Automate what happens next using HPE OpsRamp Process Automation

HPE Developer Community Meetup

OpsRamp Process Automation

Process Automation in OpsRamp enables to set up and automatically run tasks related to platform events in the system saving time and effort by reducing manual work.

Automate Workflows

Triggered by specific events or schedules

On Demand Execution

Manually execute for immediate tasks or troubleshooting

Alert Triggered

Run in response to Alerts or incidents detected in OpsRamp

Integration Task

To facilitate integration between OpsRamp and other platforms, API

Efficiency: Reduces manual workload and speeds up routine operations.
Consistency: Ensures tasks are performed in a standardized way every time.
Scalability: Enables automation of tasks across large and complex environments.
Rapid Response: Automates incident response for faster troubleshooting and remediation.
Flexibility: Supports custom logic and integration to address specific operational needs.

Reference:
Automation > Process Automation
https://docs.opsramp.com/solutions/remediation-automation/process-automation/

Process Automation

Scripts, in OpsRamp Process Automation, are executable files written in languages like **Bash** (Linux/Unix), **PowerShell** (Windows), **or Python** (Cross-platform), enabling the automation of various tasks across your infrastructure.

Task Automation

Automate repetitive operational tasks such as server maintenance, software installation, patching, backups, and application deployments.

Incident Response

Execute automated diagnostics and remediation steps in response to monitoring alerts or incidents, enabling rapid resolution

Custom Workflows

Tailored automation workflows that address specific business or technical requirements, such as provisioning resources, managing user accounts

Integration

Connect and interact with external APIs, databases, and third-party tools to create seamless integration between OpsRamp and other systems.

Data Collection & Reporting

Gather data from multiple sources, process it, and generate reports or dashboards for improved visibility and decision-making.

Self-Healing Automation

Design scripts to automatically detect and resolve issues without human intervention, improving system reliability and uptime.

Usecase Demo

Demo 1 - Service Restart – User Approval

Receive Alert Details:

The process starts with Windows Service alert, which user can identify in the alert view or using signal start event.

User Approval Step:

Use OpsRamp's approval task and send an approval request to the designated user(s).

Wait for approval or rejection.

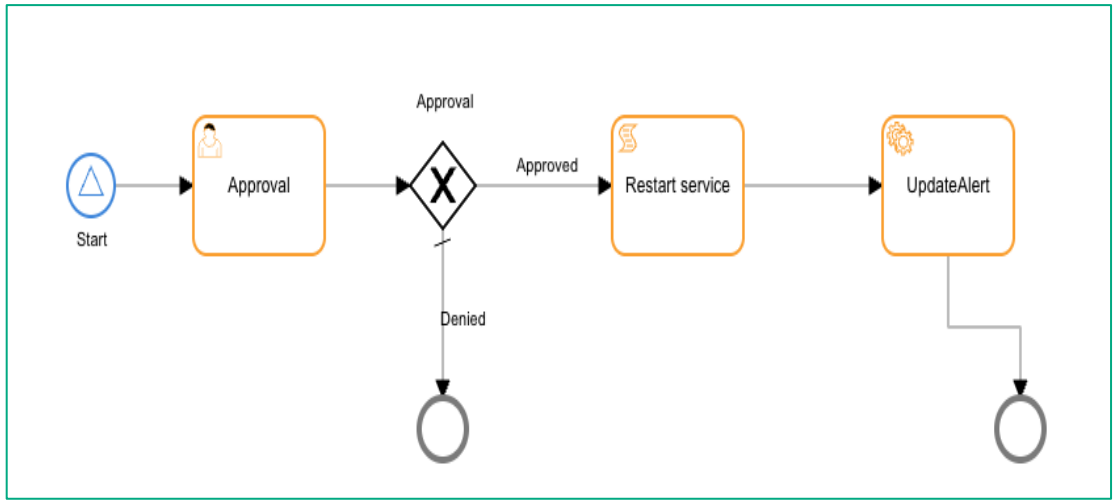
Conditional Execution Based on Approval:

If approved, proceed to execute the restart script.

If rejected, log or notify accordingly.

