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Pywbem
Installation and Set-up

Michael Walker

November 7, 2021

Disclaimer

The purpose of this presentation is to provide information on installing code and data in order to run a set of SMI-S 1.8.0 mock WBEM Servers. The presentation describes the process for Windows but there are similar steps for installing code and data on Linux.

There also is some discussion of SMI-S Quick Start Guides which are pywbemcli scripts for accessing important data from WBEM Servers that support SMI-S 1.8.0. But the details of the guides will be addressed in other presentations.

Sessions

- Install Python, Python Virtual Environments, PyWBEM & PyWBEMTools
- Installing mock environments for SMI-S 1.8.0
- SMI-S 1.8.0 Quick Start Guides

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Install Python 3, Python Virtual Environments, PyWBEM & PyWBEMTools

Install Python 3 (windows)

- Go to https://www.python.org/downloads/
- Download the latest version (Python 3.8.5)
- Run python-3.8.5.exe
  - Check install launcher for all users
  - Check add python 3.8 to PATH
  - Click on Install Now
- To verify the installation, check the version from command prompt:
  - C:\> python --version
- We also recommend downloading the documentation
  - Go to https://docs.python.org/3/download.html
  - Download your favorite format (e.g., pdf, html, etc)

Install Python Virtual Environments

- After installing Python, run:
  - C:\> pip install virtualenv
  - C:\> pip install virtualenvwrapper-win
- Once installed, you can define your virtual environments (and initialize their directories)
  - C:\> mkvirtualenv -a devenv mocks
    - Creates a virtual environment (mocks) using a directory /devenv
- To see what environments have been defined:
  - C:\> workon
- To work in the virtual environment:
  - C:\> workon mocks

Install Pywbem (pip install)

- Go to your virtual environment
  - Workon mocks
- Pip install pywbem
  - (mocks) C:\> pip install pywbem
- For more details, see:
  - https://pywbem.readthedocs.io/en/latest/intro.html#installation

Install PyWBEM Tools

- Go to your virtual environment
  - Workon mocks
- Pip install pywbemtools
  - (mocks) C:\> pip install pywbemtools
- For more details, see:
  - https://pywbemtools.readthedocs.io/en/latest/

Install supplied mock environments

Clone the mock environments

- Go to the repo of mocks
  - https://github.com/FarmerMike252/SMI-S_Mocks
- Perform git init in a directory on your system
  - C:\> git init
- Clone the repo to your system
  - C:\> git clone https://github.com/FarmerMike252/SMI-S_Mocks.git

If you have any comments or questions on anything in the SMI-S_Mocks repo, please open an issue and I will try to respond in a timely fashion.

Running a mock

- Copy the 3 mock files of a profile to your virtual environment
  - Such as the devenv directory defined in an earlier slide
- Go to your virtual environment
  - C:\> workon mocks
- Start and save your mock
  - (mocks) C:\devenv> pywbemcli -m ArrayMockLoad.py --default-namespace interop
  - (mocks) pywbemcli> connection save ArrayMock
- Once it is saved it can be started with:
  - (mocks) C:\devenv> pywbemcli -o table -n ArrayMock
- Issue a pywbemcli command to finish the setup (it will take some time)
  - Pywbemcli> instance get CIM_System.? --pl CreationClassName,Name

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SMI-S Quick Start Guides

What is a Quick Start Guide?

SMI-S is 2516 pages of reading spread across 8 books, plus it references another 14 or so DMTF profiles which amount to another 660 pages of reading. So, the question is where do you start?

We have come up with a series of Quick Start Guides that are designed to help you get started by illustrating how to find useful SMI-S information in mock servers (mock ups of SMI-S server implementations). The Quick Start Guides don't illustrate EVERYTHING in the 3176 pages, but they give you a head start at finding some important items in SMI-S.

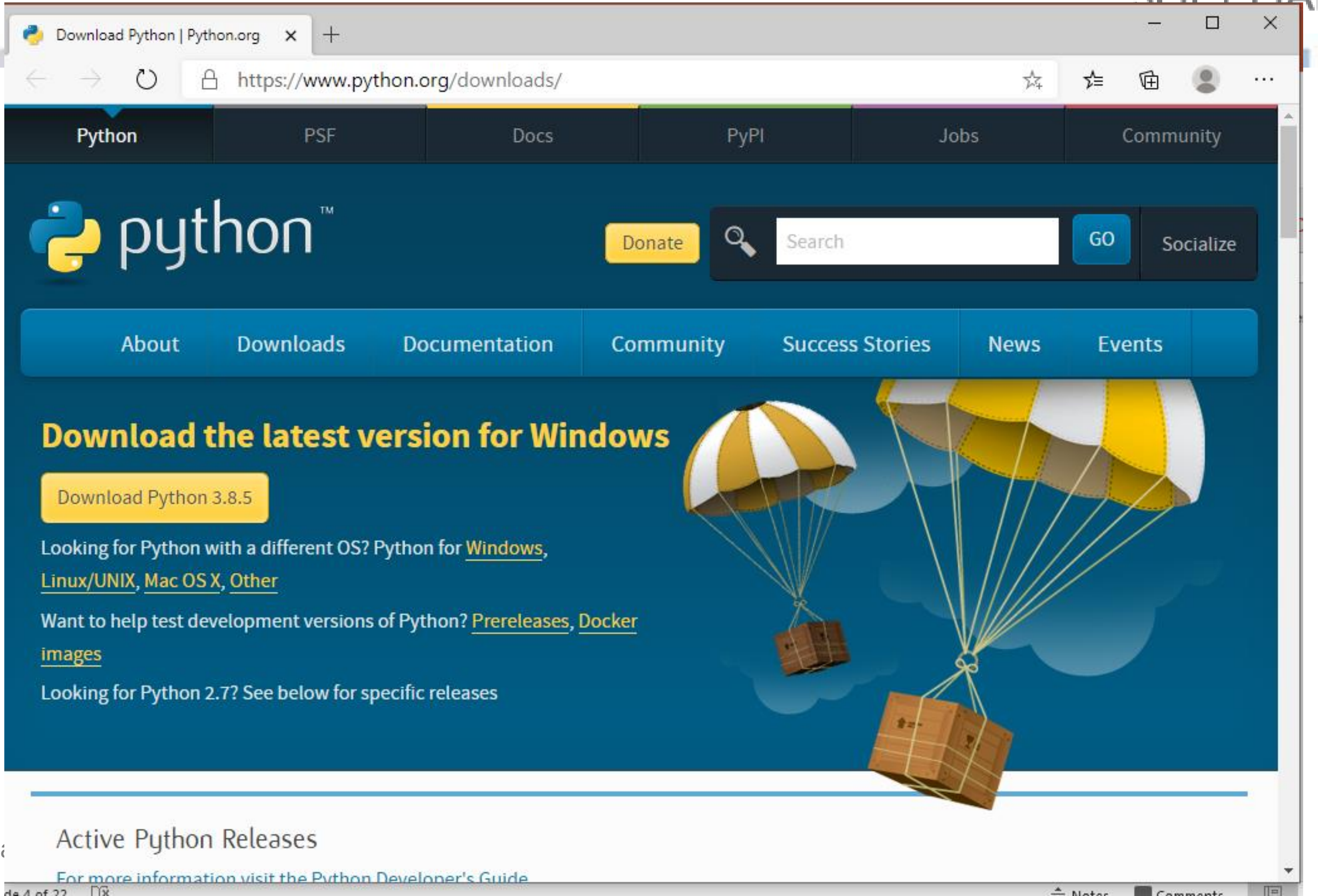
What do they cover?

We currently have quick start guides for:

1. **The Interop Namespace** - What is it and what does it tell us?
2. **Performance Information** - Where do I find performance information in an SMI-S Server?
3. **Capacity Information** - Where do I find storage capacity information in an SMI-S Server?
4. **Hardware Information** - Where do I find hardware information in an SMI-S Server?
5. **Product Information** - Where do I find product information in an SMI-S Server?
6. **Software Information** - Where do I find software information in an SMI-S Server?

