Lab 3 – Image Operations

AWS Systems Manager – After resources are provisioned, keeping them secure and compliant can be a seemingly large task for administrators and often takes many hours to scan, stage, and remediate patches for persistent instances in an environment. In addition, third-party tools are often expensive and complicated to manage to help ensure workloads are being patched as required by an established security policy. As a free tool provided by AWS, Systems Manager provides a centralized interface to accomplish a variety of tasks, including automation of tasks, viewing infrastructure performance and configuration and even application management. AWS Systems Manager can also be used to patch instances throughout your AWS infrastructure with a single interface.

Goal – Using an EC2 instance deployed in the initial lab, use AWS Systems Manager to create a maintenance window, assign the instance a baseline for patches, and scan the instance for compliance against the patch baseline.

Prerequisites - Access to the AWS VPC console with an IAM user with appropriate permissions for EC2 and AWS Systems Manager.

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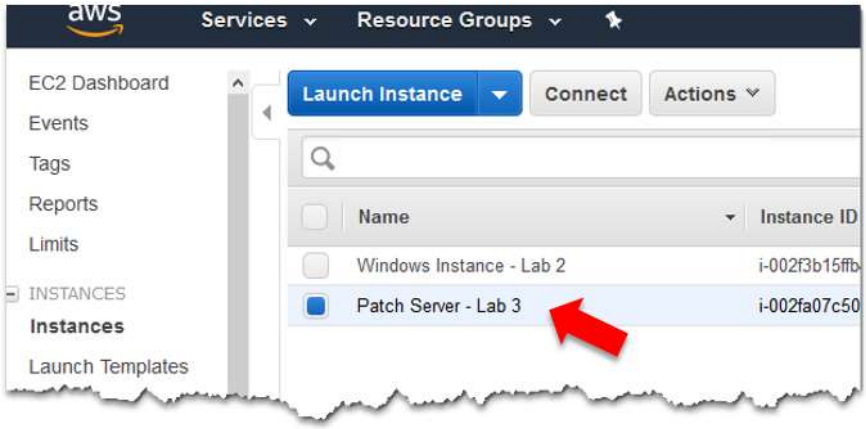
1. Navigate the **EC2** console and select Instances from the left menu pane. Select the **Patch Server – Lab 3** instance:



2. From the **Actions** menu, choose **Instance Settings → Add/Edit Tags**.

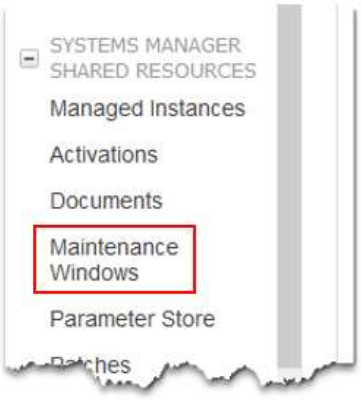
   Note: *You will see several tags attached to the instance already, some that were created in the CloudFormation template and some that CloudFormation will automatically append to any resource it creates.*

3. Click the **Create Tag** button and add the following tag:

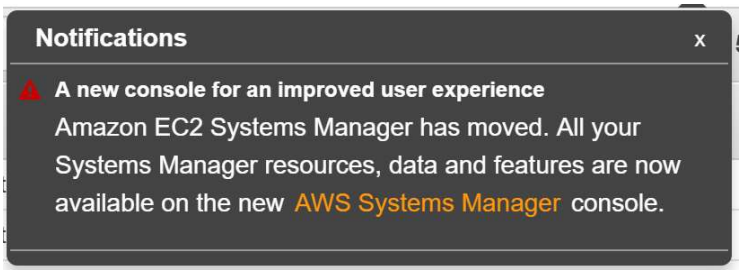
   - **Key:** Patch Group (must include a space)
   - **Value:** Group1

4. Click the **Save** button to apply the new tag.

5. Navigate to the EC2 console and select **Maintenance Windows** under the Systems Manager Shared Resources section (located at the bottom left of the navigation pane).



