Troubleshooting Actions

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Helping you prepare for the GitHub Actions exam

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Example: Expect to Troubleshoot

kamranayub added 29 commits 2 weeks ago

refactor the initial action code	✓	b84fd3a
try without entrypoint.sh	✗	bcb656c
try ls	✗	ef7d203
try copy dir	✗	42fd92c
try moving Docker build context to root	✗	db145a4
try run opts	✗	1a46a7d
mount syntax	✗	984b062
try just cd	✓	d2894fe
try just js code	✗	9ed9e59
try slash	✓	d4fcb76
switch to .net action	✗	95ee3c2
no sha	✗	8cf0f8f
no subdir	✗	bc9eab6
try aspnet and slash	✗	34f752d
try slash App	✗	d0f3e35
try workdir	✗	b454a2d
debug ls -al	✗	37cd4e2
try root	✓	78a1b8a
comment for workdir		0215505
try using sdks	✗	06101d7
fix syntax error	✓	feb6fad
formatting	✓	71fba8c
use AppendAllLinesAsync	✓	5870320
try local docker script		5ac361f
mark sh as exec	✓	82f1d65
update script and it works	✓	bc6c0e7
try testing a failure		ebb6f85
test with exit code	✗	4ffe389
remove test failure	✓	4914d56

You should expect a lot of trial and error when testing GitHub actions

Example: Expect to Troubleshoot

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remove test failure	✓	4914d56

How to Troubleshoot Your Actions

View workflow run logs
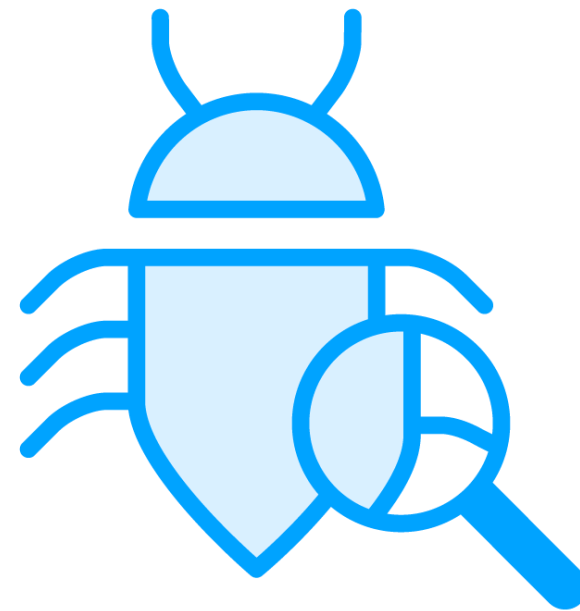
Enable debug logging
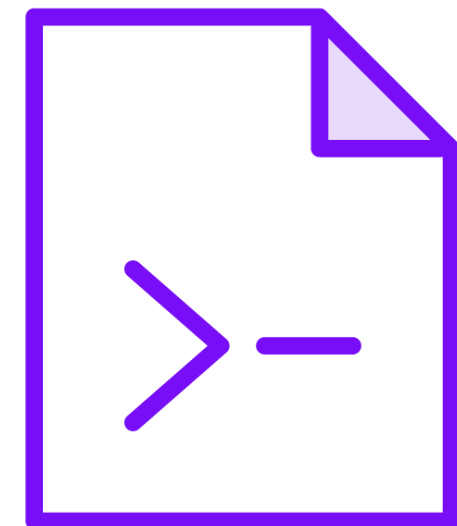
Use debug workflow commands

