



## Quick Start to Python for Networking & SysAdmin

Fast Track to Task Automation Skills for Python Experienced Attendees

[www.triveratech.com](http://www.triveratech.com)

### Course Snapshot

- **Course:** Quick Start to Python for Networking & SysAdmin (TTPS4822)
- **Duration:** 2 days
- **Skill-level:** Intermediate-level automation skills using python for skilled team members.
- **Audience:** This course is geared for those who want to gain expert understanding of how to install Python, debug Python scripts and write scripts for automating testing and routine administrative activities.
- **Delivery Options:** This course is available for **onsite private classroom presentation**, **live online virtual presentation**, or can be presented in a **flexible blended learning format** for combined onsite and remote attendees. Please also ask about our **Self-Paced / Video / QuickSkills or Mini-Camp Flex Hours / Short Course** options.
- **Customizable:** This course agenda, topics and labs can be further adjusted to target your specific training skills objectives, tools and learning goals. Please inquire for details.

### Overview

**Quick Start to Python for Networking / Systems Administrators** is a hands-on course geared for experienced system administrators and web site administrators (with incoming basic Python experience) who want to use Python to support their server installations, as well as anyone else who wants to automate or simplify common tasks with the use of Python scripts. Working in a hands-on, workshop style format throughout the course, you'll learn how to solve day to day problems encountered by system administrators and how to automate routine activities, as well as how to handle regular expressions and network administration.

If you are new to Python, please consider TTPS4824 Python for Network / System Administrators (for Students new to Python) (4 days) as an alternative, which teaches Python basics in addition to the topics in this course.

### Learning Objectives

This skills-focused course combines expert lecture, engaging group discussions, practical demos and useful real-world scenarios with plenty of hands-on labs that truly zero in on the skills you'll need to be productive right after the training ends.

Working in a hands-on learning environment led by our expert team, students will learn how to:

- Install Python and debug Python scripts
- Write scripts for automating testing and routine administrative activities
- Write scripts for text processing, encryption, decryption, and archiving
- Handle files, such as pdf, excel, csv, and txt files, and generate reports
- Write scripts for remote network administration, including handling emails
- Build interactive tools using a graphical user interface
- Handle Apache log files, SOAP and REST APIs communication
- Automate database administration and perform statistical analysis
- Work with Ansible and Python

### Audience & Pre-Requisites

In order to be successful in the course, you should have incoming hands-on experience working with basic Python, along with a working, user-level knowledge of Unix/Linux, Mac, or Windows. Python fundamentals are NOT covered in this class.

#### Take Before:

- TTPS4800 Introduction to Basic Python (3 days)

If you are new to Python, please consider TTPS4824 Python for Network / System Administrators (for Students new to Python) (4 days) as an alternative, which teaches Python basics in addition to the topics in this course.

**Follow On Courses:** Our Python tracks include a wide variety of follow-on courses and learning paths for leveraging Python for next-level networking, task automation, security and other topics. Please see the attached **Python Training Suite** list of courses, or inquire for recommendations based on your specific role and goals.

**Enhanced Learning Services:** Please also ask about our **Pre-Training Class OnRamp & Prep / Primer** offerings, **Skills Gap Assessment Services**, **Case Studies**, **Knowledge Check Quizzes**, **Skills Immersion Programs & Camps**, **Collaborative Mentoring Services** and **Extended Learning Support & Post Training** services.