Screen Shots

Python Download



Download the latest version for Windows

Download Python 3.8.5

Looking for Python with a different OS? Python for Windows, Linux/UNIX, Mac OS X, Other

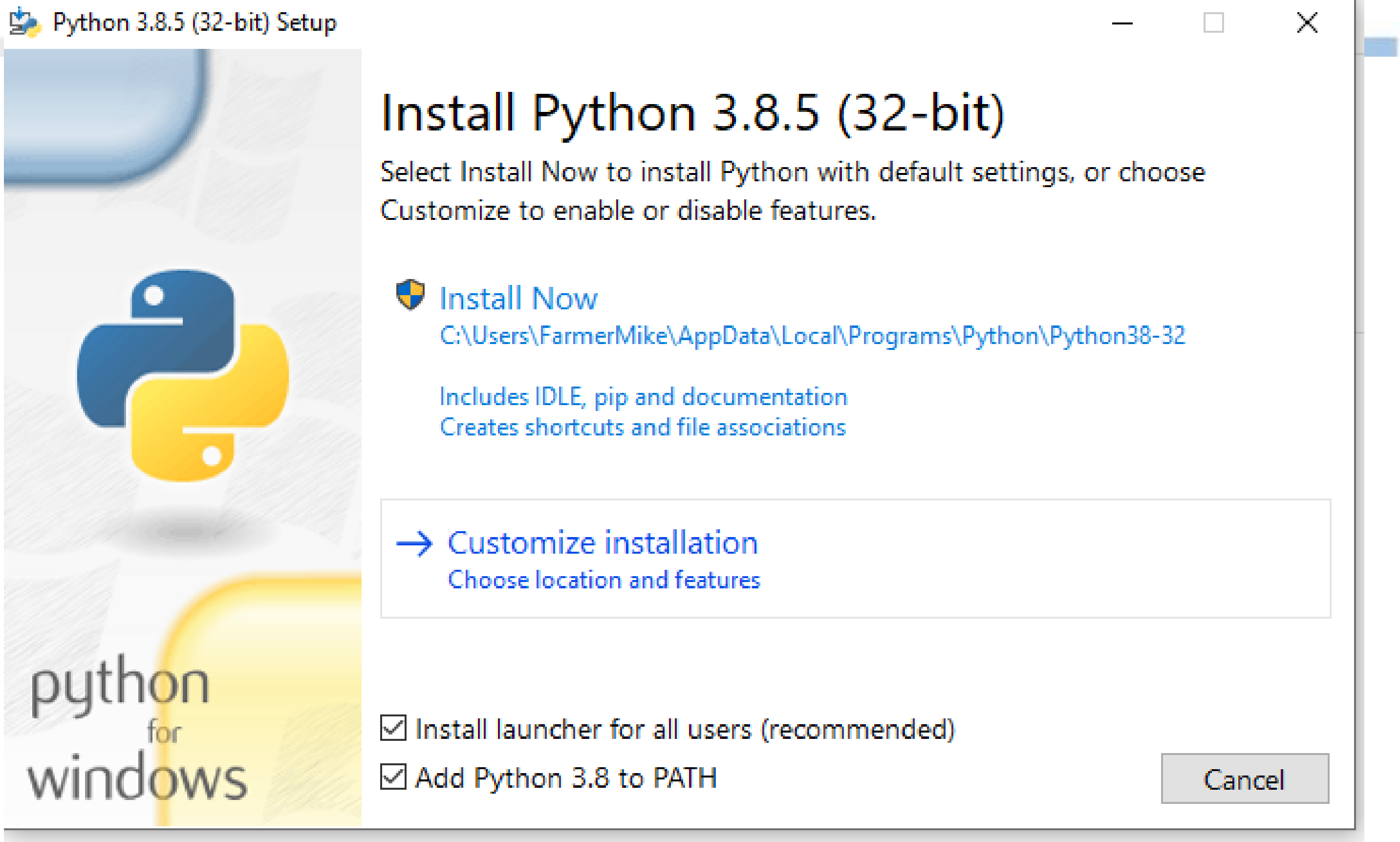
Want to help test development versions of Python? Prereleases, Docker images

Looking for Python 2.7? See below for specific releases

Active Python Releases

For more information visit the Python Developer's Guide

Python install screen



Python 3.8.5 (32-bit) Setup

Install Python 3.8.5 (32-bit)

Select Install Now to install Python with default settings, or choose Customize to enable or disable features.

Install Now
C:\Users\FarmerMike\AppData\Local\Programs\Python\Python38-32

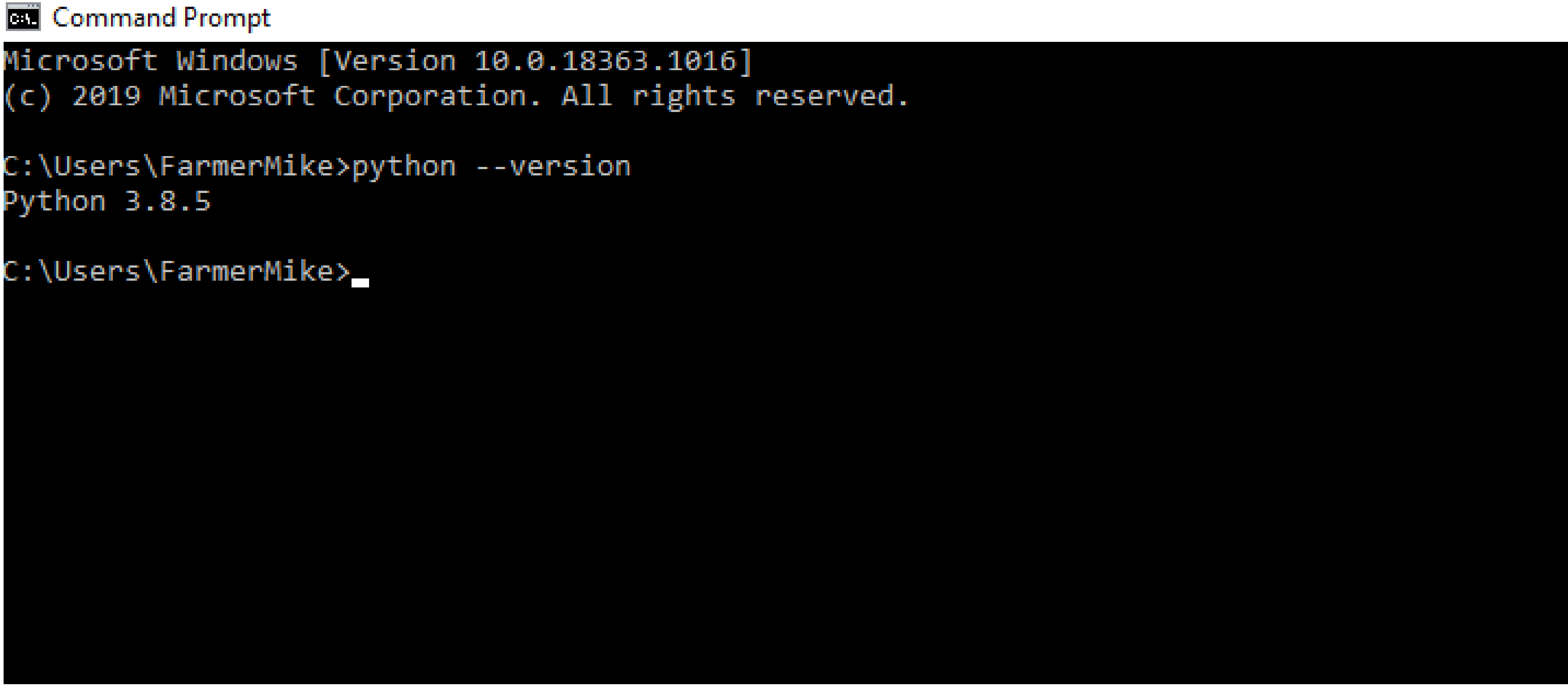
Includes IDLE, pip and documentation
Creates shortcuts and file associations

→ Customize installation
Choose location and features

☑ Install launcher for all users (recommended)