Demo: Viewing Workflow Run Logs

Demo: Viewing Workflow Run Logs (Cont.)
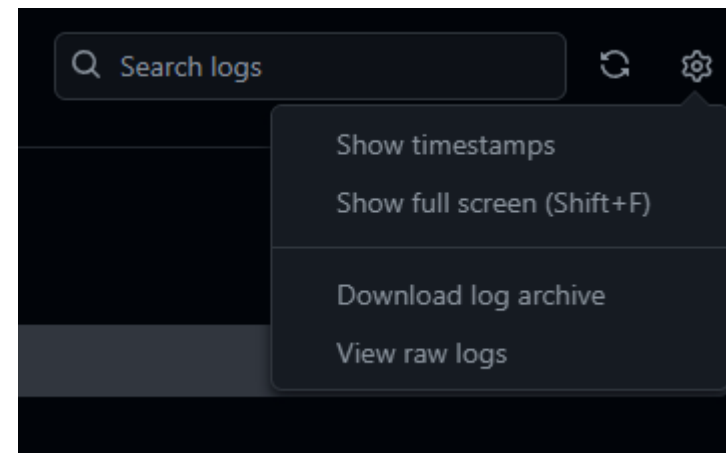
Demo: Enabling Debug Logging

Re-run single job

A new attempt of this workflow will be started, including **Test Get Employee Action (Docker)** and dependents:

❌ Test Get Employee Action (Docker)

☐ Enable debug logging   Cancel   **Re-run jobs**

∨ ❌ Test Get Employee (JavaScript) Action

```
1   ##[debug]Evaluating condition for step: 'Test Get Employee (JavaScript) Action'
2   ##[debug]Evaluating: success()
3   ##[debug]Evaluating success:
4   ##[debug]=> true
5   ##[debug]Result: true
6   ##[debug]Starting: Test Get Employee (JavaScript) Action
7   ##[debug]Loading inputs
8   ##[debug]Evaluating: github.actor
```

Demo: Using Debug Workflow Commands

```
23          return core.setFailed(
24             `No public email found for GitHub user: ${githubUsername}`
25          );
26  +       } else {
27  +          core.info(`Email found for GitHub user`);
28  +          core.debug(`Email: ${email}`);
29          }
30
31          // Slack API: get user by email address


43
44          // Get the JSON webhook payload for the event that triggered the workflow
45          const payload = JSON.stringify(github.context.payload, undefined, 2);
46  +       core.debug(`The event payload: ${payload}`);
47       } catch (error) {
48          core.setFailed(error.message);
49       }
```

Demo: Runner Diagnostic Logs

```
# Add to repository secrets or variables
ACTIONS_STEP_DEBUG=true
ACTIONS_RUNNER_DEBUG=true

# Workflow debug command (Bash)
echo "::debug::A debug log"

# Workflow debug command (GitHub Actions Toolkit)
core.debug("A debug log");

# Workflow debug command (C#)
Console.WriteLine("::debug::A debug log");
```

Enabling Debug Logging for the Runner and Steps

You can add these to the repository variables or secrets. These are set for you when you re-run a workflow with debug logging enabled. Use the debug workflow command to include any verbose output.

