

Docs as Part of the Product

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@denniscode

Who am I?

- Program Manager at Microsoft
- Based in Vancouver
- Helping drive:
 - API Documentation
 - Samples
 - Interactive Experiences



State of Documentation

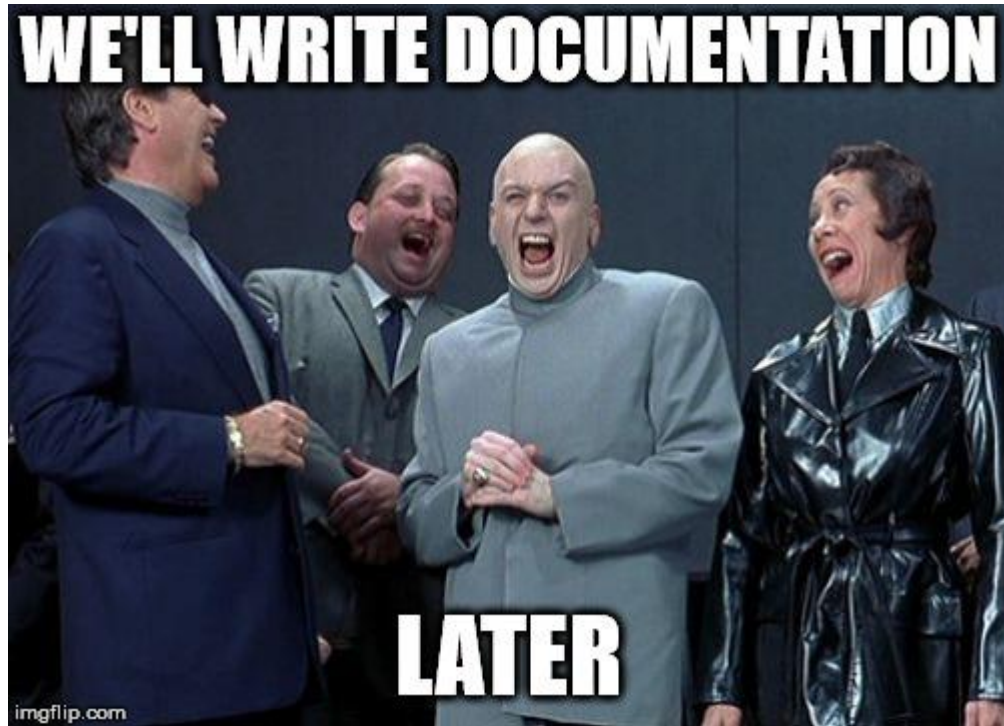
State of Documentation

- **What we expect** from doc experiences
 - Up-to-date and always reflecting the true state of the product.
 - Comprehensive.
 - Easy to edit.
 - Intuitive search and discovery.
 - Connected to the communities inside and outside the company.
 - Rich, interactive presentation.

State of Documentation

- **What we get** from doc experiences
 - Out-of-date – generated once and forgotten.
 - Inaccurate API docs written by hand.
 - Maintained in content silos.
 - Scattered – every team has their own site with their own format and publishing pipeline.
 - Search is bad due to fragmentation.
 - Text and basic media (images).

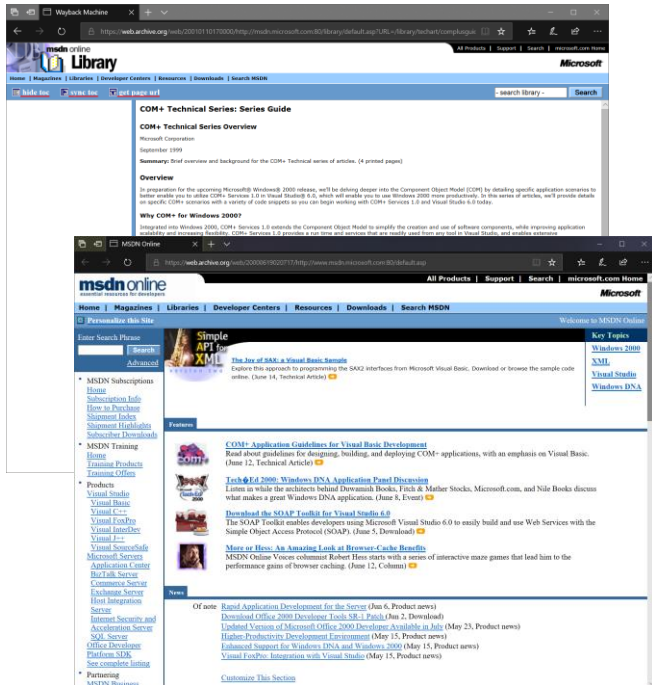
State of Documentation



Looking Back

Looking Back

- Started with the goal to be the one true place for all Microsoft developer resources.
- Powered by a closed, proprietary publishing system.
- Content stored in an internal XML flavor.



Looking Back

- Brittle code base not designed for the cloud.
- Everything is manually written – almost zero automation.
- Complicated process to update and publish content – sometimes it took days, if not weeks.
- Teams outgrew MSDN, held back by the its update velocity – new sites started appearing.

