AWS Instance-Scheduler

- This solution uses Instance scheduler to automate the starting (and stopping) of EC2 instances based on specified timeframe.
- The architecture uses Amazon CloudWatch events, DynamoDB tables and a Lambda function.
    - When the instance is stopped it adds a tag value to the instance
    - When an Instance is also started by this solution, it adds a tag to the instance.

Use Case

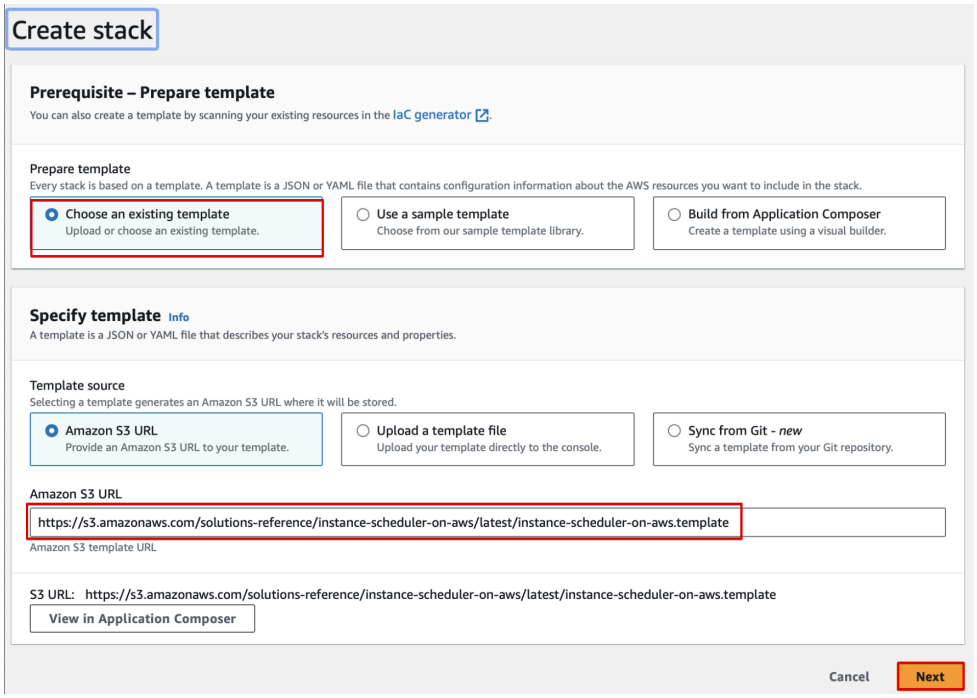
- Automatically stop instances only. Instances will not be automatically started
- Users can manually start instances after it has been stopped and the instance will be automatically stopped at end time based on the applicable period.

Create an AWS CloudFormation stack with the AWS Instance Scheduler template

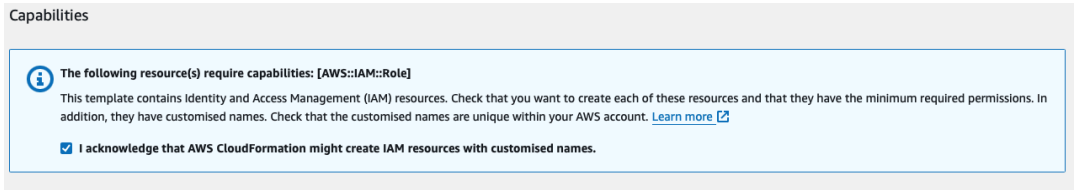
The stack deploys an AWS Lambda function, an Amazon DynamoDB table, an Amazon CloudWatch Events event, and Amazon CloudWatch custom metrics.

1. Go to cloud formation in the region you intend to create the stacks and click on **Launch solution,** in the link provided. This will automatically launch the cloudFormation stack in your AWS account.

2. In the Create Stack page, ensure the s3 URL is selected as the template source



3. In "Specify stack details" page, for Stack name, enter **Ec2instanceScheduler**.
4. For Frequency, choose a frequency in minutes to run your scheduler (for example, 5 minutes).
5. (optional) Under "Services", disable all services **but EC2 scheduling**.
6. For Started tags, enter **Started-by=Instance_Scheduler**.
7. For Stopped tags, enter **Stopped-by=Instance_Scheduler**.
8. Select parameters or use the default values.
9. Click on **Next**.
10. On the "Configure stack Options" page, choose Next.
11. Review your settings, and then **check** the box "I acknowledge that AWS CloudFormation might create IAM resources".