Troubleshooting Self-Hosted Runners
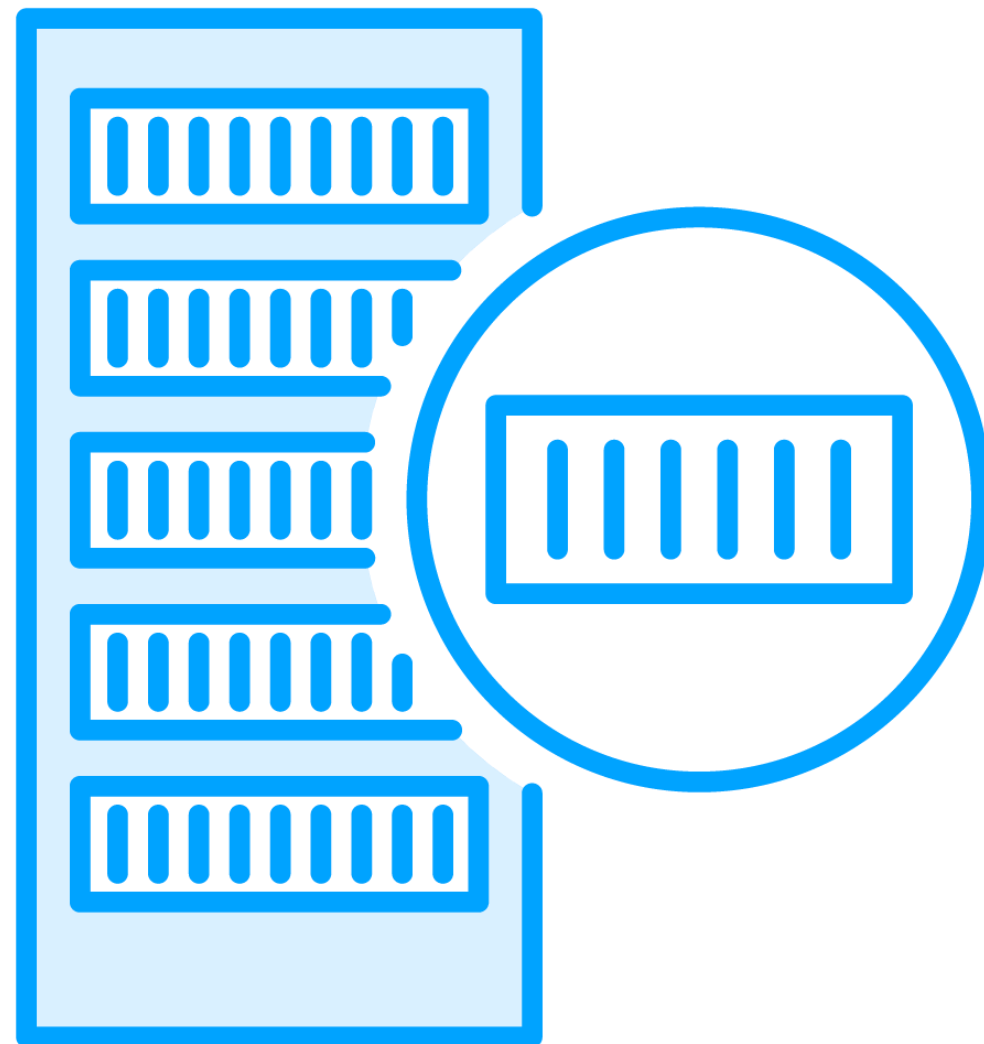
Check job logs
- Stored in `_diag` directory
- Filenames start with `Worker_`

Check the runner service
- Using `journalctl`

Check runner connectivity
- Using config script

Make sure Docker is installed
- Required for container actions

References

Troubleshooting Workflows
https://docs.github.com/en/actions/monitoring-and-troubleshooting-workflows/troubleshooting-workflows/about-troubleshooting-workflows

Monitoring and Troubleshooting Self-Hosted Runners
https://docs.github.com/en/actions/hosting-your-own-runners/managing-self-hosted-runners/monitoring-and-troubleshooting-self-hosted-runners

Troubleshooting JavaScript Actions

Create a test workflow

.github/workflows/test.yml

```yaml
name: Test Actions

on:
  pull_request:
    branches:
      - main
      - m4/demo
  push:
    branches:
      - main

permissions:
  contents: read

jobs:
  test-get-employee-js-action:
    name: Test Get Employee Action (JavaScript)
    runs-on: ubuntu-latest

    steps:
      - name: Checkout
        uses: actions/checkout@v4

      - name: Setup Node.js
        uses: actions/setup-node@v4
        with:
          node-version-file: get-employee-js-action/.nvmrc
          cache-dependency-path: get-employee-js-action
          cache: npm

      - name: Install Dependencies
        run: npm ci
        working-directory: get-employee-js-action

      - name: Test Get Employee (JavaScript) Action
        id: test-employee-js-action
        uses: ./get-employee-js-action
        with:
          github-username: ${{ github.actor }}
          github-token: ${{ secrets.GITHUB_TOKEN }}
          slack-token: ${{ secrets.SLACK_TOKEN }}

      - name: Print Slack User ID
        run: echo "${{ steps.test-employee-js-action.outputs.slack-user-id }}"
```