Docs: The New Hope

Docs: The New Hope

- One doc site to rule them all – unify documentation for all company.
- Start from zero, for the cloud, from the cloud.
- Automate all the things.
- Open, using standard open-source tools and formats.
- Global by default – 64 locales built-in.
- We don't know the right way – but we can experiment.



Docs: The New Hope

- Consistent editing experience – Markdown is the golden standard.
- Integrated in API reference (part of Javadoc comments, Swagger specs and Python docstrings).
- Edit directly in GitHub or favorite editor.
- Easily preview changes.

Docs: The New Hope

Getting started | Micros x + v

https://docs.microsoft.com/en-us/python/cognitive-toolkit/gettingstarted?view=cntk-py-2.5.1

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Docs / Cognitive Toolkit Python API Feedback Edit Share Dark

Cognitive Toolkit Python API 2.5.1

Filter by title

- ▼ Cognitive Toolkit Python (2.5.1)
 - Setup and installation
 - Getting Started
 - Tutorials
 - Examples
 - Working with Sequences
 - Readers, Multi-GPU, Profiling...
 - Extending CNTK
 - Layers Library Overview
- > Reference

Getting started

05/31/2017 • 5 minutes to read • Contributors

You can optionally try the [tutorials](#) with pre-installed CNTK running in Azure Notebook hosted environment (for free) if you have not installed the toolkit in your own machine.

If you are coming from another deep learning toolkit you can start with an [overview for advanced users](#).

If you have installed CNTK on your machine, after going through the [installation steps](#), you can start using CNTK from Python right away (don't forget to [activate](#) your Python environment if you did not install CNTK into your root environment):

```
Python Copy
>>> import cntk
>>> cntk.__version__
'2.5.1'

>>> cntk.minus([1, 2, 3], [4, 5, 6]).eval()
array([-3., -3., -3.], dtype=float32)
```

The above makes use of the CNTK `minus` node with two array constants. Every operator has an `eval()` method that runs a forward pass for that node using its inputs, and returns the result. A slightly more interesting example that uses input variables (the more common case) is as follows:

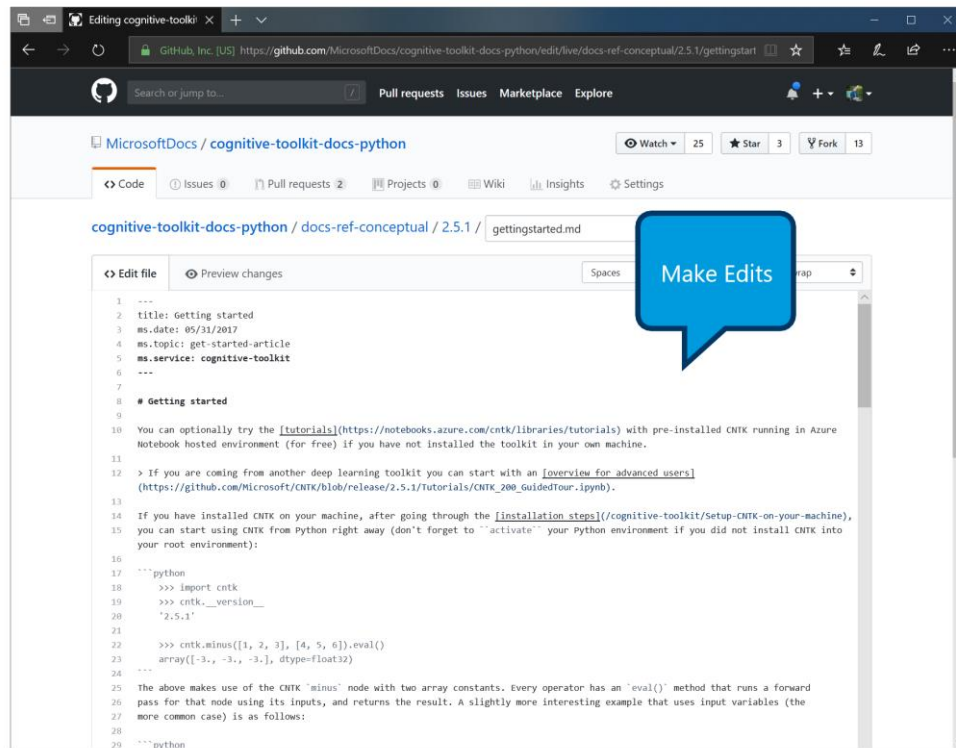
```
Python Copy
>>> import numpy as np
>>> x = cntk.input_variable(2)
```

In this article
[Overview and first run](#)

Click Edit

Is this page helpful?
Yes No

Docs: The New Hope



Editing cognitive-toolkit x + v

GitHub, Inc. [US] https://github.com/MicrosoftDocs/cognitive-toolkit-docs-python/edit/live/docs-ref-conceptual/2.5.1/gettingstart