Execute Restart Script:

OpsRamp's process automation to runs the PowerShell script on the target server by passing the service name as a parameter.



Demo 2 - System Rebooted by Crash

System Reboot Event

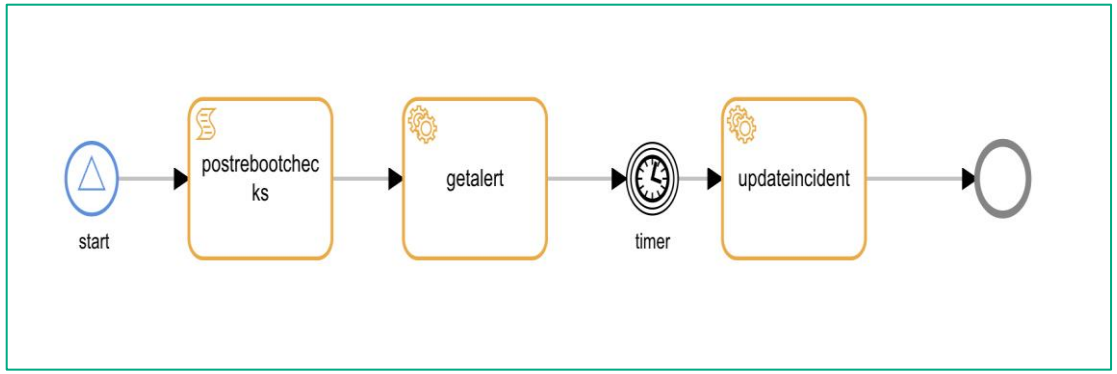
The process starts with a reboot event, which could be due to a crash.

Post-Reboot Script Execution

A post-reboot script runs to gather diagnostic data or system state information.

Capture Output in Incident

The output from the script execution is captured and logged into an incident record for further analysis.



Troubleshooting

Process Definition Fails to Start

- **Verify the Trigger**: Check the trigger condition and ensure all prerequisites are met. For scheduled jobs, confirm the schedule is active and correctly configured. For event-based triggers, verify that the event is being received by OpsRamp.
- **Check User Permissions**: Ensure your user role has the correct permissions to run the process definition. If the process is triggered by an integration, verify that the integration's service account has the necessary permissions.
- **Validate Process Steps**: Review each step in the process definition for errors. Pay close attention to variables, script names, and API configurations. Use the "Test" functionality within the Process Automation editor to check individual steps.
- **Review the Audit Log**: Examine the Process Automation audit logs for specific error messages that indicate why the process failed to start.

A Process Fails Mid-Execution

- **Examine the Execution Log:** Navigate to the process instance's execution log. This log provides a step-by-step breakdown of the process and will highlight the exact task that failed and the corresponding error message.
- **Inspect Integration Status:** If an API or integration task failed, check the status of that specific integration within OpsRamp.
- **Validate Scripts:** If a script failed, copy the script and test it in a controlled environment to isolate the error.
- **Verify Resource Connectivity:** Ensure the target resource is online and accessible from the OpsRamp gateway or agent.

Troubleshooting

A process definition is not invoked by a new alert or event

- **Verify Deployment Time:** A process will only be invoked by alerts or events that are triggered after the process definition has been deployed.
- **Check for Conflicts with Other Processes:** A process will not be triggered by an alert if that alert was created by another process definition.
- **Review Filter Criteria:** Ensure that the filter criteria configured in your Signal Start Event (both entity and operation) accurately match the alerts or events you expect to trigger the process.
- **Check for Maintenance Windows:** A process will not be triggered by an alert if that alert was created during a scheduled maintenance period.

