
NISTtheDocs2Death

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This [GitHub action](#)¹ uses the [Sphinx](#) tool to build documentation in <https://github.com/usnistgov> projects and then host that documentation on <https://pages.nist.gov>, as an approximation of [ReadTheDocs](#).

¹ Certain commercial firms and trade names are identified in this document in order to specify the installation and usage procedures adequately, or to provide context. Such identification is not intended to imply recommendation or endorsement by the [National Institute of Standards and Technology](#), nor is it intended to imply that related products are necessarily the best available for the purpose.

USAGE

- Configure your repo for publishing on pages.nist.gov.
- Enable GitHub Actions for your repo and select “Allow all actions and reusable workflows” (you may need to submit a request to devops@nist.gov to enable this for you).
- For each branch of your repository where you want to host documentation, add a workflow, such as `.github/workflows/NISTtheDocs2Death.yml`:

```
name: "Build Documentation"

on: [push, pull_request, delete]

jobs:
  docs:
    runs-on: ubuntu-latest
    steps:
      - uses: usnistgov/NISTtheDocs2Death@0.3
        with:
          docs-folder: docs/
          formats: |-
            epub
            pdf
```

1.1 NISTtheDocs2Death Action

This GitHub action uses the [Sphinx](#) tool to build documentation in <https://github.com/usnistgov> projects and then host on <https://pages.nist.gov> as an approximation of [ReadTheDocs](#).

1.1.1 Usage

This action is invoked by adding a workflow file to your repository, such as `.github/workflows/NISTtheDocs2Death.yml`:

```
name: "Build Documentation"

on: [push, pull_request, delete]

jobs:
  docs:
```

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```
runs-on: ubuntu-latest
steps:
  - uses: usnistgov/NISTtheDocs2Death@0.1
    with:
      docs-folder: docs/
      pages-branch: 'nist-pages'
      pages-url: 'https://pages.nist.gov'
      formats: ''
      build-html-command: make html
      build-epub-command: make epub
      build-pdf-command: make epub
      pre-build-command: ''
      pip-requirements: ''
      conda-environment: ''
```

1.1.2 Inputs

`docs-folder`

The folder containing your Sphinx configuration.

`pages-branch`

The branch linked to your documentation server.

`pages-url`

URL of the web server for served documentation.

`formats`

Type(s) of output desired in addition to html (pdf, and/or epub).

Note: GitHub Actions' YAML implementation does not support list or array elements, so use a multiline string to declare formats, e.g.,

```
formats: |-
  epub
  pdf
```

build-html-command

The command used by [usnistgov/sphinx-action](#) to build your html documentation.

build-epub-command

The command used by [usnistgov/sphinx-action](#) to build your ePUB documentation.

build-pdf-command

The command used by [usnistgov/sphinx-action](#) to build your PDF documentation.

pre-build-command

Run by [usnistgov/sphinx-action](#) before the build command. You can use this to install system level dependencies, for example, with “`apt-get update -y && apt-get install -y perl`”.

pip-requirements

The path to the pip requirements file, relative to the root of the project.

conda-environment

The path to the Conda environment file, relative to the root of the project.

1.1.3 Implementation

This action implements a [composite workflow](#) with the following major steps:

1. [actions/checkout](#)
2. *borg_the_docs Sub-Action*
3. [usnistgov/sphinx-action](#)
4. *update_pages Sub-Action*
5. [ad-m/github-push-action](#)
6. [actions/upload-artifact](#)

1.2 borg_the_docs Sub-Action

This [GitHub action](#) is invoked by the main *NISTtheDocs2Death Action* to modify the Sphinx configuration before building the documentation.

1.2.1 Usage

This action is invoked as a step of the composite workflow of the *NISTtheDocs2Death Action*. There is no reason to invoke this action yourself.

```
- name: Add cruft to theme
  id: borg-the-docs
  uses: ../../../../_actions/current/borg_the_docs
  with:
    docs-folder: 'docs/'
    pip-requirements: ''
    conda-environment: ''
```

Note: This action must be synchronized with the invoked version of the *NISTtheDocs2Death Action*, but “usnistgov/NISTtheDocs2Death/borg_the_docs@\${{ github.action_ref }}” doesn’t work, hence the clumsy `uses:` statement.

1.2.2 Inputs

docs-folder

The folder containing your Sphinx configuration.

pip-requirements

The path to the pip requirements file, relative to the root of the project.

conda-environment

The path to the Conda environment file, relative to the root of the project.

1.2.3 Outputs

borged-docs-folder

The folder containing the Sphinx configuration modified by this Action.

borged-build-folder

The folder containing the Sphinx build outputs.

1.2.4 Implementation

This action implements a [Docker workflow step](#). The Docker ENTRYPOINT installs any `requirements.txt` in the [Sphinx configuration directory](#), wraps the `conf.py` file with a `BorgedConfFile` object, and invokes `assimilate_theme()`.

API

```
borg_the_docs_action
```

borg_the_docs_action

Modules

1.3 update_pages Sub-Action

This [GitHub action](#) is invoked by the main *NISTtheDocs2Death Action* to move built documentation into your designated *pages-branch*.

1.3.1 Usage

This action is invoked as a step of the composite workflow of the *NISTtheDocs2Death Action*. There is no reason to invoke this action yourself.