Search or jump to... Pull requests Issues Marketplace Explore

MicrosoftDocs / cognitive-toolkit-docs-python Watch 25 Star 3 Fork 13

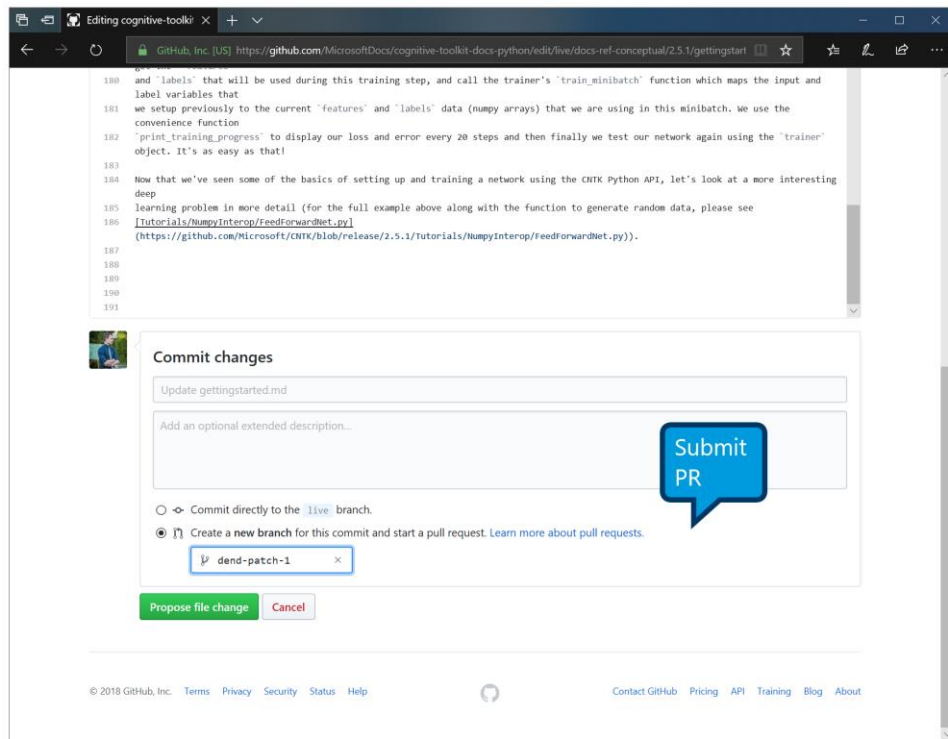
Code Issues 0 Pull requests 2 Projects 0 Wiki Insights Settings

cognitive-toolkit-docs-python / docs-ref-conceptual / 2.5.1 / gettingstarted.md

Edit file Preview changes Spaces Make Edits rap

```
1 ---
2 title: Getting started
3 ms.date: 05/31/2017
4 ms.topic: get-started-article
5 ms.service: cognitive-toolkit
6 ---
7
8 # Getting started
9
10 You can optionally try the \[tutorials\](https://notebooks.azure.com/cntk/libraries/tutorials) with pre-installed CNTK running in Azure
11 Notebook hosted environment (for free) if you have not installed the toolkit in your own machine.
12
13 > If you are coming from another deep learning toolkit you can start with an \[overview for advanced users\]
14 (https://github.com/Microsoft/CNTK/blob/release/2.5.1/Tutorials/CNTK_200_GuidedTour.ipynb).
15
16 If you have installed CNTK on your machine, after going through the \[installation steps\](cognitive-toolkit/Setup-CNTK-on-your-machine),
17 you can start using CNTK from Python right away (don't forget to activate your Python environment if you did not install CNTK into
18 your root environment):
19
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21 >>> import cntk
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26 array([-3., -3., -3.], dtype=float32)
27 ---
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29 pass for that node using its inputs, and returns the result. A slightly more interesting example that uses input variables (the
30 more common case) is as follows:
31
32 ```python
```

Docs: The New Hope



Editing cognitive-toolkit x + v

GitHub, Inc. [US] <https://github.com/MicrosoftDocs/cognitive-toolkit-docs-python/edit/live/docs-ref-conceptual/2.5.1/gettingstart>

```
180 and 'labels' that will be used during this training step, and call the trainer's 'train_minibatch' function which maps the input and
181 label variables that
182 we setup previously to the current 'features' and 'labels' data (numpy arrays) that we are using in this minibatch. We use the
183 convenience function
184 'print_training_progress' to display our loss and error every 20 steps and then finally we test our network again using the 'trainer'
185 object. It's as easy as that!
186
187 Now that we've seen some of the basics of setting up and training a network using the CNTK Python API, let's look at a more interesting
188 deep
189 learning problem in more detail (for the full example above along with the function to generate random data, please see
190 Tutorials/NumpyInterop/feedforwardnet.py
191 (https://github.com/Microsoft/CNTK/blob/release/2.5.1/tutorials/NumpyInterop/feedforwardnet.py)).
```

Commit changes

Update gettingstarted.md

Add an optional extended description...

☐ Commit directly to the `live` branch.