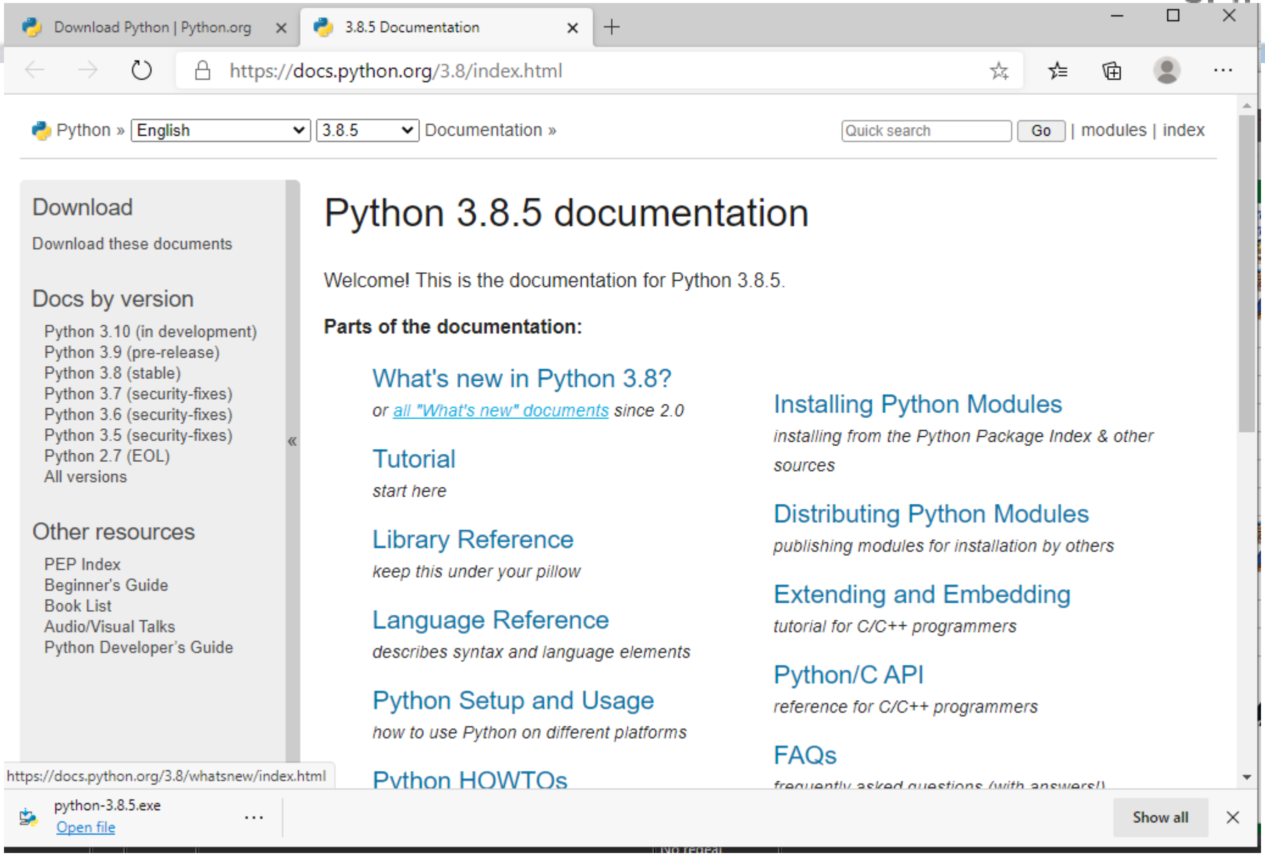
☑ Add Python 3.8 to PATH

Python Version



```
Microsoft Windows [Version 10.0.18363.1016]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\FarmerMike>python --version
Python 3.8.5

C:\Users\FarmerMike>
```

Python Documentation


Download Python | Python.org
3.8.5 Documentation
https://docs.python.org/3.8/index.html
Python » English 3.8.5 Documentation »
Quick search
Go
| modules | index
«
https://docs.python.org/3.8/whatsnew/index.html
python-3.8.5.exe
Open file
Show all

Download

Download these documents

Docs by version

- Python 3.10 (in development)
- Python 3.9 (pre-release)
- Python 3.8 (stable)
- Python 3.7 (security-fixes)
- Python 3.6 (security-fixes)
- Python 3.5 (security-fixes)
- Python 2.7 (EOL)
- All versions

Other resources

- PEP Index
- Beginner's Guide
- Book List
- Audio/Visual Talks
- Python Developer's Guide

Python 3.8.5 documentation

Welcome! This is the documentation for Python 3.8.5.

Parts of the documentation:

What's new in Python 3.8?
or all "What's new" documents since 2.0

Tutorial
start here

Library Reference
keep this under your pillow

Language Reference
describes syntax and language elements

Python Setup and Usage
how to use Python on different platforms

Python HOWTOs

Installing Python Modules
installing from the Python Package Index & other sources

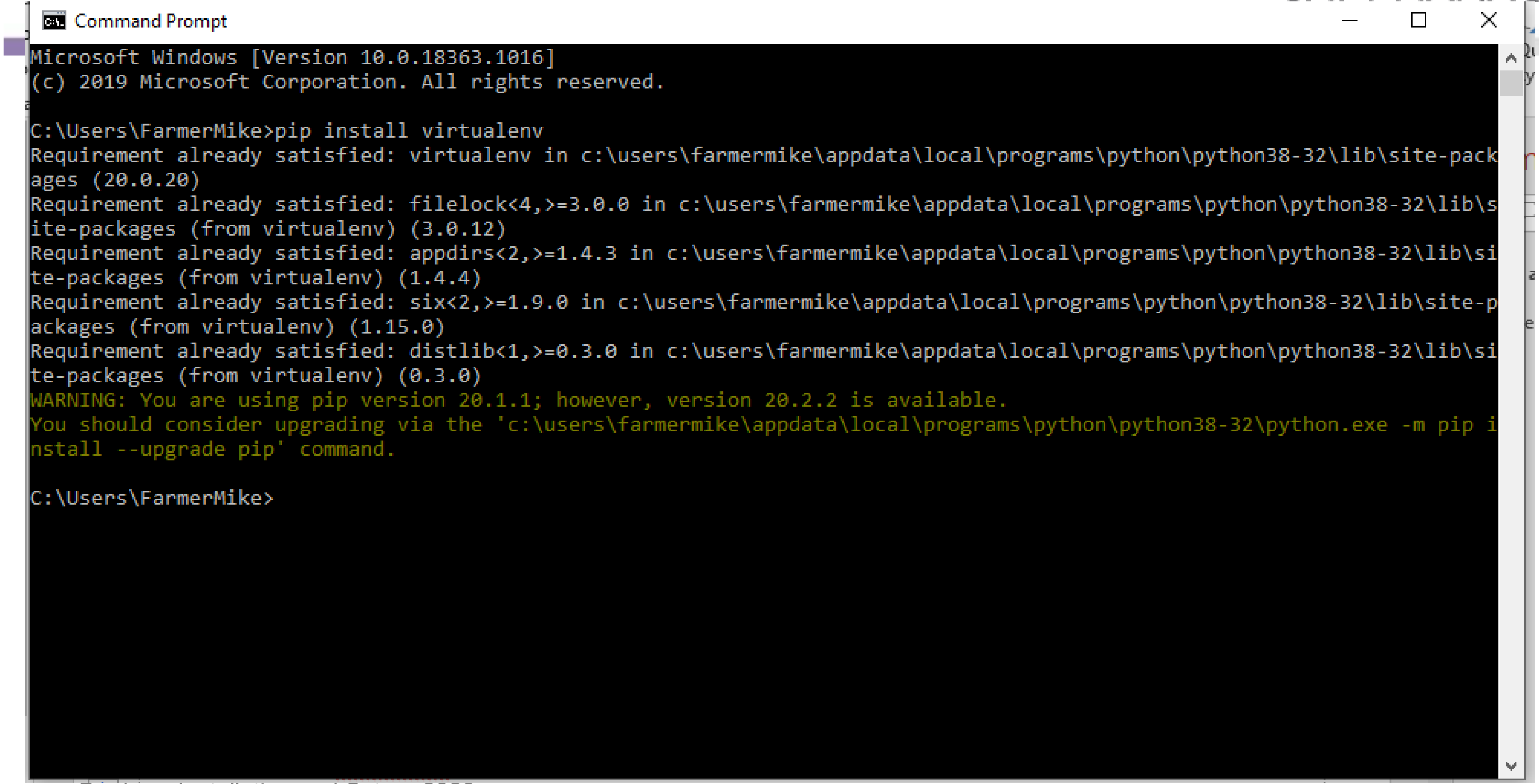
Distributing Python Modules
publishing modules for installation by others

Extending and Embedding
tutorial for C/C++ programmers

Python/C API
reference for C/C++ programmers

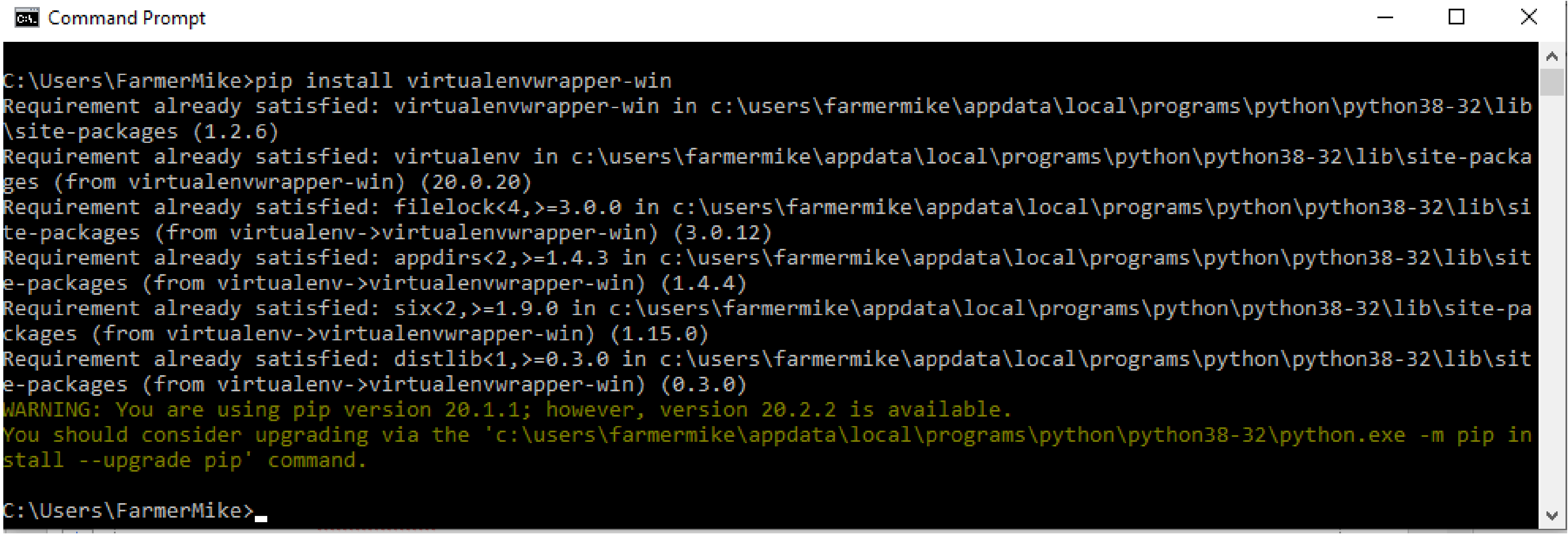
FAQs
frequently asked questions (with answers!)