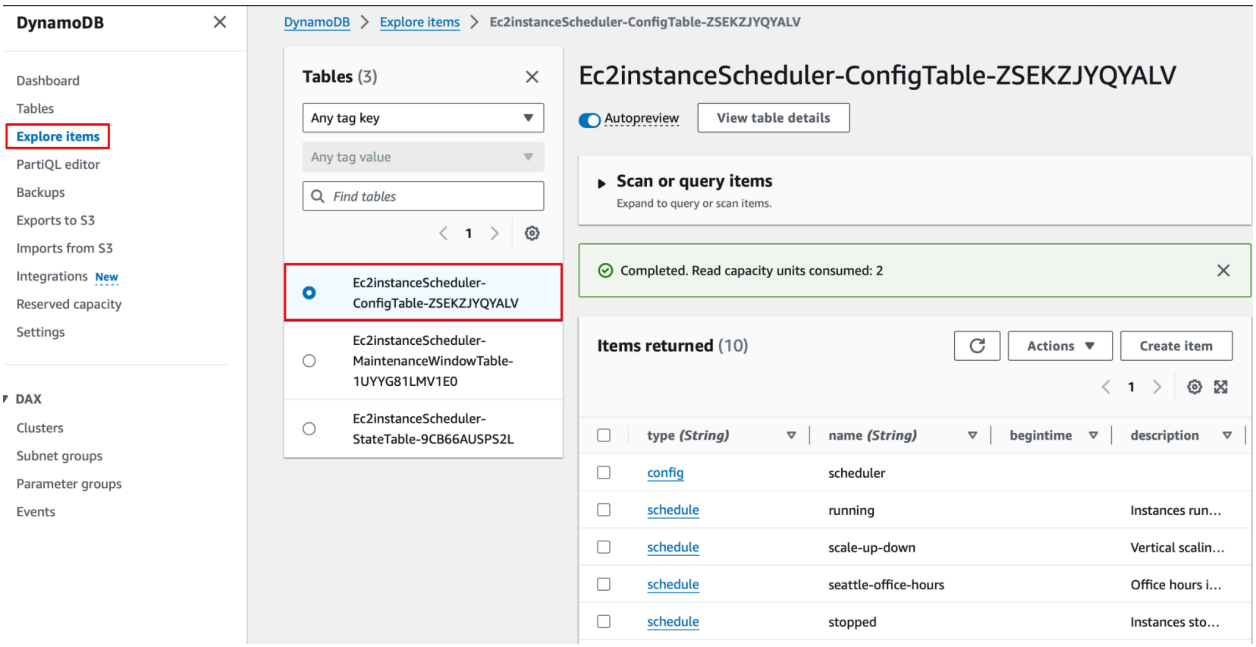


12. Choose **submit**.

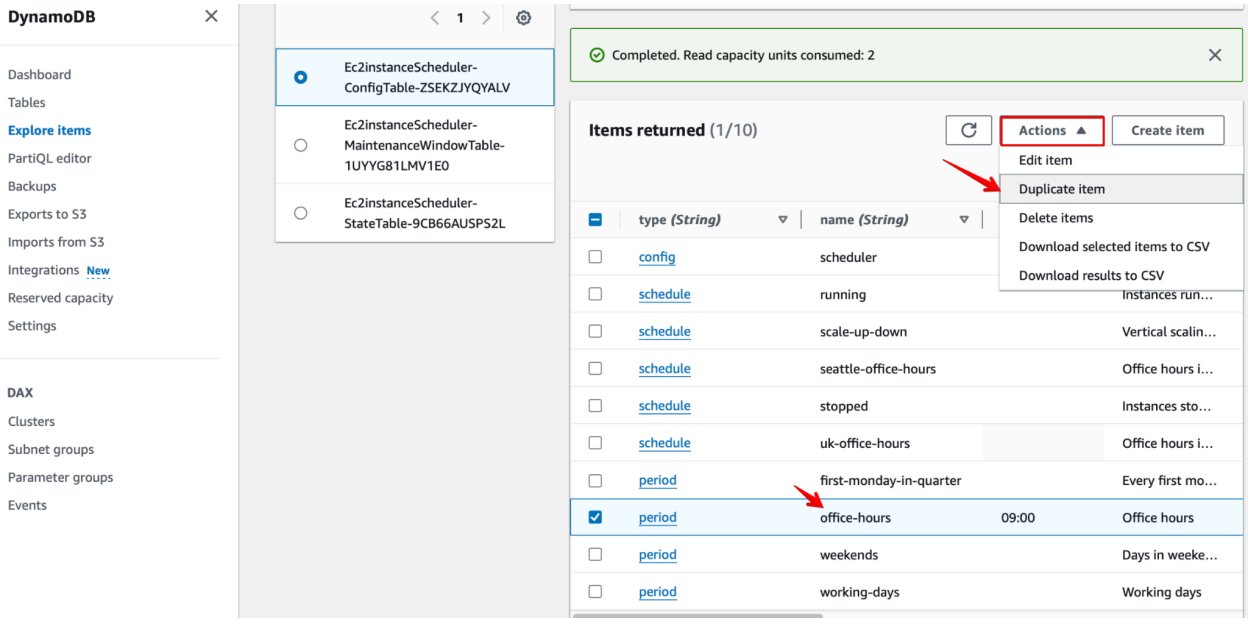
This deployment will create 2 databases for storing state and configuration for period and schedules, a lambda function and cloud watch event rules and all other necessary resources.