☒ Create a new branch for this commit and start a pull request. [Learn more about pull requests.](#)

`dend-patch-1`

Submit PR

[Propose file change](#) [Cancel](#)

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Docs: The New Hope

- Automation at the heart of the publishing process
 - **API Doc Tooling** (Node, Java, Python, .NET, REST, PowerShell, CLI)
 - **Content Build and Validation**
 - **Content Testing Suite** (404s, orphaned pages, SEO compliance)
 - **GitHub Bots** (automatically merge PRs, channel external feedback to internal bug tracker)
 - **Sample Code Testing**

Docs: The New Hope

- Making URLs readable

[https://msdn.microsoft.com/en-us/library/8ehhxeaf\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/8ehhxeaf(v=vs.110).aspx)



<https://docs.microsoft.com/dotnet/api/system.collections.generic.icomparer-1>

Docs: The New Hope

- Convention over configuration – we infer content structure from folders in GitHub.
- **/content/test.md** becomes **docs.microsoft.com/cloud/content/test**
- Easy to set up redirects when things change, directly from the repo – broken links are much easier to fix.

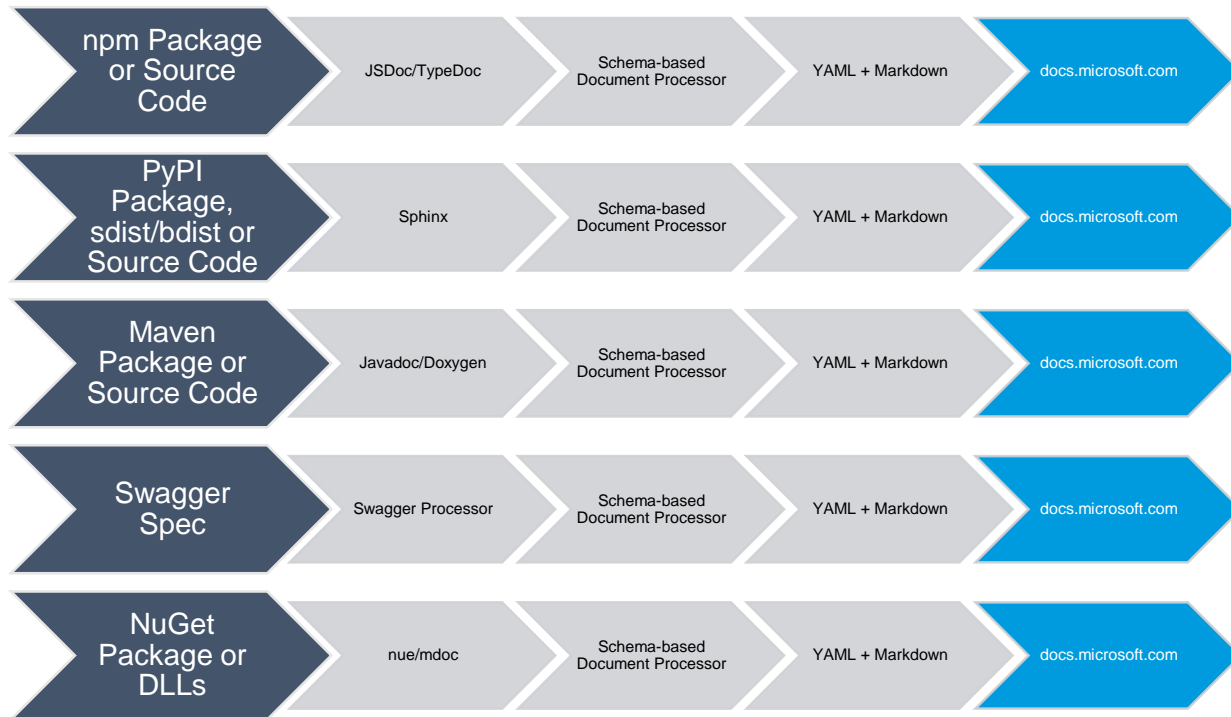
Docs: The New Hope

- Content Versioning
 - No “burning in” into the URL.
 - Ensures URL consistency even when new versions are released.
 - Easily discoverable.
 - Reduces friction and broken links.
 - Using query param - ?view={moniker}

Docs: The New Hope

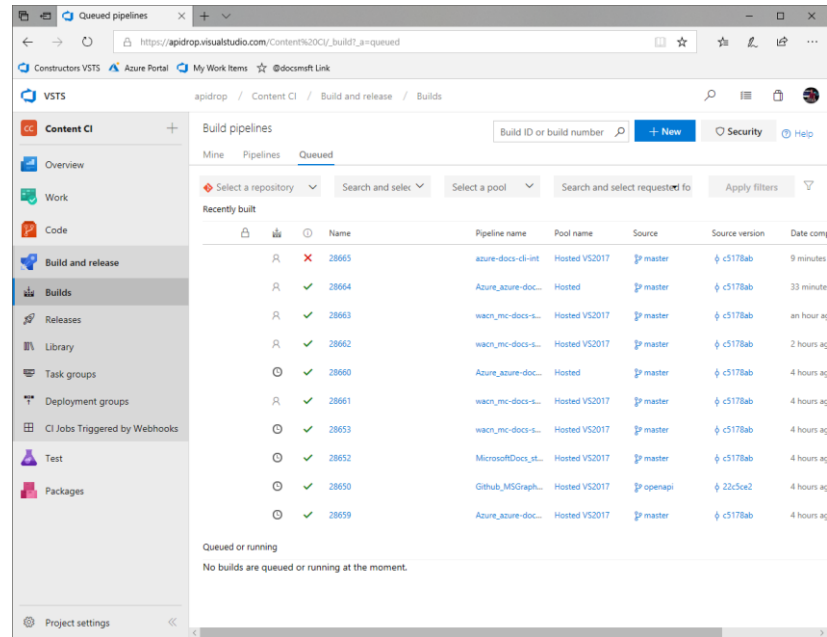
- API documentation discoverable from one place – the API Browser.
- No need to hop between N+1 sites to find the API.
- Semantic understanding of the APIs.
- Reduce discovery and documentation friction.
- Provide the artifacts (npm, pypi, source) and the docs are staged automatically.
- Intertwined with human-edited content.