Install virtualenv



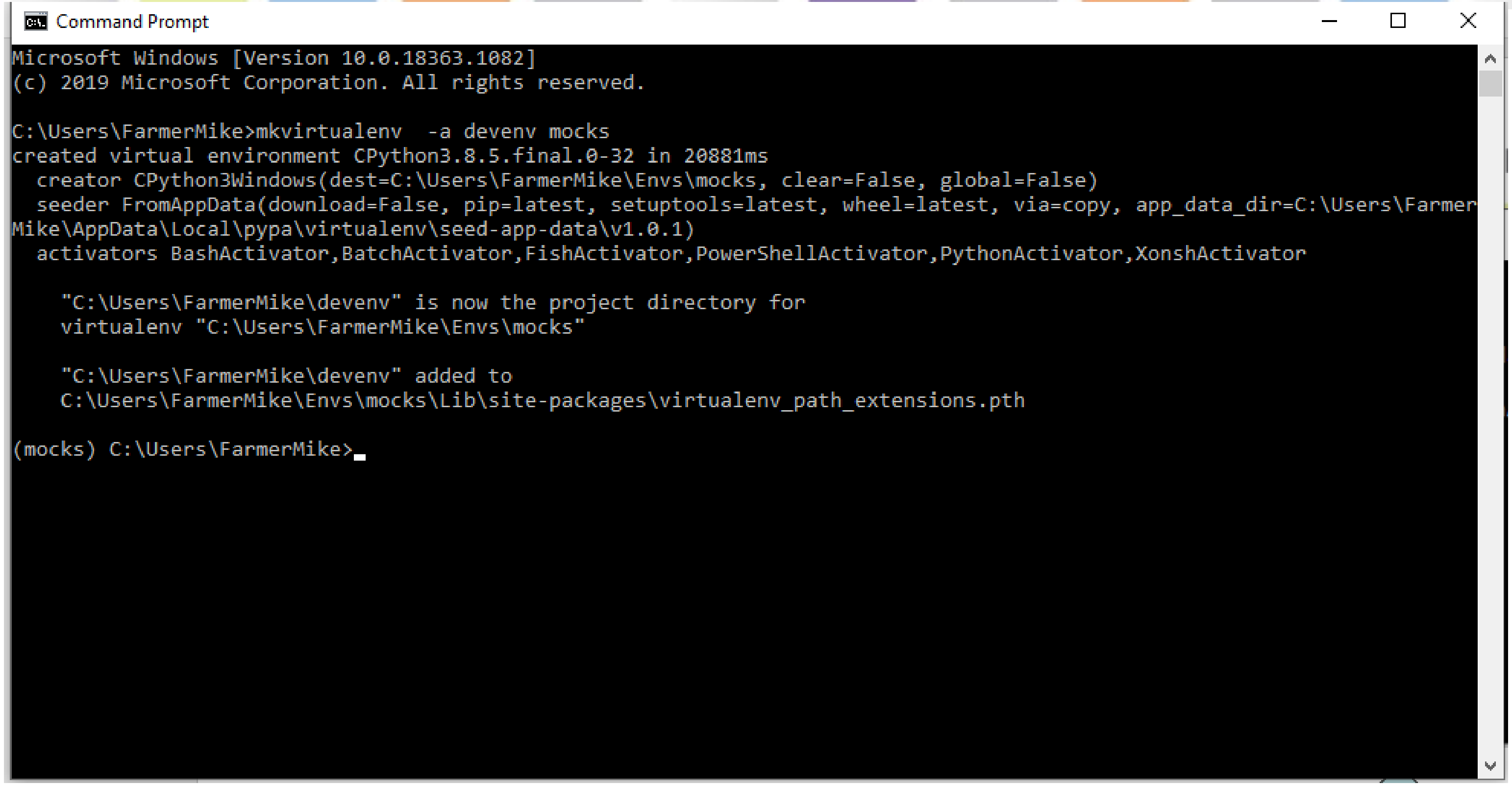
```
Microsoft Windows [Version 10.0.18363.1016]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\FarmerMike>pip install virtualenv
Requirement already satisfied: virtualenv in c:\users\farmermike\appdata\local\programs\python\python38-32\lib\site-pack
ages (20.0.20)
Requirement already satisfied: filelock<4,>=3.0.0 in c:\users\farmermike\appdata\local\programs\python\python38-32\lib\s
ite-packages (from virtualenv) (3.0.12)
Requirement already satisfied: appdirs<2,>=1.4.3 in c:\users\farmermike\appdata\local\programs\python\python38-32\lib\si
te-packages (from virtualenv) (1.4.4)
Requirement already satisfied: six<2,>=1.9.0 in c:\users\farmermike\appdata\local\programs\python\python38-32\lib\site-p
ackages (from virtualenv) (1.15.0)
Requirement already satisfied: distlib<1,>=0.3.0 in c:\users\farmermike\appdata\local\programs\python\python38-32\lib\si
te-packages (from virtualenv) (0.3.0)
WARNING: You are using pip version 20.1.1; however, version 20.2.2 is available.
You should consider upgrading via the 'c:\users\farmermike\appdata\local\programs\python\python38-32\python.exe -m pip i
nstall --upgrade pip' command.

C:\Users\FarmerMike>
```

