

## **ERNEST BOYD United States Marine Corps Veteran**

Enhanced **AWS** ( Operations and Security ), Docker, Fedora Linux, Machine Learning and Python expertise while preparing to achieve multiple AWS certifications.

### **Professional Certification:**

**AWS Certified Security – Specialty** Valid from 2024\_0321 to 2027\_0321  
**AWS Certified SysOps Administrator – Associate** Valid from 2022\_1109 to 2025\_1109  
**AWS Certified Solutions Architect – Associate** Valid from 2022\_0811 to 2026\_1215  
**AWS Certified Developer – Associate** Valid from 2023\_0214 to 2027\_0123  
**AWS Certified AI Practitioner** Valid from 2024\_1024 to 2027\_1024

### **GitHub URLs for Technical Projects and Certification Documentation:**

<https://github.com/Ernie-Linux-AWS/AWS-Certification-Milestones>  
<https://github.com/Ernie-Linux-AWS/Modular-Python-SQL-Exercises>  
<https://github.com/Ernie-Linux-AWS/Modular-Python-Pandas-Exercises>  
<https://github.com/Ernie-Linux-AWS/Python-Pytesting-Exercises>  
<https://github.com/Ernie-Linux-AWS/Python-AWS-Lambda-Layers-Exercises>  
<https://github.com/Ernie-Linux-AWS/Docker-Fedora-Exercises>  
<https://github.com/Ernie-Linux-AWS/Docker-Ubuntu-Exercises>  
<https://github.com/Ernie-Linux-AWS/SageMaker-Classification-Notebooks>  
<https://github.com/Ernie-Linux-AWS/SageMaker-Regression-Notebooks>

### **Fedora Project - Discussion Forum – Contributing Posts 2024 to present**

[Fsarchiver 0.8.8 bundled with SystemRescue 12.00 can flawlessly create/restore a compressed and encrypted archive of an ext4 data or OS filesystem](#)  
[Fedora 42 dnf update appends 'rhgb quiet' to grub command line](#)  
[Multiple UEFI ESP partitions, Linux Distros and bootable ISOs using one USB NVMe SSD](#)  
[Fedora 41 grubenv explained](#)  
[Install Fedora 41 as a Portable Workstation](#)  
[Migrate a Fedora 41 Portable Workstation](#)

### **Academic and Project Based Continuing Education Student 2020 to present**

**AWS** ( Architecture, Operations and Security ), Machine Learning, Python and SQL.

### **Student/Hobbyist 2013 to 2019**

**AWS** ( Architecture, Automation and Networking ), Docker, Fedora Linux and Python.

### **Consulting Summary 2002 to 2012**

On Call Technician - Data Center Rack and Stack, Desktop Support, OS Imaging and Migration.  
**Environments:** Windows, Ghost and Acronis True Image.

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### CloudFormation:

Competent creating local and cross regional **reusable** stacks.

Competent using cfn-signal with EC2 user-data.

Competent using cfn-signal, cfn-init, and cfn-hup to enable EC2 metadata updating **after** initial launch.

Competent creating a Lambda function to facilitate **unconditional** CloudFormation S3 bucket deletion.

### Data Engineering:

Proficient using Python to craft, execute and test ( '**flake8**' and usability ) SQL stored procedures.

Proficient using Python to craft, execute and test ( '**flake8**' and usability ) Python Data Wrangling wrapper functions to abstract underlying Pandas functionality.

Created a dual use '**sql\_imports.py**' module to facilitate modular development of Pandas or SQL Python applications. Refer to my GitHub repository to access that module, '**sql\_task.py**' and the log file '**sql\_task.log**'.

Exposed to leveraging SageMaker's automatic building, training, tuning and evaluation of many models to significantly reduce time required to produce a useful ML model from a tabular dataset.

### Lambda:

Competent creating a Lambda layer containing multiple python modules.

Competent creating a Lambda handler that called some functions in one of the layer's modules which then called functions in yet another module in the layer.