Create a period to stop instances based on a schedule

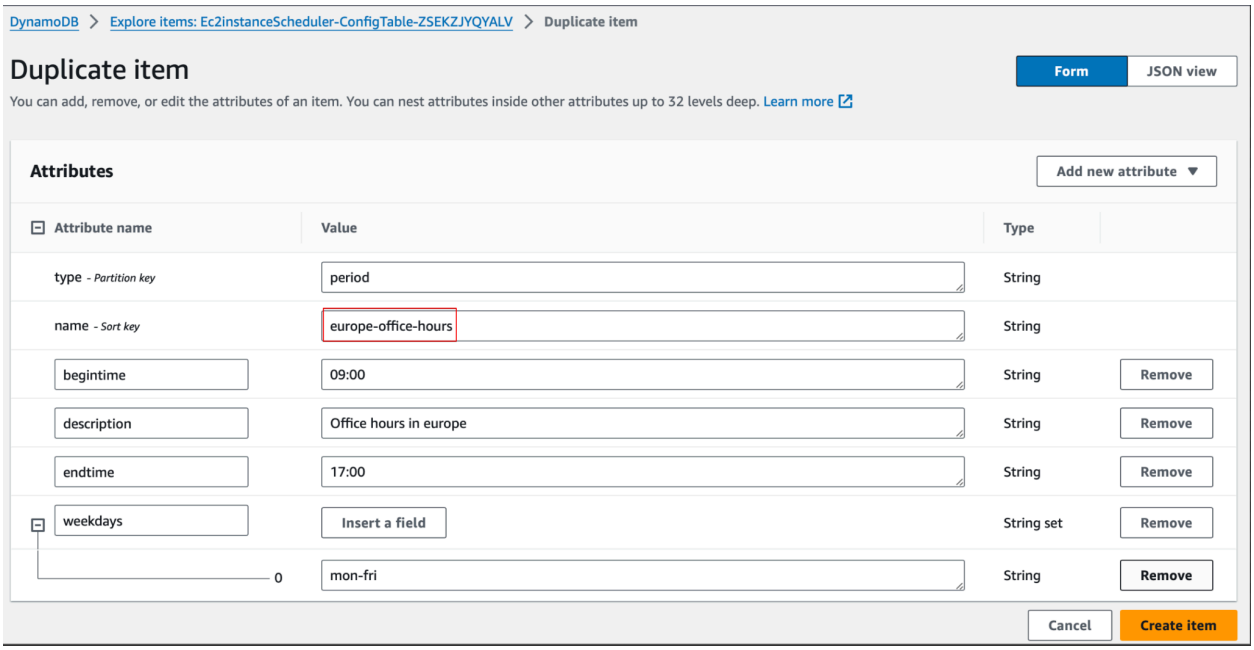
1. To create a period, Open the DynamoDB console
2. Select the "Explore items" tab and Choose Configuration table. This will list all the default schedules and periods of the solution