Docs: The New Hope



Docs: The New Hope

- **28K+** API documentation CI executed in the past year.
- **10MM+** lines of auto-generated docs dropped into GitHub.



Docs: The New Hope

- This powers:
 - **9.5K+** JavaScript API documentation pages
 - **55K+** Java API documentation pages
 - **16K+** Python API documentation pages
 - **15K+** REST API documentation pages
 - **499K+** .NET API documentation pages

Docs: The New Hope

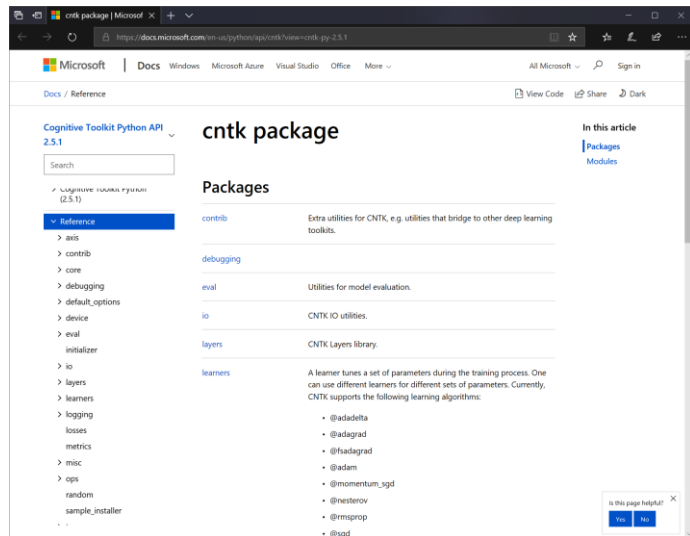


- Builds run multiple times a day.
- Always documenting public latest versions of APIs in addition to secondary (supported) versions.

Docs: The New Hope

- All API docs have standard URL patterns
 - /python/api/{package-name}/{entity}
 - /java/api/{entity-qualified-name}
 - /javascript/api/{package-name}/{entity}
 - /rest/api/{product}/{op-group}/{operation}
 - /cli/{product}/{command}

Docs: The New Hope



- Documentation linked to source code.
- Switch between versions on the fly.
- Logically grouped API entities in the table of contents.
- Grouping generated automatically – no human ever does that.
- Allows us to scale to 10K+ APIs in minutes.

Docs: The New Hope

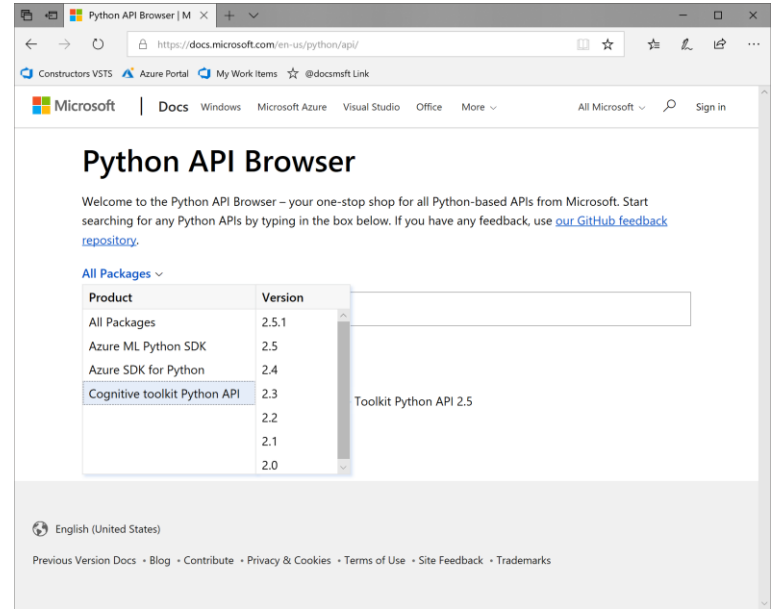
- Contracts over hand-crafted documents.
- Schema defines entities and overall hierarchy.
- Template globally applied.
- Driving consistency in presentation.
- Updates don't break existing documentation.