Install virtualenvwrapper



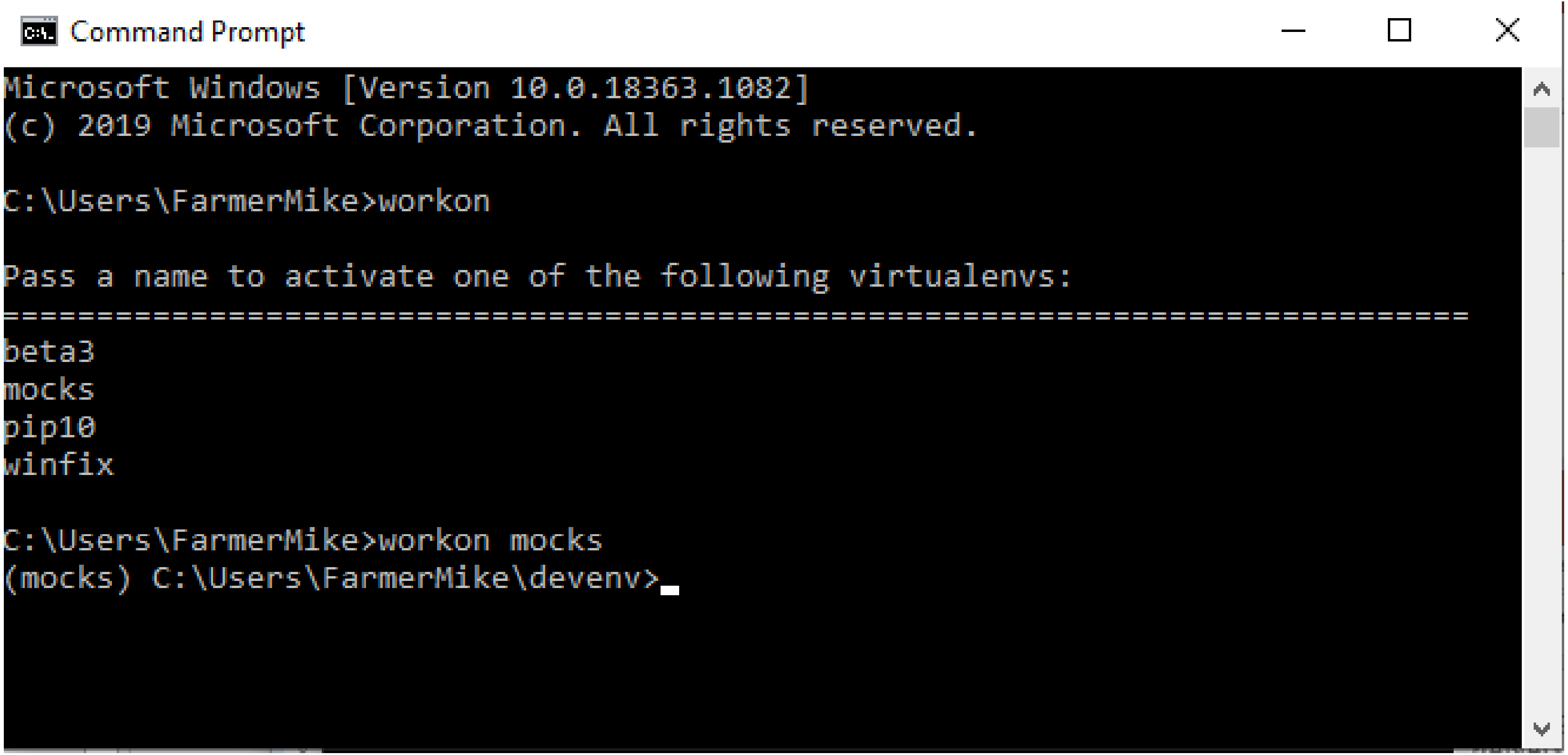
```
C:\Users\FarmerMike>pip install virtualenvwrapper-win
Requirement already satisfied: virtualenvwrapper-win in c:\users\farmermike\appdata\local\programs\python\python38-32\lib
\site-packages (1.2.6)
Requirement already satisfied: virtualenv in c:\users\farmermike\appdata\local\programs\python\python38-32\lib\site-packa
ges (from virtualenvwrapper-win) (20.0.20)
Requirement already satisfied: filelock<4,>=3.0.0 in c:\users\farmermike\appdata\local\programs\python\python38-32\lib\si
te-packages (from virtualenv->virtualenvwrapper-win) (3.0.12)
Requirement already satisfied: appdirs<2,>=1.4.3 in c:\users\farmermike\appdata\local\programs\python\python38-32\lib\sit
e-packages (from virtualenv->virtualenvwrapper-win) (1.4.4)
Requirement already satisfied: six<2,>=1.9.0 in c:\users\farmermike\appdata\local\programs\python\python38-32\lib\site-pa
ckages (from virtualenv->virtualenvwrapper-win) (1.15.0)
Requirement already satisfied: distlib<1,>=0.3.0 in c:\users\farmermike\appdata\local\programs\python\python38-32\lib\sit
e-packages (from virtualenv->virtualenvwrapper-win) (0.3.0)
WARNING: You are using pip version 20.1.1; however, version 20.2.2 is available.
You should consider upgrading via the 'c:\users\farmermike\appdata\local\programs\python\python38-32\python.exe -m pip in
stall --upgrade pip' command.

C:\Users\FarmerMike>
```

Create a Virtual environment



```
Microsoft Windows [Version 10.0.18363.1082]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\FarmerMike>mkvirtualenv  -a devenv mocks
created virtual environment CPython3.8.5.final.0-32 in 20881ms
  creator CPython3Windows(dest=C:\Users\FarmerMike\Envs\mocks, clear=False, global=False)
  seeder FromAppData(download=False, pip=latest, setuptools=latest, wheel=latest, via=copy, app_data_dir=C:\Users\Farmer
Mike\AppData\Local\pypa\virtualenv\seed-app-data\v1.0.1)
  activators BashActivator,BatchActivator,FishActivator,PowerShellActivator,PythonActivator,XonshActivator

    "C:\Users\FarmerMike\devenv" is now the project directory for
    virtualenv "C:\Users\FarmerMike\Envs\mocks"

    "C:\Users\FarmerMike\devenv" added to
    C:\Users\FarmerMike\Envs\mocks\Lib\site-packages\virtualenv_path_extensions.pth

(mocks) C:\Users\FarmerMike>
```

Show Virtual Environments



```
Microsoft Windows [Version 10.0.18363.1082]
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C:\Users\FarmerMike>workon

Pass a name to activate one of the following virtualenvs:
==============================================================================
beta3
mocks
pip10
winfix

C:\Users\FarmerMike>workon mocks
(mocks) C:\Users\FarmerMike\devenv>
```
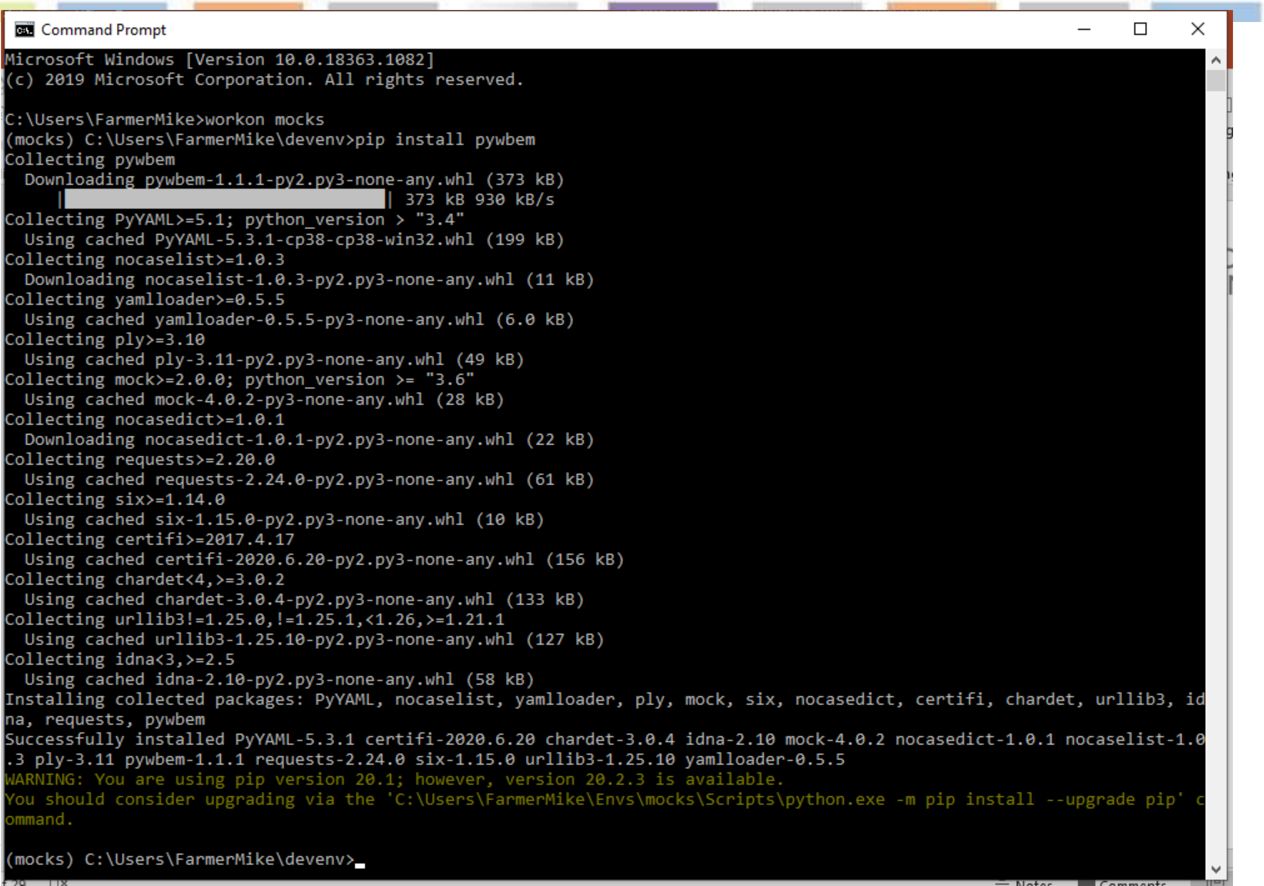
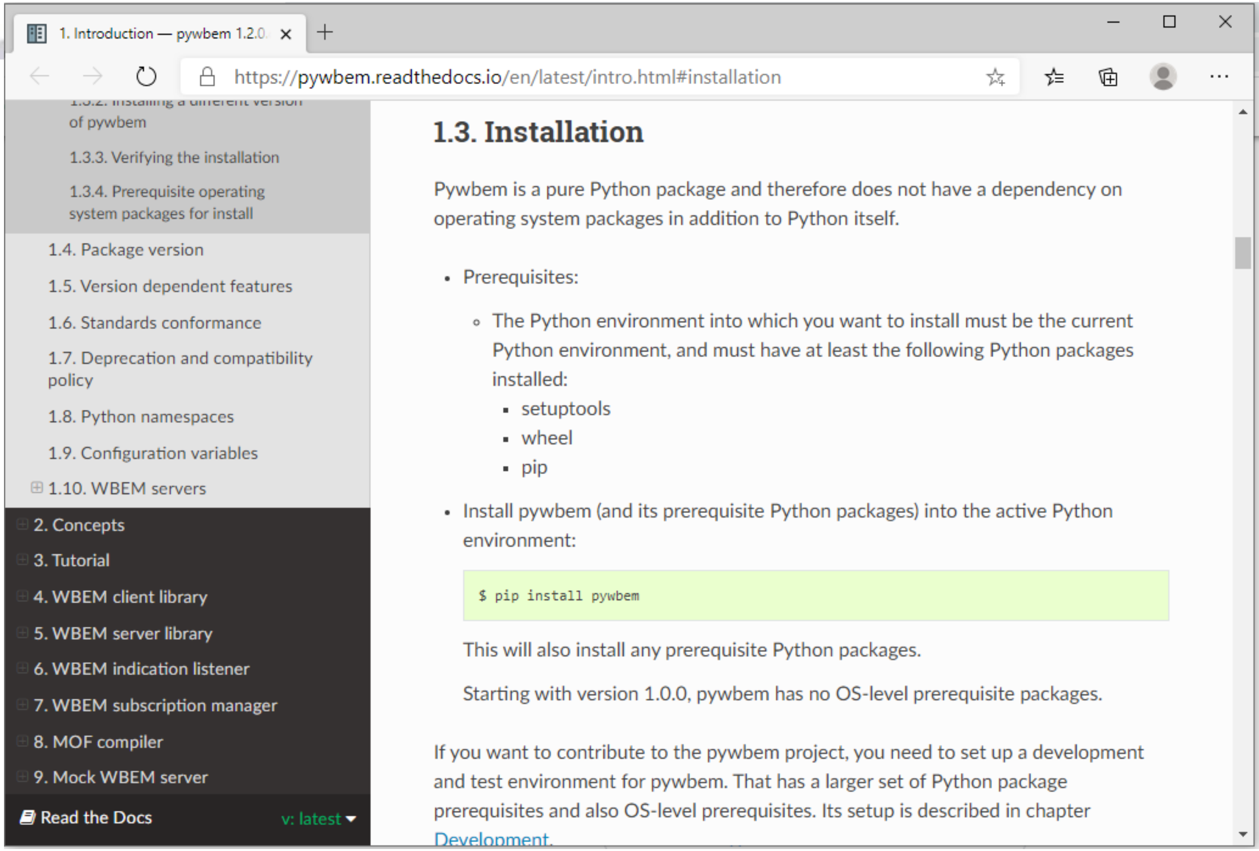