Demo: Action Failed Due to Inputs

```
Test Get Employee (JavaScript) Action

1  ▼ Run ./get-employee-js-action
2    with:
3      github-username: kamranayub
4      github-token: ***
5      slack-token: ***
```

Demo: Action Failed Due to API


```
  ✕  Test Get Employee (JavaScript) Action

1  ▼ Run ./get-employee-js-action
2    with:
3      github-username: kamranayub
4      github-token: ***
5      slack-token: ***
6
6  Error: An API error occurred: users_not_found
```

Adding Debug Logging to JavaScript Actions

Using the GitHub Actions toolkit

main.js

```javascript
// @ts-check
const core = require("@actions/core");
const github = require("@actions/github");
const { WebClient } = require("@slack/web-api");

run();

async function run() {
  try {
    const githubUsername = core.getInput("github-username");
    const githubToken = core.getInput("github-token");
    const slackToken = core.getInput("slack-token");

    const slackUserId = await lookupSlackUserByGitHubUsername(
      githubUsername,
      githubToken,
      slackToken
    );
    core.setOutput("slack-user-id", slackUserId);
  } catch (error) {
    core.setFailed(error);
  }
}

async function lookupSlackUserByGitHubUsername(
  githubUsername,
  githubToken,
  slackToken
) {
  const octokit = github.getOctokit(githubToken);

  const email = await core.group("Fetch GitHub user info", async () => {
    core.debug(`Looking up email for GitHub user: ${githubUsername}`);

    const {
      data: { email },
    } = await octokit.rest.users.getByUsername({
      username: githubUsername,
    });

    if (!email) {
      throw new Error(
        `No public email found for GitHub user: ${githubUsername}`
      );
    }

    core.debug(`Found email for GitHub user: ${email}`);

    return email;
  });
  return await core.group("Fetch Slack user info", async () => {
    const web = new WebClient(slackToken);

    core.debug(`Looking up Slack user by email: ${email}`);

    const { user: slackUser } = await web.users.lookupByEmail({ email: email });

    if (!slackUser) {
      throw new Error(`No Slack user found with email: ${email}`);
    }

    core.debug(`Found Slack user: ${slackUser.id}`);

    return slackUser.id;
  });
}
```

Demo: Action Debug Logging

Troubleshooting Docker Actions

Create a test workflow

.github/workflows/test.yml

```yaml
test-get-employee-docker-action:
    name: Test Get Employee Action (Docker)
    runs-on: ubuntu-latest

    steps:
      - name: Checkout
        uses: actions/checkout@v4

      - name: Test Get Employee (Docker) Action
        id: test-employee-docker-action
        uses: ./get-employee-docker-action
        with:
          github-username: ${{ github.actor }}
          github-token: ${{ secrets.GITHUB_TOKEN }}
          slack-token: ${{ secrets.SLACK_TOKEN }}

      - name: Print Slack User ID
        run: echo "${{ steps.test-employee-docker-action.outputs.slack-user-id }}"
```

Demo: Action Failed Due to Entrypoint

Troubleshooting Docker Actions

Seems to be an issue with the ENTRYPOINT

Dockerfile

```
FROM mcr.microsoft.com/dotnet/sdk:8.0 AS build-env

WORKDIR /App
COPY ./src ./
RUN dotnet restore
RUN dotnet publish -c Release -o out

FROM mcr.microsoft.com/dotnet/aspnet:8.0
WORKDIR /App
COPY --from=build-env /App/out .
ENTRYPOINT ["dotnet", "DotNetDockerAction.dll"]
```