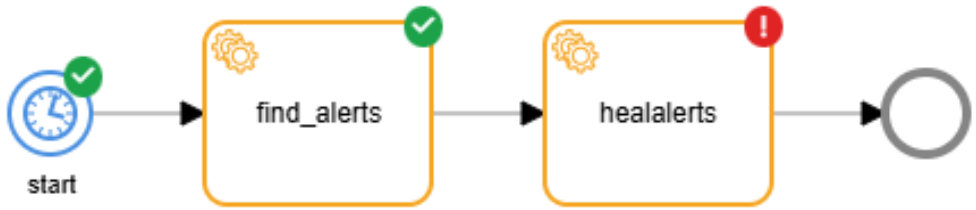
Update Incident task fails to update the incident, or the update does not appear

- **Validate Task Inputs:** Ensure the “incident uuid” is correctly configured in the task input using an expression like $startEvent.Alert.incidentuuid.
- **Confirm Incident Creation:** If an incident is not created immediately, you may need to add a waiting timer after the Signal Start Event to ensure the incident exists before the update task is performed.
- **Check Audit Logs:** Verify that the process executed successfully. An update from a process will show "OpsRamp Process User" as the user who created the response.

Live Example

Direct healing of alerts found with find alert task

- **Direct heal alert activity for the alerts:** Find alert process will find the filtered criteria alert and those alerts will be 1 or more than 1. These alerts cannot be healed directlv. Below is one of the classic example of the same.



OUTPUT

start

StartEvent_1h9s5yk

Success

find_alerts

Task_1uz095o

{alerts=[Alert[uuid=475151628, metric=testmetric, currentState=Critical, resource=Resource[uuid=e0a8b3d7-ebe2-4233-95a9-215f31a85eef, hostName=KRFSR202, name=KRFSR202, ipAddress=null, make=null, model=null]]]}

healalerts

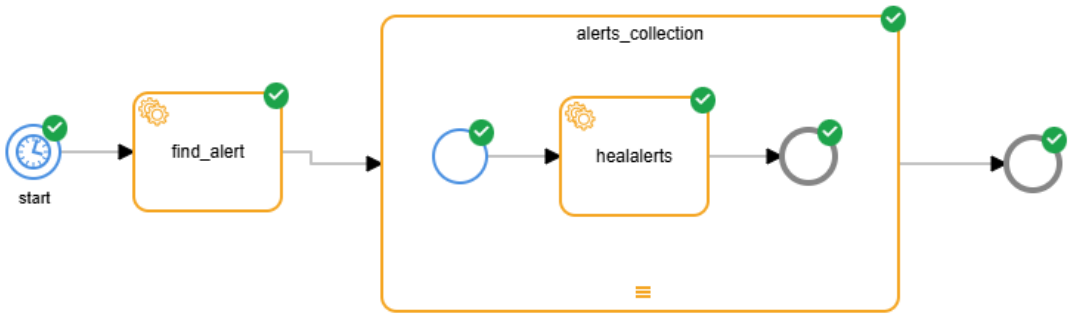
Task_1mdd7q4

Invalid property: id ,found in the expression:Task_1uz095o.alerts.id

Live Example

Sequential healing of alerts found with find alert task

- **Sequential heal alert activity for the alerts:** Refer to below process automation referring to sequential healing



OUTPUT

start

StartEvent_1ivvlx5

Success

find_alert

Task_03et5v7

{alerts=[Alert[uuid=475151628, metric=testmetric, currentState=Critical, resource=Resource[uuid=e0a8b3d7-ebe2-4233-95a9-215f31a85eef, hostName=KRFSR202, name=KRFSR202, ipAddress=null, make=null, model=null]]]}

-

Task_1ul57li#multiInstanceBody

Success

alerts_collection

Task_1ul57li

Success

-

StartEvent_0v22nql

Workflow is successfully executed.

Reusable Process Automation

Heal alerts older than 30 days

System Rebooted by Crash

Windows Service Restart - Approval

Reference links

- Process Definition Reference

  https://docs.opsramp.com/solutions/remediation-automation/process-automation/process-definitions/processdef-reference/

- Process Automation Variables

  https://docs.opsramp.com/solutions/remediation-automation/process-automation/process-definitions/variables/

- Prerequisites and how to enable Process Automation

  https://docs.opsramp.com/solutions/remediation-automation/process-automation-2.0/enable-process-automation/

  https://docs.opsramp.com/solutions/remediation-automation/scripts-2.0/prerequisites-and-permissions/

Thank You