Install pywbem



```
Microsoft Windows [Version 10.0.18363.1082]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\FarmerMike>workon mocks
(mocks) C:\Users\FarmerMike\devenv>pip install pywbem
Collecting pywbem
  Downloading pywbem-1.1.1-py2.py3-none-any.whl (373 kB)
     |████████████████████████████████| 373 kB 930 kB/s
Collecting PyYAML>=5.1; python_version > "3.4"
  Using cached PyYAML-5.3.1-cp38-cp38-win32.whl (199 kB)
Collecting nocaselist>=1.0.3
  Downloading nocaselist-1.0.3-py2.py3-none-any.whl (11 kB)
Collecting yamlloader>=0.5.5
  Using cached yamlloader-0.5.5-py3-none-any.whl (6.0 kB)
Collecting ply>=3.10
  Using cached ply-3.11-py2.py3-none-any.whl (49 kB)
Collecting mock>=2.0.0; python_version >= "3.6"
  Using cached mock-4.0.2-py3-none-any.whl (28 kB)
Collecting nocasedict>=1.0.1
  Downloading nocasedict-1.0.1-py2.py3-none-any.whl (22 kB)
Collecting requests>=2.20.0
  Using cached requests-2.24.0-py2.py3-none-any.whl (61 kB)
Collecting six>=1.14.0
  Using cached six-1.15.0-py2.py3-none-any.whl (10 kB)
Collecting certifi>=2017.4.17
  Using cached certifi-2020.6.20-py2.py3-none-any.whl (156 kB)
Collecting chardet<4,>=3.0.2
  Using cached chardet-3.0.4-py2.py3-none-any.whl (133 kB)
Collecting urllib3!=1.25.0,!=1.25.1,<1.26,>=1.21.1
  Using cached urllib3-1.25.10-py2.py3-none-any.whl (127 kB)
Collecting idna<3,>=2.5
  Using cached idna-2.10-py2.py3-none-any.whl (58 kB)
Installing collected packages: PyYAML, nocaselist, yamlloader, ply, mock, six, nocasedict, certifi, chardet, urllib3, id
na, requests, pywbem
Successfully installed PyYAML-5.3.1 certifi-2020.6.20 chardet-3.0.4 idna-2.10 mock-4.0.2 nocasedict-1.0.1 nocaselist-1.0
.3 ply-3.11 pywbem-1.1.1 requests-2.24.0 six-1.15.0 urllib3-1.25.10 yamlloader-0.5.5
WARNING: You are using pip version 20.1; however, version 20.2.3 is available.
You should consider upgrading via the 'C:\Users\FarmerMike\Envs\mocks\Scripts\python.exe -m pip install --upgrade pip' c
ommand.

(mocks) C:\Users\FarmerMike\devenv>
```

Pywbem Documentation Page



1. Introduction — pywbem 1.2.0.
https://pywbem.readthedocs.io/en/latest/intro.html#installation

1.3. Installation

Pywbem is a pure Python package and therefore does not have a dependency on operating system packages in addition to Python itself.

- Prerequisites:
  - The Python environment into which you want to install must be the current Python environment, and must have at least the following Python packages installed:
    - setuptools
    - wheel
    - pip
- Install pywbem (and its prerequisite Python packages) into the active Python environment:

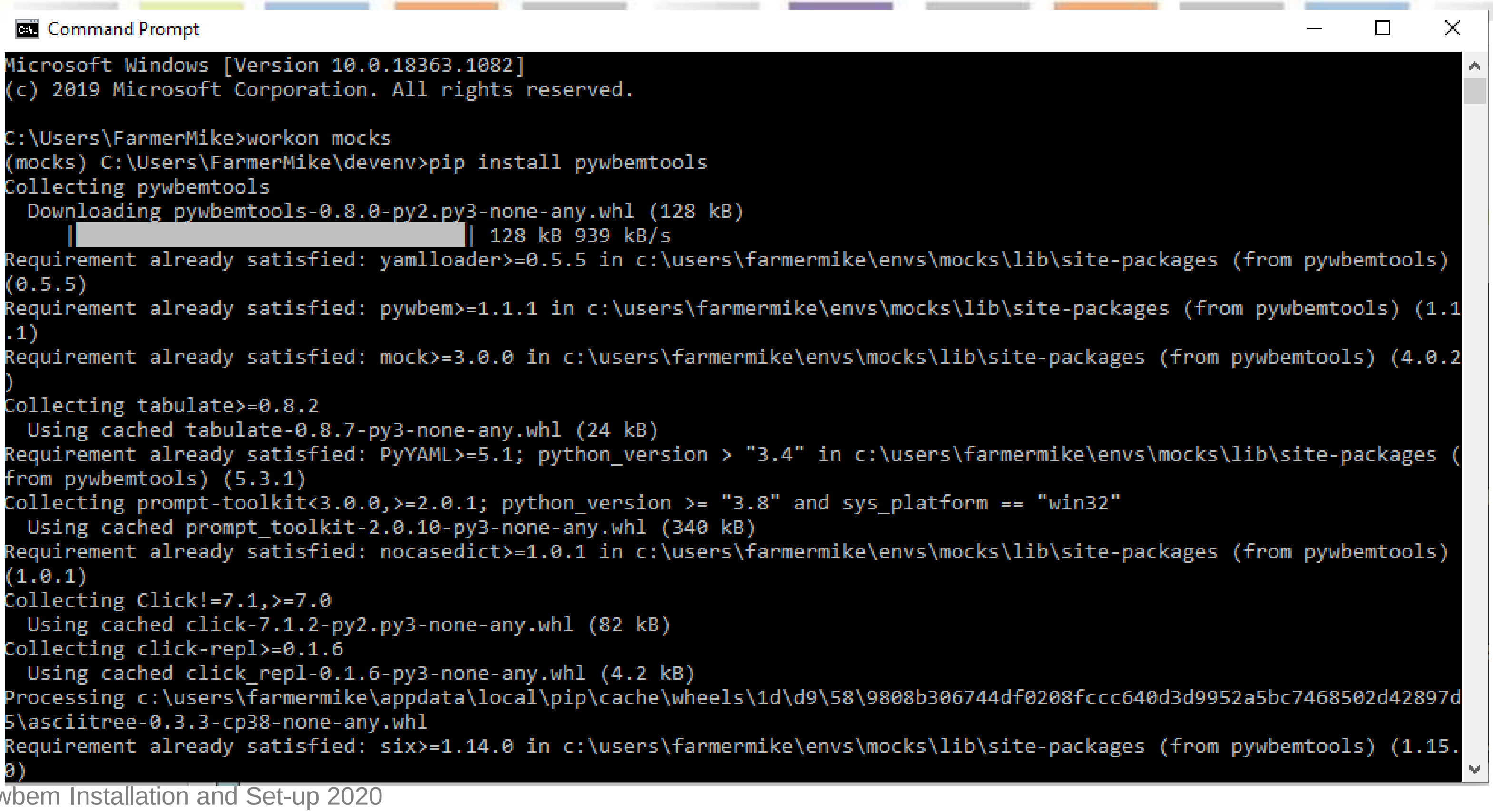
```
$ pip install pywbem
```

This will also install any prerequisite Python packages.