Troubleshooting Docker Actions

Adding a debug log

entrypoint.sh

```sh
#!/bin/sh

# Show the current working directory
echo "::debug::Current working
directory: $(pwd)"

# Run 'ls -al' and process its output
ls -al | awk '{print "::debug::" $0}'
```

action.yml

```yml
runs:
    using: docker
    image: Dockerfile

    entrypoint: /entrypoint.sh
```

Demo: Action Container Filesystem

```
-e GITHUB_ACTION -e GITHUB_EVENT_PATH -e GITHUB_ACTION_REPOSITORY -e GITHUB_ACTION_REF -e GITHUB_PATH -e GITHUB_ENV -e GITHUB_STEP_SUMMARY -e GITHUB_STATE -e GITHUB_OUTPUT -e
docker: Error response from daemon: failed to create task for container: failed to create shim task: OCI runtime create failed: runc create failed: unable to start container process: exec:
"./entrypoint.sh": stat ./entrypoint.sh: no such file or directory: unknown.
```

Troubleshooting Docker Actions

Copy over debug entrypoint script

Dockerfile

```dockerfile
FROM mcr.microsoft.com/dotnet/sdk:8.0 AS build-env

WORKDIR /App
COPY ./src ./
COPY entrypoint.sh /entrypoint.sh
RUN dotnet restore
RUN dotnet publish -c Release -o out

FROM mcr.microsoft.com/dotnet/aspnet:8.0
WORKDIR /App
COPY --from=build-env /App/out .
COPY --from=build-env /entrypoint.sh /entrypoint.sh
ENTRYPOINT ["dotnet", "DotNetDockerAction.dll"]
```

Demo: Action Container Filesystem

Re-run failed jobs ✕

A new attempt of this workflow will be started, including **all failed jobs** and dependents:

❌ Test Get Employee Action (Docker)

☑ Enable debug logging   Cancel   **Re-run jobs**

```
158   ##[debug]Current working directory: /github/workspace
159   ##[debug]total 48
160   ##[debug]drwxr-xr-x 6 1001  127  4096 Aug  6 18:28 .
161   ##[debug]drwxr-xr-x 6 root root  4096 Aug  6 18:29 ..
162   ##[debug]drwxr-xr-x 8 1001  127  4096 Aug  6 18:28 .git
163   ##[debug]drwxr-xr-x 3 1001  127  4096 Aug  6 18:28 .github
164   ##[debug]-rw-r--r-- 1 1001  127  2066 Aug  6 18:28 .gitignore
165   ##[debug]-rw-r--r-- 1 1001  127 11357 Aug  6 18:28 LICENSE
166   ##[debug]-rw-r--r-- 1 1001  127   451 Aug  6 18:28 README.md
167   ##[debug]-rw-r--r-- 1 1001  127  1183 Aug  6 18:28 action.yml
168   ##[debug]drwxr-xr-x 3 1001  127  4096 Aug  6 18:28 get-employee-docker-action
169   ##[debug]drwxr-xr-x 2 1001  127  4096 Aug  6 18:28 get-employee-js-action
170   ##[debug]Docker Action run completed with exit code 0
171   ##[debug]Finishing: Test Get Employee (Docker) Action
```