## Course Topics / Agenda

*Please note that this list of topics is based on our standard course offering, evolved from typical industry uses and trends. We'll work with you to tune this course and level of coverage to target the skills you need most. Topics, agenda and labs are subject to change, and may adjust during live delivery based on audience needs, skill-level and participation.*

### 1. Debugging and Profiling Python Scripts

- Debugging and Profiling Python Scripts
- What is debugging?
- Error handling (exception handling)
- Debuggers tools
- Debugging basic program crashes
- Profiling and timing programs
- Making programs run faster

### 2. Unit Testing - Introduction to the Unit Testing Framework

- Unit Testing - Introduction to the Unit Testing Framework
- What is unittest?
- Creating unit tests
- Methods used in unit testing

### 3. Automating Regular Administrative Activities

- Automating Regular Administrative Activities
- Accepting input by redirection, pipe, and input files
- Handling passwords at runtime in scripts
- Executing external commands and getting their output
- Capturing output using the subprocess module
- Prompting for passwords during runtime and validation
- Reading configuration files

- Adding logging and warning code to scripts
- Putting limits on CPU and memory usage
- Launching web browser
- Using the os module for handling directory and files
- Making backups (with rsync)

### 4. Handling Files, Directories, and Data

- Handling Files, Directories, and Data
- Using the os module to work with directories
- Copying, moving, renaming, and deleting data
- Working with paths
- Comparing data
- Merging data
- Pattern matching files and directories
- Metadata: data about data
- Compressing and restoring
- Using the tarfile module to create TAR archives
- Using a tarfile module to examine the contents of TAR files

### 5. File Archiving, Encrypting, and Decrypting

- File Archiving, Encrypting, and Decrypting
- Creating and unpacking archives
- Tar archives
- ZIP creation
- File encryption and decryption

### 6. Text Processing and Regular Expressions

- Text Processing and Regular Expressions
- Text wrapping
- Regular expressions
- Unicode strings

### 7. Basic Networking - Socket Programming

- Basic Networking - Socket Programming
- Sockets
- The http package
- The ftplib module
- The urllib package

### 8. Remote Monitoring of Hosts Over Telnet and SSH

- Remote Monitoring of Hosts Over Telnet and SSH
- The telnetlib() module
- The subprocess.Popen() module
- SSH using fabric module
- SSH using the Paramiko library
- SSH using the Netmiko library
- Summary
- Questions

## BONUS CONTENT / Time-Permitting

### 9. SOAP and REST API Communication

- SOAP and REST API Communication

- What is SOAP?
- What is a RESTful API?
- Working with JSON data

## 10. MySQL and SQLite Database Administrations

- MySQL and SQLite Database Administrations
- MySQL database administration
- SQLite database administration

## 11. Ansible and Python

- Reading and writing to files
- Filesystem interaction
- Testing modules on Python 3

**Hands-on Setup Made Simple!** All course software (limited versions, for course use only), courseware files, hands-on lab guides, labs and solutions, data sets and resources (as applicable) are provided for you in our “easy access / no install required” high-speed remote lab environment. In most cases, we can also offer local (non-cloud) set up as an alternative. Either way, our dedicated live tech team works with every student to ensure everyone is set up with working access and ready to go prior to every course start date, ensuring a smooth delivery and great hands-on experience. All your coursework can be accessed or downloaded after class, so you never lose your work or materials. Please ask for details.

### For More Information

All courses can be presented **onsite** or **online**, or in a **combined / flex / blended learning format**, tailored to target your specific audience, needs and learning goals. We also offer focused, flexible **short courses**, **self-paced learning** options, **recorded sessions** and more. We train beginner to advanced skills in all areas we cover, and offer **New Hire / Cohort Training**, **Boot Camps**, **Skills Immersion Programs**, **Reskilling Programs**, **Skills Migration & Transition Programs**, and more. We collaborate with you to ensure all courses are truly targeted to meet your specific needs and learning skills, maximizing your valuable training time, as well as your important budget.

Please also visit our extensive **Public Training Schedule** for training for smaller groups or individuals. Please contact us for course details, **Corporate Rates** and **Special Discount Offers**.

For more information about our dedicated training services, collaborative coaching services, courseware licensing options, public course schedule, training management services, partner programs, or to see our complete list of course offerings and special offers please visit us at [www.triveratech.com](http://www.triveratech.com), email [Info@triveratech.com](mailto:Info@triveratech.com) or call us toll free at **844-475-4559**. Our pricing and services are always satisfaction guaranteed.

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