Starting with version 1.0.0, pywbem has no OS-level prerequisite packages.

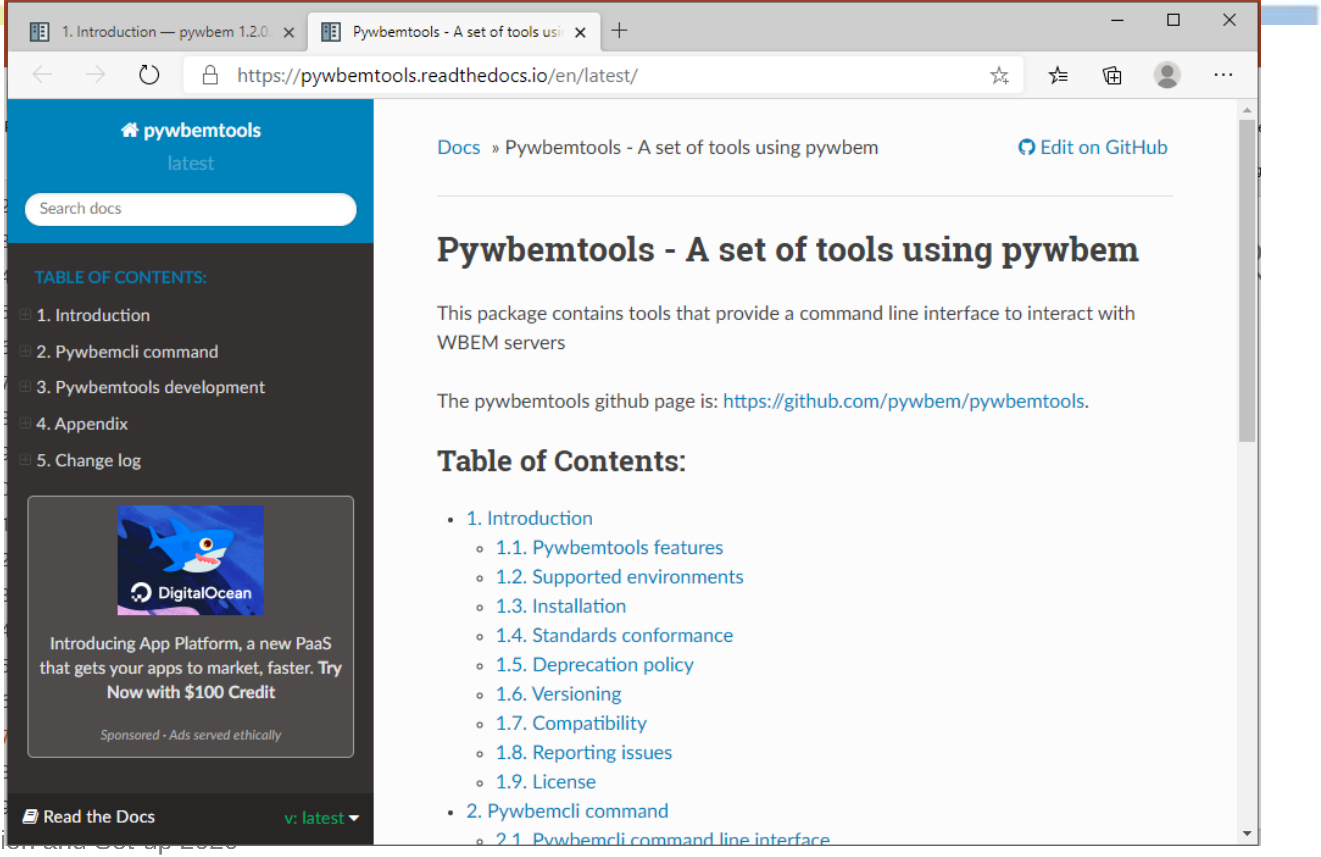
If you want to contribute to the pywbem project, you need to set up a development and test environment for pywbem. That has a larger set of Python package prerequisites and also OS-level prerequisites. Its setup is described in chapter Development.

Install pywbemtools



```
Microsoft Windows [Version 10.0.18363.1082]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\FarmerMike>workon mocks
(mocks) C:\Users\FarmerMike\devenv>pip install pywbemtools
Collecting pywbemtools
  Downloading pywbemtools-0.8.0-py2.py3-none-any.whl (128 kB)
     |████████████████████████████████| 128 kB 939 kB/s
Requirement already satisfied: yamlloader>=0.5.5 in c:\users\farmermike\envs\mocks\lib\site-packages (from pywbemtools)
(0.5.5)
Requirement already satisfied: pywbem>=1.1.1 in c:\users\farmermike\envs\mocks\lib\site-packages (from pywbemtools) (1.1
.1)
Requirement already satisfied: mock>=3.0.0 in c:\users\farmermike\envs\mocks\lib\site-packages (from pywbemtools) (4.0.2
)
Collecting tabulate>=0.8.2
  Using cached tabulate-0.8.7-py3-none-any.whl (24 kB)
Requirement already satisfied: PyYAML>=5.1; python_version > "3.4" in c:\users\farmermike\envs\mocks\lib\site-packages (
from pywbemtools) (5.3.1)
Collecting prompt-toolkit<3.0.0,>=2.0.1; python_version >= "3.8" and sys_platform == "win32"
  Using cached prompt_toolkit-2.0.10-py3-none-any.whl (340 kB)
Requirement already satisfied: nocasedict>=1.0.1 in c:\users\farmermike\envs\mocks\lib\site-packages (from pywbemtools)
(1.0.1)
Collecting Click!=7.1,>=7.0
  Using cached click-7.1.2-py2.py3-none-any.whl (82 kB)
Collecting click-repl>=0.1.6
  Using cached click_repl-0.1.6-py3-none-any.whl (4.2 kB)
Processing c:\users\farmermike\appdata\local\pip\cache\wheels\1d\d9\58\9808b306744df0208fccc640d3d9952a5bc7468502d42897d
5\asciitree-0.3.3-cp38-none-any.whl
Requirement already satisfied: six>=1.14.0 in c:\users\farmermike\envs\mocks\lib\site-packages (from pywbemtools) (1.15.
0)
```

PywbemTools Documentation Page



1. Introduction — pywbem 1.2.0.
Pywbemtools - A set of tools usi
https://pywbemtools.readthedocs.io/en/latest/
pywbemtools
latest
Search docs

TABLE OF CONTENTS:

Read the Docs
v: latest
Docs » Pywbemtools - A set of tools using pywbem
Edit on GitHub