Troubleshooting Docker Actions

Copy over debug entrypoint script

Dockerfile

```dockerfile
FROM mcr.microsoft.com/dotnet/sdk:8.0 AS build-env

WORKDIR /App
COPY ./src ./
COPY entrypoint.sh /entrypoint.sh
RUN dotnet restore
RUN dotnet publish -c Release -o out

FROM mcr.microsoft.com/dotnet/aspnet:8.0
WORKDIR /App
COPY --from=build-env /App/out .
COPY --from=build-env /entrypoint.sh /entrypoint.sh
ENTRYPOINT ["dotnet", "/DotNetDockerAction.dll"]
```
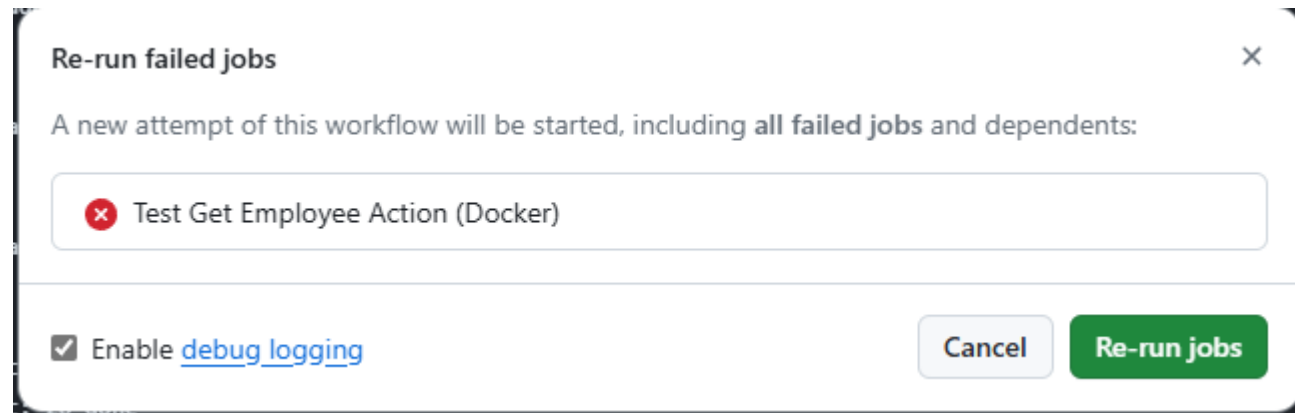
Demo: Action Succeeded

Troubleshooting Composite Actions

Create a test workflow

.github/workflows/test.yml

```yaml
test-send-message-composite-action:
    name: Test Send Slack Action (Composite)
    runs-on: ubuntu-latest

    steps:
        - name: Checkout
          uses: actions/checkout@v4

        - name: Setup Node.js
          uses: actions/setup-node@v4
          with:
            node-version-file: get-employee-js-action/.nvmrc
            cache-dependency-path: get-employee-js-action
            cache: npm

        - name: Install Dependencies
          run: npm ci
          working-directory: get-employee-js-action

        - name: Test Slack Message (Composite) Action
          id: test-send-action
          uses: ./
          with:
            github-username: ${{ github.actor }}
            github-token: ${{ secrets.GITHUB_TOKEN }}
            slack-token: ${{ secrets.SLACK_TOKEN }}
            slack-bot-token: ${{ secrets.SLACK_BOT_TOKEN }}

        - name: Print Slack Message Time
          run: echo "${{ steps.test-send-action.outputs.time }}"
```

action.yml

```yaml
name: 'Send Status Notification to Slack (Composite)'
description: "Sends the status of the GitHub Action to the user via Slack"

inputs:
  github-token:
    description: 'The GitHub token to authenticate with GitHub API'
    required: true
  github-username:
    description: 'The GitHub username of the employee to look up'
    required: true
  slack-token:
    description: 'The organizational Slack access token to look up users'
    required: true
  slack-bot-token:
    description: 'The organizational Slack access token to send chat messages'
    required: true

runs:
  using: composite
  steps:

    - uses: './get-employee-js-action'
      with:
        github-username: ${{ inputs.github-username }}
        github-token: ${{ inputs.github-token }}
        slack-token: ${{ inputs.slack-ttoken }}

    - name: slack-send
      uses: slackapi/slack-github-action
      with:
        channel-id: ${{ steps.get-employee-js.outputs.slack-user-id }}
        slack-message: "GitHub build result: ${{ job.status }}\n${{ github.event.pull_request.html_url || github.event.head_commit.url }}"
        slack-token: ${{ inputs.slack-bot-token }}
```