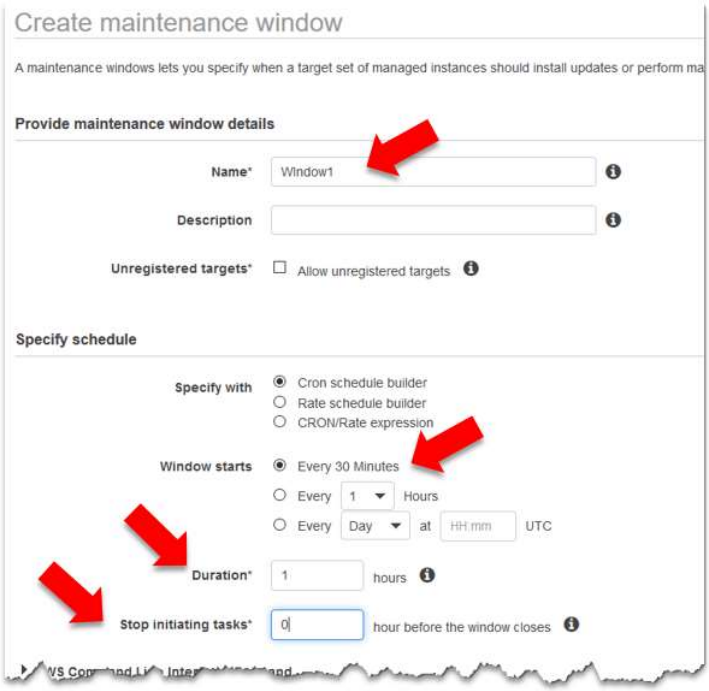
***Note**: If you receive a message regarding the new console for AWS Systems Manager, you can ignore it for now. Just click the X in the top right corner of the message.*



6. Choose **Create a Maintenance Window**.

7. In the Name field, type **Window1**.

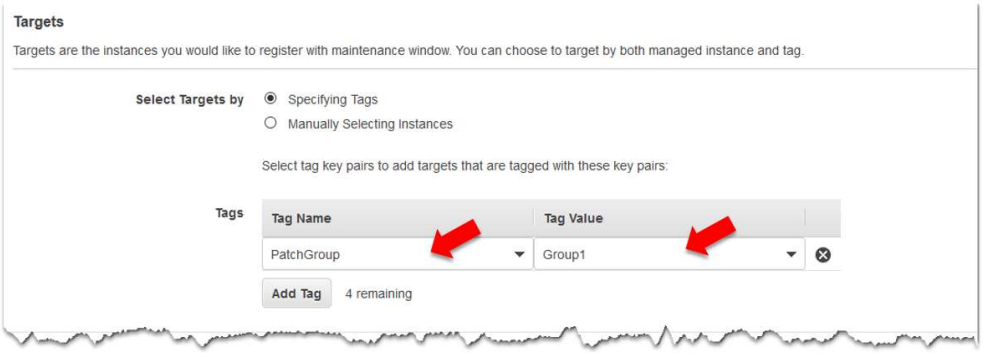
8. In the schedule section, make sure that the Window starts **every 30 minutes**. Enter **1** in the **Duration** field and **0** into the **Stop initiating tasks** field.



9. Click the **Create Maintenance Window** button to finish.

10. Select the Maintenance Window that was just created (**Window1**). From the Actions menu, select **Register Targets**.

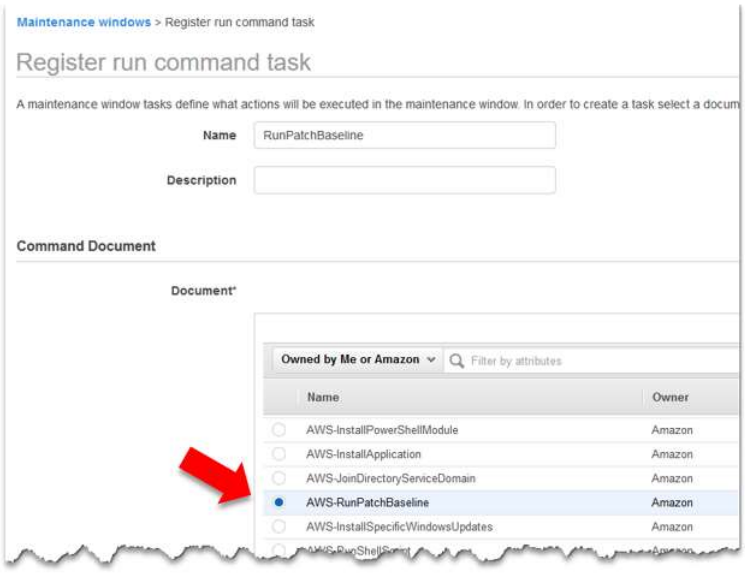
11. Under the Targets section, use the drop-down and select the tag **Patch Group** that was created earlier. For the Tag value, select **Group1**.



12. Click **Register Targets**. Click **Close** on the acknowledgment.

13. Select the Maintenance Window and choose **Register run command task** from the Actions menu.

14. Type **RunPatchBaseline** under the Name field. Select **AWS-RunPatchBaseline** from the list of command document section.