```
- name: Commit documentation changes
uses: ../../../../actions/current/update_pages
with:
  docs-folder: 'docs/'
  default-branch: 'main'
  pages-branch: 'nist-pages'
  pages-url: 'https://pages.nist.gov'
  pip-requirements: ''
  conda-environment: ''
```

Note: This action must be synchronized with the invoked version of the *NISTtheDocs2Death Action*, but “`usnistgov/NISTtheDocs2Death/borg_the_docs@${{ github.action_ref }}`” doesn’t work, hence the clumsy `uses:` statement.

1.3.2 Inputs

docs-folder

The folder containing your Sphinx configuration.

default-branch

The [default branch](#), as configured on GitHub.

pages-branch

The branch linked to your documentation server.

pages-url

URL of the web server for served documentation.

pip-requirements

The path to the pip requirements file, relative to the root of the project.

conda-environment

The path to the Conda environment file, relative to the root of the project.

1.3.3 Implementation

This action implements a [Docker workflow step](#). The Docker ENTRYPOINT wraps the [Sphinx configuration directory](#) in a SphinxDocs object, wraps the GITHUB_REPOSITORY in a Repository object, and invokes `update_pages()`.

API

update_pages_action

update_pages_action

Modules

1.4 Design

1.5 Customization

NISTtheDocs2Death uses two sets of templates that determine the appearance of the hosted documentation.

1.5.1 borg_the_docs templates

The first set of templates is used by the *borg_the_docs Sub-Action* to modify the Sphinx configuration.

These templates can be customized by forking this repository.

`conf.py`

This template file overlays the `html_theme` you chose for your documentation with the `ntd2d` theme, described next.

`ntd2d/`

This template directory provides a `Sphinx theme` that modifies your chosen documentation theme.

`ntd2d/layout.html`

This template file inserts standard NIST headers and footers and a dropdown menu that allows selecting different versions of your documentation.

`ntd2d/static/ntd2d.css_t`

This template file controls the appearance of the dropdown menu.

1.5.2 update_pages templates

The second set of templates is used by the *update_pages Sub-Action* sub-action to create the pages on the hosting site that enable switching between different documentation variants.

You can customize any of these templates by copying them to a `_templates/` directory at the root of your *nist-pages* branch and editing them to suit.

These templates use `Python string format syntax` (Sphinx and pages.nist.gov already fight over Jekyll templating, so we're not getting fancy, here).

`downloads.html`

A section inserted into *menu.html* if a documentation variant has any downloadable output, e.g., PDF or ePUB.

Available substitution keywords are:

- `downloads`: A pre-formatted string with each downloadable output formatted by *download_item.html*.

`download_item.html`

Formats a link to a single downloadable output.

Available substitution keywords are:

- `href`: URL of the downloadable output.
- `kind`: Type of downloadable output, e.g., PDF or ePUB.

`index.html`

The default page for your documentation displayed at <https://pages.nist.gov/{repository}>.

Available substitution keywords are:

- `owner`: The GitHub [user](#) or [organization](#) for your repository.
- `repository`: The name of your repository.
- `variants`: The result of filling the *variants.html* template.

`menu.html`

The dropdown menu that allows selecting different branches and tags of your documentation.

Available substitution keywords are:

- `downloads`: The result of filling the *downloads.html* template.
- `tree_url`: The GitHub URL corresponding to the active tag or branch.
- `variant`: The name of the active tag or branch.
- `variants`: The result of filling the *variants.html* template.

`ntd2d_active.css`

Style sheet that controls the appearance of the active tag or branch in the dropdown menu.

Available substitution keywords are:

- `variant`: The name of the active tag or branch.

variants.html

Lists tags and branches that are *configured* to serve documentation with this Action.

Available substitution keywords are:

- **branches**: A pre-formatted string with each git branch formatted by *variant_item.html*.
- **latest**: A pre-formatted string with the HEAD of the default GitHub branch formatted by *variant_item.html*.
- **stable**: A pre-formatted string with the `stable_version` that has the highest version identifier, as formatted by *variant_item.html*.
- **stable_versions**: A pre-formatted string with the tags or branches that satisfy the **PEP 440** version specification and aren't *pre-releases*, each formatted by *variant_item.html*.
- **versions**: A pre-formatted string with the tags or branches that satisfy the **PEP 440** version specification, each formatted by *variant_item.html*.

variant_item.html

Formats a link to a single tag or branch.

Available substitution keywords are:

- **href**: URL of the downloadable output.
- **kind**: Type of downloadable output, e.g., PDF or ePUB.

1.6 Q & A

1.6.1 Can't I just use Read the Docs?

Nope.

1.6.2 Is there a reason?

Yep.

1.6.3 Is it a good reason?

Nope.

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