Demo: Wrong ref for step

```
1  Error: /home/runner/work/pluralsight-authoring-github-actions-demo-action/pluralsight-authoring-github-actions-demo-action/./action.yml (Line: 29, Col: 11): Expected format {org}/{repo}[/path]@ref. Actual
   'slackapi/slack-github-action'
2  Error: System.FormatException: Input string was not in a correct format.
3      at System.Text.ValueStringBuilder.ThrowFormatError()
4      at System.Text.ValueStringBuilder.AppendFormatHelper(IFormatProvider provider, String format, ParamsArray args)
5      at System.String.FormatHelper(IFormatProvider provider, String format, ParamsArray args)
6      at System.String.Format(IFormatProvider provider, String format, Object[] args)
7      at GitHub.Runner.Worker.TemplateTraceWriter.Error(String format, Object[] args)
8      at GitHub.DistributedTask.ObjectTemplating.TemplateContext.Error(Nullable`1 fileId, Nullable`1 line, Nullable`1 column, String message)
9      at GitHub.DistributedTask.ObjectTemplating.TemplateContext.Error(TemplateToken value, String message)
10     at GitHub.DistributedTask.Pipelines.ObjectTemplating.PipelineTemplateConverter.ConvertToStep(TemplateContext context, TemplateToken stepsItem, ReferenceNameBuilder nameBuilder)
11     at GitHub.DistributedTask.Pipelines.ObjectTemplating.PipelineTemplateConverter.ConvertToSteps(TemplateContext context, TemplateToken steps)
12     at GitHub.Runner.Worker.ActionManifestManager.ConvertRuns(IExecutionContext executionContext, TemplateContext templateContext, TemplateToken inputsToken, String fileRelativePath, MappingToken outputs)
13     at GitHub.Runner.Worker.ActionManifestManager.Load(IExecutionContext executionContext, String manifestFile)
14  Error: Failed to load /home/runner/work/pluralsight-authoring-github-actions-demo-action/pluralsight-authoring-github-actions-demo-action/./action.yml
```

Troubleshooting Composite Actions

Fix reference to public action

action.yml

```yaml
- name: slack-send
    uses: slackapi/slack-github-action@v1.26.0
    with:
      channel-id: ${{ steps.get-employee-js.outputs.slack-user-id }}
      slack-message: "GitHub build result: ${{ job.status }}\n${{
github.event.pull_request.html_url || github.event.head_commit.url }}"
      slack-token: ${{ inputs.SLACK_BOT_TOKEN }}
```

Demo: Input typo

Troubleshooting Composite Actions

Fix input typo

action.yml

```
- uses: './get-employee-js-action'
   with:
      github-username: ${{ inputs.github-username }}
      github-token: ${{ inputs.github-token }}
      slack-token: ${{ inputs.slack-token }}
```

Demo: Wrong way to pass env/input

```
▶ Run ./

▶ Run ./get-employee-js-action

▶ Fetch GitHub user info

▶ Fetch Slack user info

Warning: Unexpected input(s) 'slack-token', valid inputs are ['channel-id', 'slack-message', 'payload', 'payload-file-path', 'payload-file-path-parsed', 'update-ts']

▶ Run slackapi/slack-github-action@v1.26.0

Error: Error: Need to provide at least one botToken or webhookUrl
```

Troubleshooting Composite Actions

Wrong way to pass the token

action.yml

```yaml
- name: slack-send
  uses: slackapi/slack-github-action@v1.26.0
  with:
    channel-id: ${{ steps.get-employee-js.outputs.slack-user-id }}
    slack-message: "GitHub build result: ${{ job.status }}\n${{
github.event.pull_request.html_url || github.event.head_commit.url }}"
    slack-token: ${{ inputs.SLACK_BOT_TOKEN }}
```