15. Under **Targets**, ensure that a target is selected.

    Note: *If you have multiple Maintenance Windows, you might need to identify the correct one by navigating back to the Maintenance Window console and making note of the Window Target ID.*

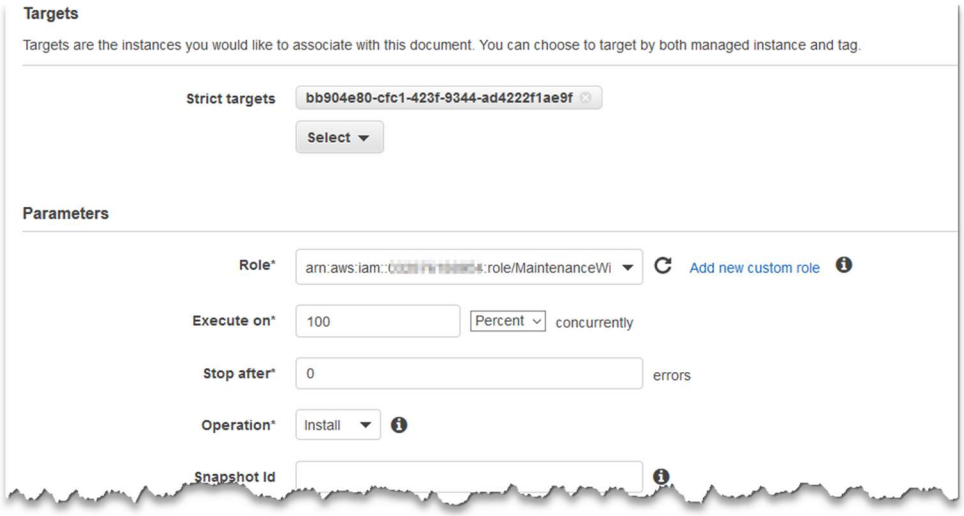
16. Under **Role***, select the **MaintenanceWindowRole** that was created as part of the initial CloudFormation template.

17. In the **Execute on*** field, enter **100** and ensure **Percent** is selected from the drop-down.

18. In the **Stop after*** field, type **0**.

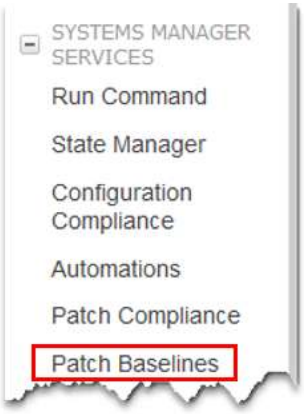
19. Modify the Operation field and change to **Install**.

    Your selections should like the screenshot below:



20. Click **Register Task**. Click **Close** on the acknowledgment.

21. In the EC2 console, select **Patch Baselines** under the Systems Manager Services group:



22. Select the **AWS-DefaultPatchBaseline** from the list of default baselines. It should have **Windows** listed as the Operating System.

23. From the Actions menu, select **Modify Patch Groups**.

24. In the Patch Groups field, type **Group1**, be sure to **click the check mark** to the right of the text box.

25. Click **Close**.

26. In the EC2 console, click on **Run Command** on the navigation pane under the System Manager Services section.

    Note: *For lab purposes, you will be manually executing a Scan operation. In a production environment, this would be configured to run on a recurring schedule.*

27. Select the **Run a command** button.

28. In the command document section, select the radio button next to **AWS-RunPatchBaseline**.

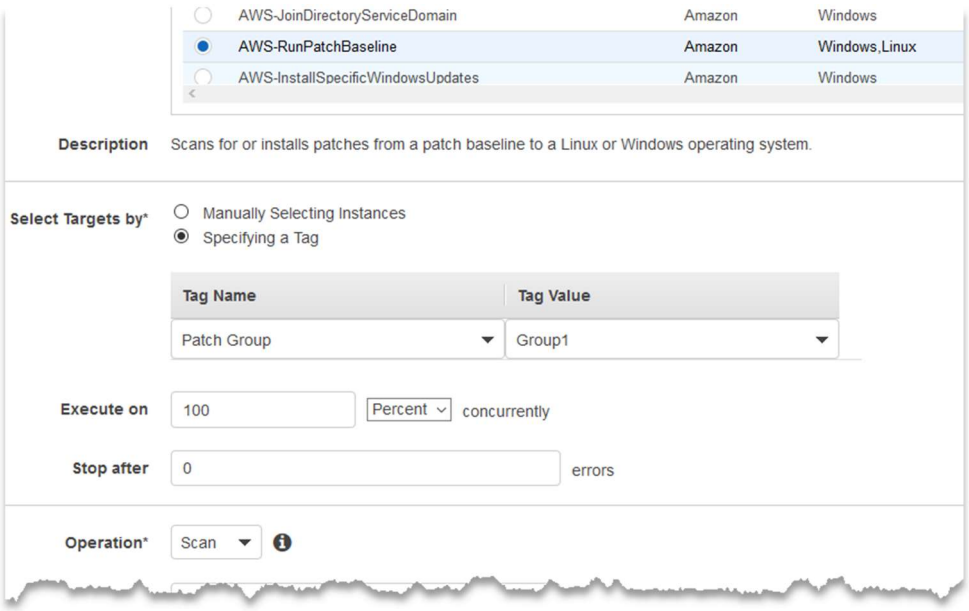
29. Under **Select Targets by***, click the radio button next to **Specifying a Tag**.