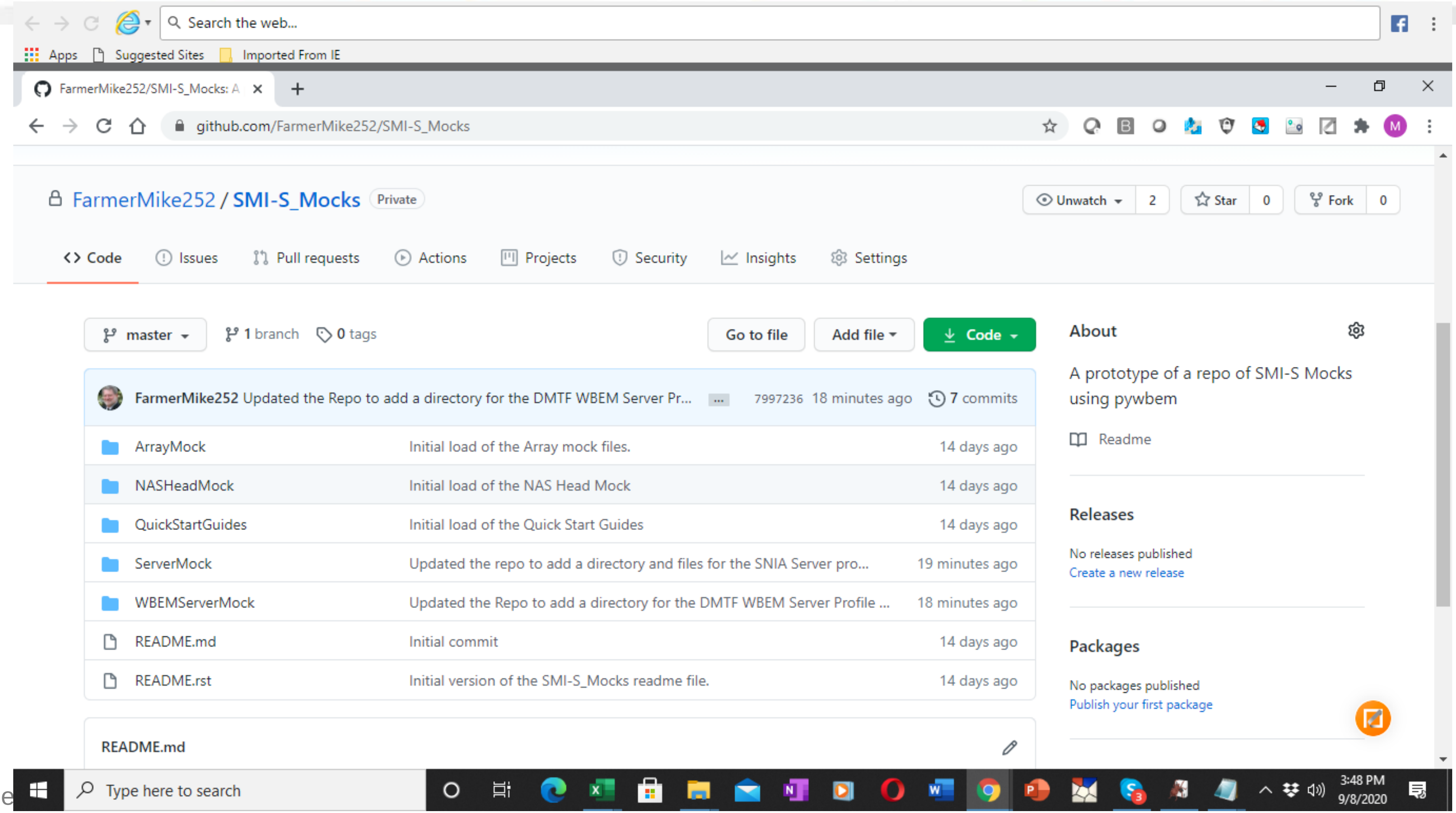
Pywbemtools - A set of tools using pywbem

This package contains tools that provide a command line interface to interact with WBEM servers

The pywbemtools github page is: https://github.com/pywbem/pywbemtools.

Table of Contents:

Repo of Mocks



Search the web...
Apps
Suggested Sites
Imported From IE
FarmerMike252/SMI-S_Mocks: A
github.com/FarmerMike252/SMI-S_Mocks

FarmerMike252 / SMI-S_Mocks Private

FarmerMike252 Updated the Repo to add a directory for the DMTF WBEM Server Pr... 7997236 18 minutes ago 7 commits

ArrayMock	Initial load of the Array mock files.	14 days ago
NASHeadMock	Initial load of the NAS Head Mock	14 days ago
QuickStartGuides	Initial load of the Quick Start Guides	14 days ago
ServerMock	Updated the repo to add a directory and files for the SNIA Server pro...	19 minutes ago
WBEMServerMock	Updated the Repo to add a directory for the DMTF WBEM Server Profile ...	18 minutes ago
README.md	Initial commit	14 days ago
README.rst	Initial version of the SMI-S_Mocks readme file.	14 days ago

README.md

About

A prototype of a repo of SMI-S Mocks using pywbem

Releases

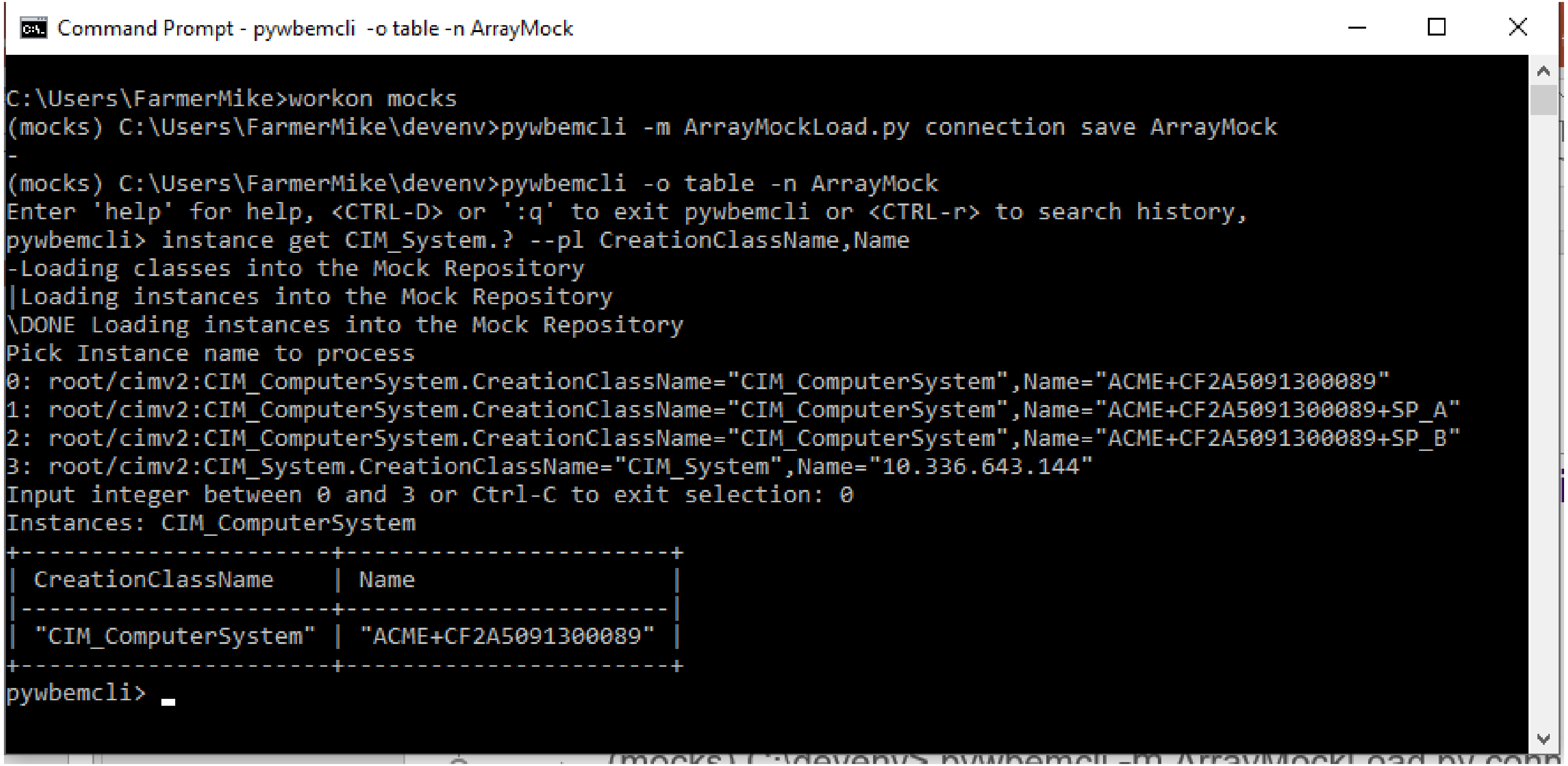
No releases published
Create a new release

Packages

No packages published
Publish your first package

Pywbe

Running a mock



```
C:\Users\FarmerMike>workon mocks
(mocks) C:\Users\FarmerMike\devenv>pywbemcli -m ArrayMockLoad.py connection save ArrayMock
-
(mocks) C:\Users\FarmerMike\devenv>pywbemcli -o table -n ArrayMock
Enter 'help' for help, <CTRL-D> or ':q' to exit pywbemcli or <CTRL-r> to search history,
pywbemcli> instance get CIM_System.? --pl CreationClassName,Name
-Loading classes into the Mock Repository
|Loading instances into the Mock Repository
\DONE Loading instances into the Mock Repository
Pick Instance name to process
0: root/cimv2:CIM_ComputerSystem.CreationClassName="CIM_ComputerSystem",Name="ACME+CF2A5091300089"
1: root/cimv2:CIM_ComputerSystem.CreationClassName="CIM_ComputerSystem",Name="ACME+CF2A5091300089+SP_A"
2: root/cimv2:CIM_ComputerSystem.CreationClassName="CIM_ComputerSystem",Name="ACME+CF2A5091300089+SP_B"
3: root/cimv2:CIM_System.CreationClassName="CIM_System",Name="10.336.643.144"
Input integer between 0 and 3 or Ctrl-C to exit selection: 0
Instances: CIM_ComputerSystem
+----------------------+----------------------+
| CreationClassName    | Name                 |
|----------------------+----------------------|
| "CIM_ComputerSystem" | "ACME+CF2A5091300089" |
+----------------------+----------------------+
pywbemcli> _
```