Demo: Slack bot token

Usage

Add this Action as a [step](#) to your project's GitHub Action Workflow file:

```yaml
- name: Post to a Slack channel
  id: slack
  uses: slackapi/slack-github-action@v1.26.0
  with:
    # Slack channel id, channel name, or user id to post message.
    # See also: https://api.slack.com/methods/chat.postMessage#channels
    # You can pass in multiple channels to post to by providing a comma-delimited list of channel IDs.
    channel-id: 'CHANNEL_ID,ANOTHER_CHANNEL_ID'
    # For posting a simple plain text message
    slack-message: "GitHub build result: ${{ job.status }}\n${{ github.event.pull_request.html_url || g
  env:
    SLACK_BOT_TOKEN: ${{ secrets.SLACK_BOT_TOKEN }}
```

Troubleshooting Composite Actions

Wrong way to pass the token

action.yml

```yaml
- name: slack-send
  uses: slackapi/slack-github-action@v1.26.0
  with:
    channel-id: ${{ steps.get-employee-js.outputs.slack-user-id }}
    slack-message: "GitHub build result: ${{ job.status }}\n${{
github.event.pull_request.html_url || github.event.head_commit.url }}"
  env:
    SLACK_BOT_TOKEN: ${{ inputs.slack-bot-token }}
```

Demo: Slack channel ID

Demo: Slack channel ID

```
98    ▼ Fetch Slack user info
99      ##[debug]Looking up Slack user by email: kamran@hey.com
100     ##[debug]Found Slack user: U02FMV0D57T
101     ::endgroup::
102   ##[debug]Node Action run completed with exit code 0
103   ##[debug]Set output slack-user-id = U02FMV0D57T
104   ##[debug]Finished: run
105   ##[debug]Evaluating: inputs.slack-bot-token
106   ##[debug]Evaluating Index:
107   ##[debug]..Evaluating inputs:
108   ##[debug]..=> Object
109   ##[debug]..Evaluating String:
110   ##[debug]..=> 'slack-bot-token'
111   ##[debug]=> '***'
112   ##[debug]Result: '***'
113   ##[debug]Evaluating condition for step: 'run'
114   ##[debug]Evaluating: success()
115   ##[debug]Evaluating success:
116   ##[debug]=> true
117   ##[debug]Result: true
118   ##[debug]Starting: run
119   ##[debug]Loading inputs
120   ##[debug]Evaluating: steps.get-employee-js.outputs.slack-user-id
121   ##[debug]Evaluating Index:
122   ##[debug]..Evaluating Index:
123   ##[debug]....Evaluating Index:
124   ##[debug]......Evaluating steps:
125   ##[debug]......=> Object
126   ##[debug]......Evaluating String:
127   ##[debug]......=> 'get-employee-js'
128   ##[debug]....=> null
129   ##[debug]..=> null
130   ##[debug]=> null
131   ##[debug]Result: null
```

Troubleshooting Composite Actions

Missing step ID

```yaml
- id: get-employee-js
  uses: './get-employee-js-action'
  with:
    github-username: ${{ inputs.github-username }}
    github-token: ${{ inputs.github-token }}
    slack-token: ${{ inputs.slack-token }}
```

Demo: Action is successful (but still not right)

Troubleshooting Composite Actions

Missing step output

```yaml
- name: Print Slack Message Time
  run: echo "${{ steps.test-send-action.outputs.time }}"
```

Demo: Slack bot token

If you would like to notify the real-time updates on a build status, you can modify the message your build job posted in the subsequent steps. In order to do this, the steps after the first message posting can have `update-ts: ${{ steps.slack.outputs.ts }}` in their settings. With this, the step updates the already posted channel message instead of posting a new one.

Troubleshooting Composite Actions

Missing step output

action.yml

```yaml
outputs:
  time:
    description: 'The time the message was sent'
    value: ${{ steps.slack-send.outputs.ts }}

runs:
  using: composite
  steps:

  - id: slack-send
```

Demo: Action is successful

Demo: GitHub Actions extension