30. Under Tag Name, select **Patch Group**. Select the value of **Group1** under the Tag Value.

31. In the Execute On text box, enter **100** and modify the concurrency box to **Percent**.

32. Enter **0** in the Stop after text box.

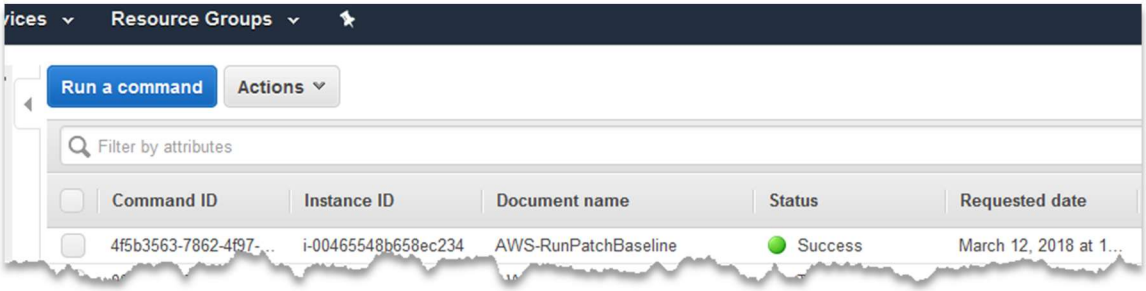
33. In the Operation* box, select “Scan.”



34. Click **Run**.

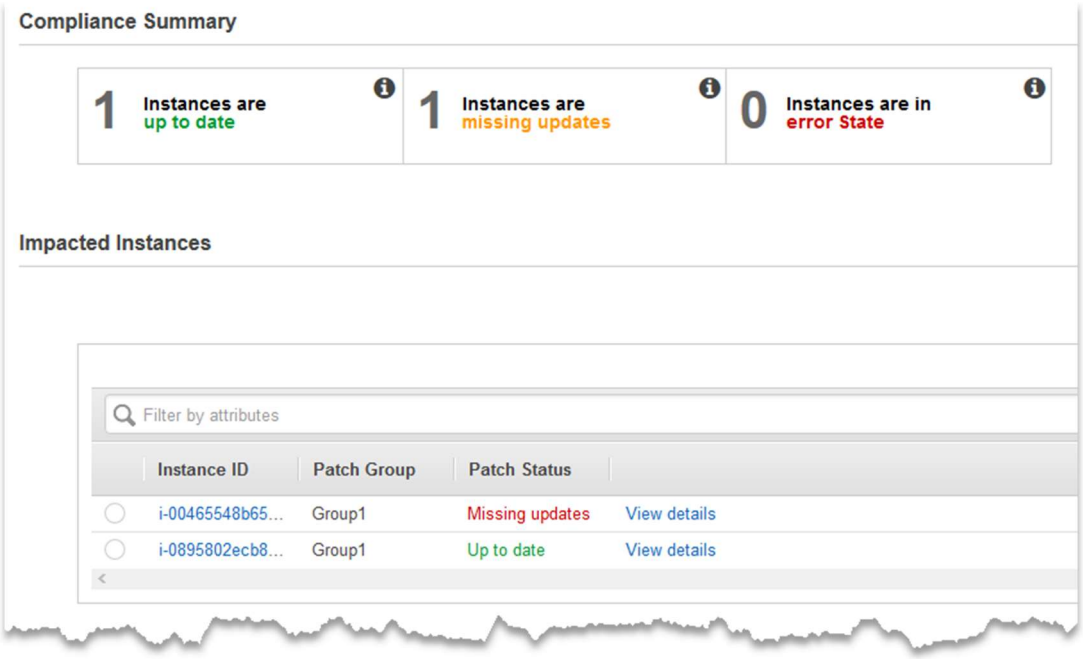
35. You should receive a success message. Click **View Result**.

36. Wait until the Run command status changes to **Success** (this takes about 10 minutes on average).



37. Navigate to the **Patch Compliance** console found in the navigation pane in the EC2 console under the Systems Manager Services section.

38. Is it reporting that your instances up to date?



***Note**: The screenshot above is an example. It's very likely that your instances are indeed up to date, as Amazon keeps its AMIs up to date with the latest Microsoft patches. However, workloads that have persisted longer than a month or so would likely require security patches.*

39. Select the instance and click **View Details**.

40. Are there patches listed for the instance?

That's it. You've completed this lab.

Conclusion: In this lab, participants used AWS Systems Manager to enable patching compliance for instances running in EC2. You created a Maintenance Window to install patches and scanned the EC2 instances to ensure compliance against a patch baseline.