Docs: The New Hope

- Generate any post-processing artifacts after build – IntelliSense and cross-reference files.
- Artifacts can be used by product teams (Javadoc to be shipped with product).

Docs: The New Hope

- Structured documentation enables us to power rich API discovery experiences.
- Find the necessary API in seconds.
- Search across all products in a platform.
- IDE “auto-suggest” – in a search experience.



Beyond Text

Beyond Text

NEWS

Nation Shudders At Large Block Of Uninterrupted Text

3/09/10 5:00pm • SEE MORE: SCIENCE & TECHNOLOGY ▾



The giant mass of prose was devoid of so much as a large pulled quote for readers to glance at before moving on.

WASHINGTON—Unable to rest their eyes on a colorful photograph or boldface heading that could be easily skimmed and forgotten about, Americans collectively recoiled Monday when confronted with a solid block of uninterrupted text.

([sourced from The Onion](#))

Beyond Text

- Good documentation is not a wall of text.
- Reducing friction from reading to trying – how can we allow you to see how things work in seconds?
- Structured content allows us to understand *where* we can enable interactivity.

Beyond Text

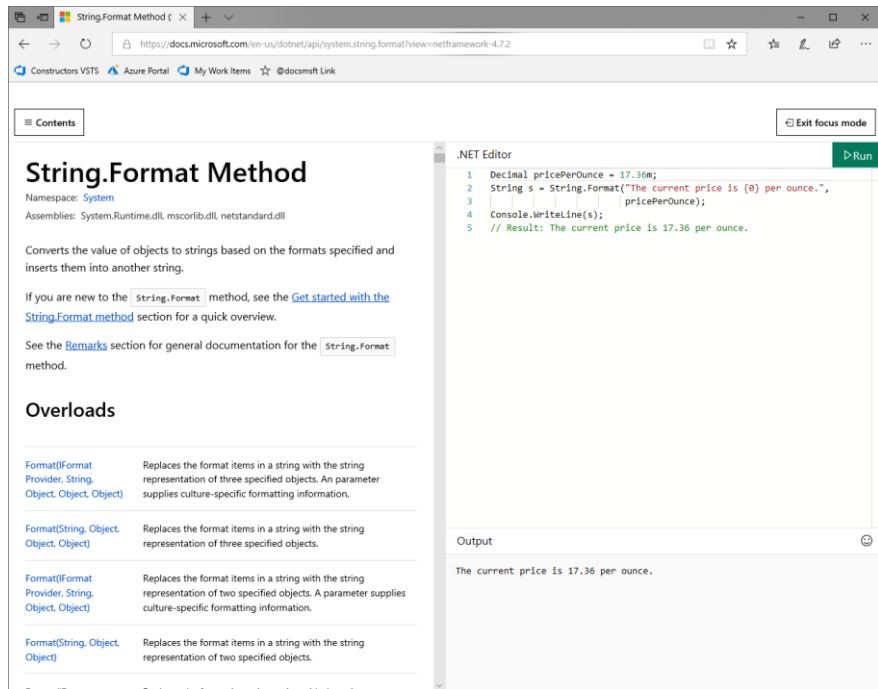
The screenshot shows a web browser window with the URL `https://docs.microsoft.com/en-us/rest/api/aks/managedclusters/createorupdate`. The page title is "Managed Clusters - Create Or Update". Below the title, it says "Service: AKS" and "API Version: 2018-03-31". The description states: "Creates or updates a managed cluster." and "Creates or updates a managed cluster with the specified configuration for agents and Kubernetes version." There is a "Try It" button. Below the description, there is a "URI Parameters" table.

Name	In	Required	Type	Description
subscriptionId	path	True	string	Subscription credentials which uniquely identify Microsoft Azure subscription. The subscription ID forms part of the URI for every service call.
resourceGroupName	path	True	string	The name of the resource group.
resourceName	path	True	string	The name of the resource.

Below the table, there is a "Request URL" section with a "PUT" method and a URL: `https://management.azure.com/subscriptions/{subscriptionId}/res`. There are "Parameters" and "Headers" sections with input fields for values like "subscriptionId", "resourceGroupName", "resourceName", "api-version", "Content-Type", and "name".

- REST “Try It”
- Powered by Swagger specs.
- Run REST calls from a documentation page.
- Instantly see output, with no apps involved.