### Python Projects:

**Automated** sequential execution of a Linux Workstation's '**fstrim**' command, adding progress displays, status displays and '**file -s**' output targeting **multiple** dynamically discovered data, ESP and OS partitions on the Workstation's **UASP**-enabled USB 3.2 flash drives, a **UASP**-enabled USB 3.2 attached M.2 NVMe SSD, internal ( PCIe 3.0 and 4.0 ) M.2 NVMe SSDs and SATA SSDs. **Custom** rules files created in '**/etc/udev/rules.d**' facilitated trimming of several USB device types unknown to the installed OS.

Created a '**flake8**' linted python module with a '**logging handler**' custom configured to prepend each log message with a **UTC** formatted date time stamp and also to force '**logging.StreamHandler**' output to 'stdout' instead of 'stderr'. A 'pytest' tester file was created, linted with '**flake8**' and used to execute more than one hundred **automated** tests of functions in the python module.

Created **Dockerfiles** used to create '**git-fedora**' and '**git-ubuntu**' based images configured to 'pip3' install 'boto3', 'botocore', '**flake8**', 'pytest' and 'requests' after installing 'git' and 'python3-pip'. Additional dockerfile configuration copied module to be tested '**pyfuncs.py**' and tester file '**test\_pyfuncs.py**' into each image.

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### Python Projects continued:

The '**git-ubuntu**' based image required '**vim**' installation while the '**git-fedora**' based image provided '**vim-minimal**'. To facilitate editing a file containing python or yaml syntax, a custom '**vimrc**' configuration file was copied from the Linux Workstation as '**vimrc**' to the '**git-ubuntu**' based image and copied as '**vimrc**' to the '**git-fedora**' based image.

The '**pytest test\_pyfuncs.py -vrP**' command **automated** execution of more than one hundred tests against functions in module '**pyfuncs.py**' during each image creation. Log files memorialized '**pip3**' module installation and **uncached** '**docker build**' output. Later, those log files and the '**pytest**' output were docker copied from the image to the Linux Workstation.

### Security/MFA:

Proficient using '**Authy**', '**Ente Auth**' and Google TOTP ( Time-based One-time Password ) authenticators. '**Ente Auth**' provides end to end encryption and may be installed on multiple mobile devices and Linux desktops.

### Workstation - Fedora Linux:

Configured a **UASP** enabled USB thumb drive using **Ventoy** to provision USB boot capability and create a partition to store bootable Linux ISOs that could be selected for execution following a USB boot. Created fat16 EFI ESP and ext4 OS and Data partitions before installing and personalizing a USB bootable Fedora Linux installation. **Ventoy**, USB installed Fedora or any of the Linux versions installed on the workstation could be booted and all Linux installations were capable of auto detecting and trimming all partitions on all storage devices attached to the workstation. **NVRAM** entries were configured to conform to a boot order of my choosing.

Proficient using Linux resources/tools: '**asymmetric ed25519** encryption ( **ssh-keygen**, **ssh-agent** )', '**bash**', '**.bashrc** ( bash config file )', '**bcompare** ( file and/or directory comparison tool )', '**efibootmgr** ( **NVRAM** manipulation )', '**fsarchiver** ( partition archiving )', '**gdisk**' ( CLI partition manager )', '**gparted** ( GUI partition manager )', '**grub2** ( /boot/grub2/grub.config, /boot/grub2/grubenv, /etc/default/grub, /etc/fstab )', '**grub2-mkconfig** ( bash script used to create a '**grub.cfg**' file )', '**systemctl**', '**SystemRescue** ( USB-bootable Linux )', '**tune2fs** (Ext4 filesystem label and UUID manipulation utility)', User and device management ( **user/group** creation and manipulation of user and device permissions including '**/etc/sudoers.d**' and '**/etc/udev/rules.d**' configuration ), '**Ventoy** ( Multi-ISO bootstrapping tool)', '**vim** ( marks, multi-file editing, python configuration, split screen editing, yaml configuration)' and '**vimrc** (vim config file)'.