3. In the Items view page, and select the "office-hours" period. Go to actions and click on duplicate.



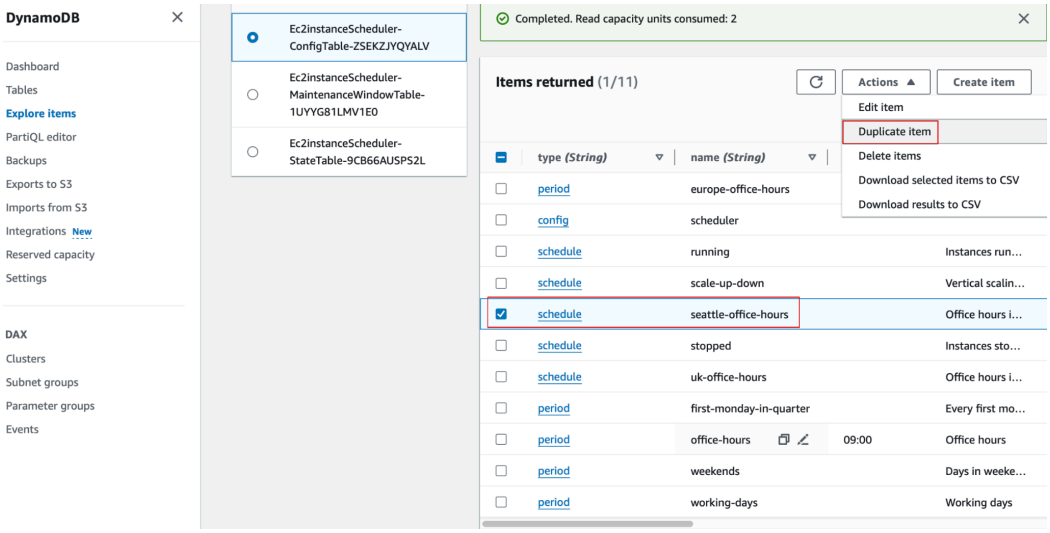
4. Set the below parameters for the stop time. You will need to remove the begin time configuration and set the description and name to stop-time.



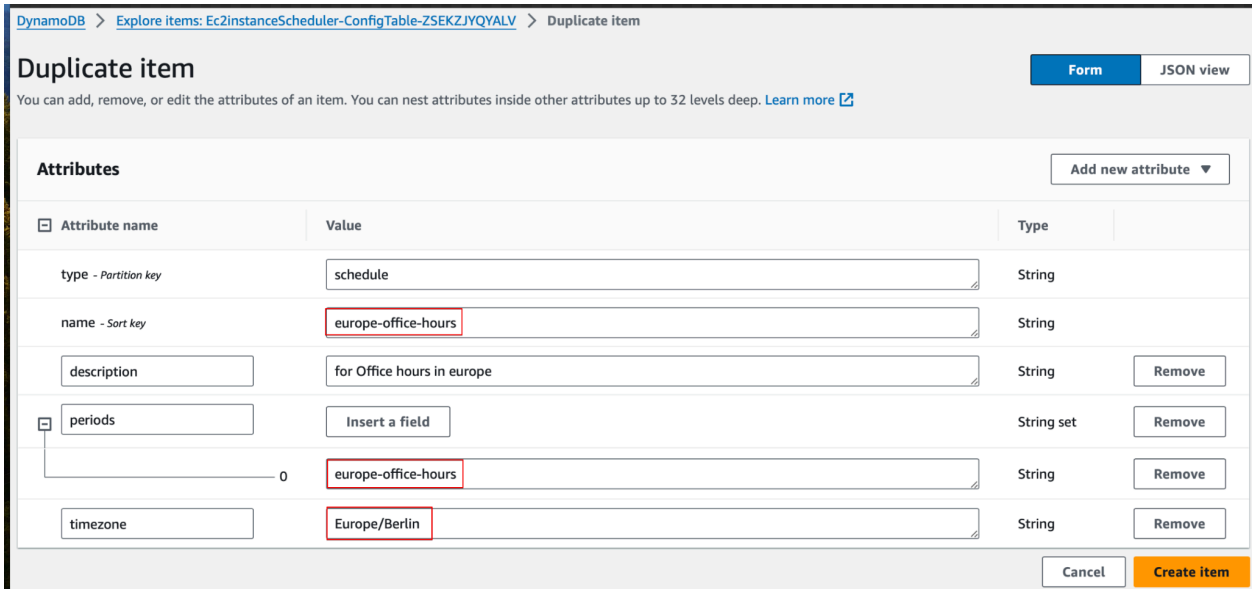
5. Click on "Create Item"

Create a schedule for the period (created above)

1. To create a schedule, Open the DynamoDB console
2. On the *configuration table items*, select the "seattle-office-hours" schedule and Go to **action** and select Duplicate (as above)



Set the below parameters for the schedule.



You should see the new period and schedule Items on the list of items on the config table

3. Test the configured schedule on an instance
    a. Spin up an EC2 instance(s) and use the tagkey = Schedule tagvalue = europe-office-hours (or YOUR Schedule name).
    Once these tags are applied to instances, the instance will stop with the next trigger based on the time zone.

Here is the list of timezone to use when creating a schedule.

e.g America/New_York, Europe/Berlin

America/New_York