Beyond Text



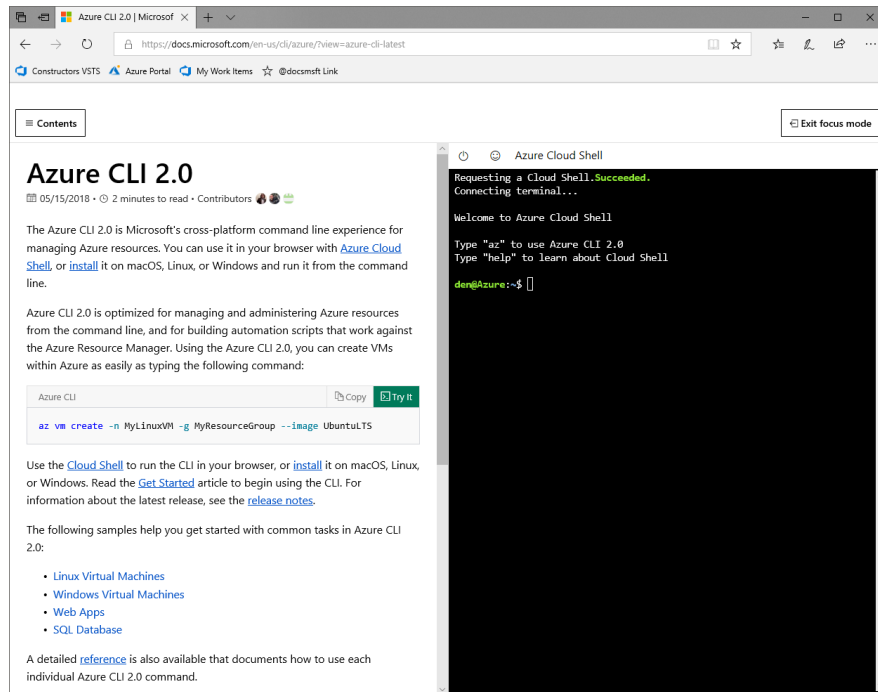
The screenshot shows the .NET Editor interface. On the left, the 'Contents' pane displays the 'String.Format Method' documentation, including its namespace (System), assemblies, and a description of its function. Below this, the 'Overloads' section lists four different signatures for the method. On the right, the '.NET Editor' pane shows a C# code snippet that uses the String.Format method to format a string. The code is as follows:

```
1 Decimal pricePerOunce = 17.36m;  
2 String s = String.Format("The current price is {0} per ounce.",  
3     pricePerOunce);  
4 Console.WriteLine(s);  
5 // Result: The current price is 17.36 per ounce.
```

Below the code, the 'Output' pane shows the result of the execution: 'The current price is 17.36 per ounce.'

- .NET REPL
- Run C# code in a stateless container.
- Zero friction to get started – no auth required.
- Any C# snippet can integrate it.

Beyond Text



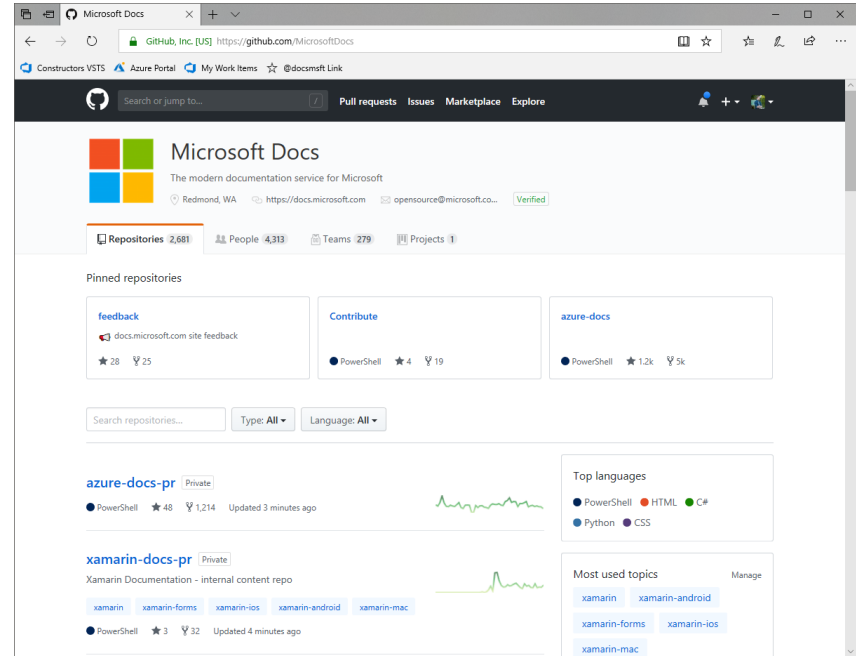
The screenshot shows a web browser displaying the Azure CLI 2.0 documentation page on the left and the Azure Cloud Shell interface on the right. The documentation page, titled "Azure CLI 2.0", describes it as Microsoft's cross-platform command line experience for managing Azure resources. It includes a "Try it!" button with a code snippet: `az vm create -n MyLinuxVM -g MyResourceGroup --image Ubuntu15`. The right-hand side shows the Azure Cloud Shell terminal, which displays a welcome message and the prompt `den@Azure:~$`.

- Azure Cloud Shell
- Linux in the browser.
- Works with Bash and PowerShell Core.
- Stateful container connected to Azure subscription.

Focus on Community

Focus on Community

- **2.5K+** repositories
 - **1.1K+** public
- **4.3K+** internal members
- A huge shift in how the entire company sees documentation and contributions to open source.



