save**.

10. Click the **Manage Jobs** button to open the **Manage Restore Jobs** panel. Click the **Plus** symbol in the lower left corner of the panel to create a **Restore Job**.

Note that you can give the restore job a **Name**, and define a **Frequency** and **Start Time** to automate a restore operation that needs to be run repeatedly.

11. Click the **Restore** button and click **Yes** to confirm that you want to run the restore job.

12. Click **OK** to close the **Info** window.

13. Note that the **Restore List** is no longer populated.

14. Scroll down to the **Job Sessions** panel to see the status of the restore job. It will initially indicate **Running**, and after several minutes the status will change to **Resource Active**, indicating that the VM is ready for use.

15. When the VM is ready for use, locate it in the **Active Resources** panel.

When a resource is active and listed in the Active Resources panel, the **Actions** menu will be available. There are three **Actions** to choose from:

- **Cleanup**
  This action destroys the virtual machine and cleans up all associated resources.

- **Move to Production** (vMotion)
  This action migrates the virtual machine through vMotion to the data store and the virtual network defined as the production network.

- **Clone** (vMotion)
  This action migrates the virtual machine through vMotion to the data store and the virtual network defined as the test network.

16. For this demo, select **Move to Production.**

17. In the **Job Sessions** panel, you can expand the running job and to view additional details and monitor the progress of the job.

18. When the job is complete, return the **vSphere Web Client** window and verify that you deleted in Step 5 has now been recovered.
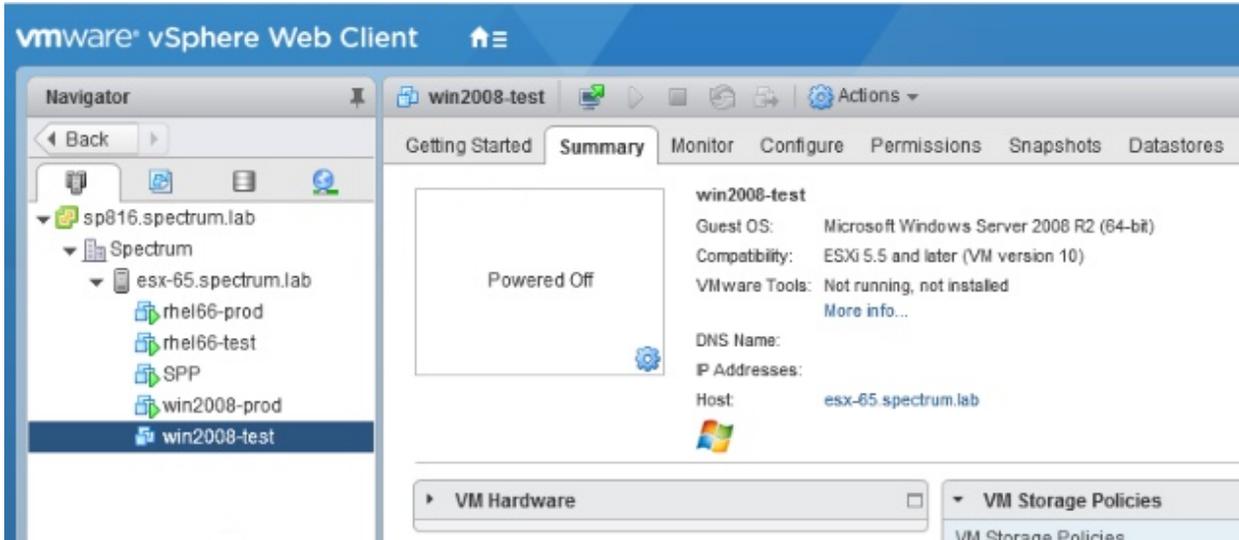
This concludes the IBM Spectrum Protect Plus Trial *Getting Started Tutorial* for VMware vSphere.

In this brief tutorial, you explored the procedures for:
- Installing the SPP product
- Configuring options
- Performing backup and recovery operations

Additional Resources

To get the most out of your trial period, refer to these IBM® Spectrum Protect Plus Getting Started videos for common tasks like setting up your hypervisor, completing your first data backup and data restore operations, utilizing reporting functions, and more:

https://www.youtube.com/watch?v=1WFvHC1BU8s&list=PLPFnRaszIT1vz32NFPs6X8BJWqgJkKpOY&index=12

You are welcome to join our Slack Workspace where you can interact with an SME to help get you started:

https://help-invite.ibm.com/spp/auth/ibmid

The URL will present a brief form to generate your invitation to Slack. You'll receive an email with information on how to connect to slack, and once you are there, you can ask your questions.

Would you like more product information? Return to the IBM® Spectrum Protect™ Plus page and click **'Let's Talk'** to chat with an expert:

https://www.ibm.com/us-en/marketplace/ibm-spectrum-protect-plus