Focus on Community

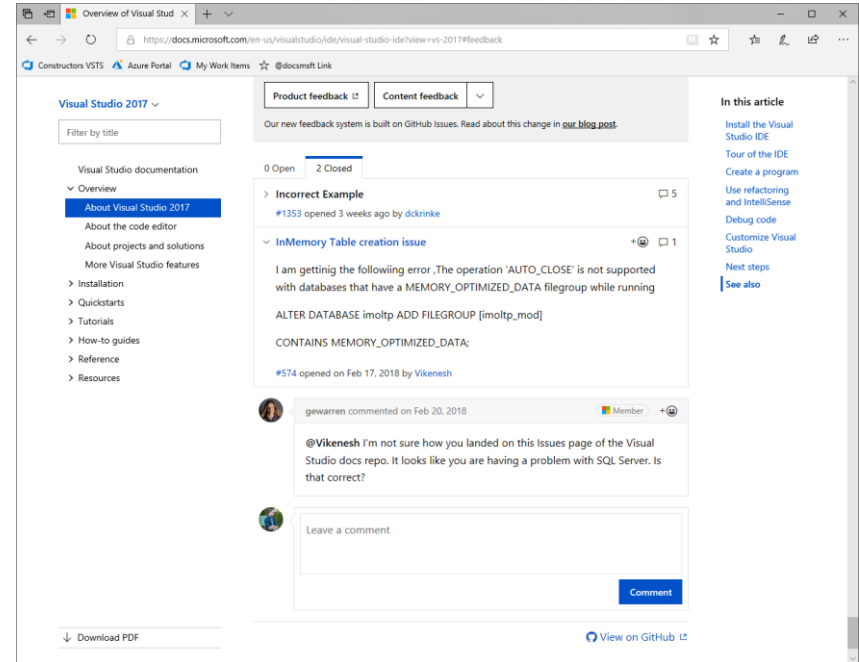


(stats courtesy of GitHub)

- A lot of our projects were moved over to GitHub (VSCode, TypeScript, .NET, Monaco Editor).
- Natural place to have documentation, with a huge community of passionate developers.

Focus on Community

- Shifting feedback from silo-ed platforms to be open.
- GitHub Issues – for content and site feedback.
- Documentation is treated like a product – doc issue = bug.



Focus on Community

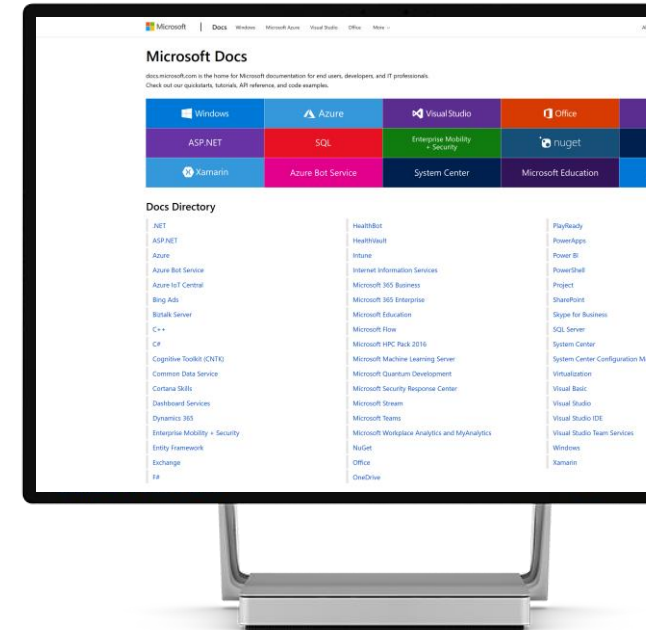
- Key learning – transparency matters.
- Your customers know their needs better than you do – talk to them. All the time.
- Working with your community is not the same as asking them to do the work for you.
- Fostering the community and building trust takes time – coaching them on best practices and approaches is important.

Focus on Community

- Automation is your friend (again)
 - Contribution License Agreements (CLAs)
 - PR reviews (*“Is my PR changing the right things?”*)
 - Content build validation (*“Is what I added causing issues?”*)
 - Test any inserted code (*“Does it build?”*)

Overview

	Before		After	
Open Source Docs	✗	No	+	Yes
Localization	✗	Poor	+	64 Languages
Mobile Support	✗	None	+	Major platforms
Accessibility	—	Varied	+	Built-in
Content Location	—	Fragmented	+	Unified
Sample Testing	—	Sparse	+	Automated CI
API Docs	✗	Manual	+	Automatic
Feedback	—	Varied, closed	+	GitHub
Analytics	—	Fragmented	+	Unified
Engineering	✗	Duplicated	+	Shared



Handling Legacy Resources

Handling Legacy Resources



Expectation



Reality

Handling Legacy Resources

- Mo' sites, mo' problems.
- Not as simple as simple as shutting the old site down in favor of the new one.
- Content migration takes time – you will discover problems. A lot of problems.
- Redirection is important – customers don't like broken links. Neither do search engines.
- Links are “baked into” products over years – you don't want to break those.

Handling Legacy Resources

- You will inevitably get feedback that “old was better” – that’s not a cue to rebuild the old experience on the new site.
- Communication is important – set expectations.
- Habits die hard – it will take time for people to rely on new workflows.

Contact & Resources



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@docsmsft



<https://docs.microsoft.com>



<https://aka.ms/docfx>



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