Training: CompTIA
CompTIA Linux+ Prep Course

TRAINING GOALS:

This course can benefit you in two ways. If you intend to pass the CompTIA Linux+ (ExamXK0-006) certification examination, this course can be a significant part of your preparation. However, certification is not the only key to professional success in the field of systems administration. Today's job market demands individuals with demonstrable skills, and the information and activities in this course can help you build your sysadmin skill set so that you can confidently perform your duties in any intermediate-level Linux systems administration role.

Upon completing this course, you will be able to:

- Identify Basic Linux Concepts
- Administer Users and Groups
- Configure Permissions
- Implement File Management
- Author Text Files
- Deploy Software
- Administer Storage
- Manage the Linux Kernel and Devices
- Maintain Services
- Configure Network Settings
- Secure a Linux System
- Install Linux
- Script with Bash and Python
- Manage Containers in Linux
- Automate Infrastructure Management

Skills you'll learn

- Configure and manage Linux systems, storage, networks, and services in cloud and hybrid environments.

Compendium Education Center Ltd.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70
BNP Paribas Bank Polska S.A.
EUR: PL 79 1600 1462 1853 6451 3000 0006
USD: PL 52 1600 1462 1853 6451 3000 0007

- Apply best practices including permissions, authentication, firewalls, and system hardening.
- Automate administration tasks and streamline operations with shell scripting, Python, and configuration management tools.
- Deploy, maintain, and monitor containers and virtual machines using leading technologies.
- Troubleshoot system, network, security, and application issues to ensure uptime and reliability for business operations.

Job roles that benefit from Linux+ skills

- Linux System Administrator
- DevOps Engineer
- Cloud Engineer
- Systems Architect
- Cybersecurity Analyst (SOC)
- Technical Support Engineer (Tier 2/3)
- Network Administrator
- Site Reliability Engineer (SRE)

This is an absolute foundation for anyone working with infrastructure, the cloud (where most servers are Linux), or security. This course is essential for those who want to move beyond graphical interfaces and professionally manage systems from the command line interface (CLI).

Each participant in an authorized training CompTIA Linux+ Prep Course held in Compendium CE will receive a free XK0-006 CompTIA Linux+ Certification Exam vouchers.

CONSPECT:

- Identifying Basic Linux Concepts
  - Use Linux Basics
    - Linux Distributions
    - The Command-line Interface
    - Command Shells
    - Bash Characteristics and Syntax
    - Basic Bash Commands
    - Bash Command Strategies
    - Interface Login Elements

Compendium Education Center Ltd.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70

BNP Paribas Bank Polska S.A.
EUR: PL 79 1600 1462 1853 6451 3000 0006
USD: PL 52 1600 1462 1853 6451 3000 0007

- Documentation and Manual Pages
- Man Pages
- Command Help
- Lab: Get Help in Linux
- The CompTIA Troubleshooting Methodology
- Troubleshooting Methodology

- Use Linux Utilities
  - Vim and Nano
  - Use Vim and nano
  - Lab: Create a File with Vim
  - Lab: Modify a File with Vim
  - Lab: Use the nano Editor
  - su and sudo Commands
  - Live Lab: Exploring The Linux Environment
  - Common Directories in Linux

- Administering Users and Groups
  - Manage User Accounts
    - User Account Concepts
    - User Configuration Files
    - User Account Creation
    - Lab: Create a User Account
    - User Account Modification
    - Lab: Rename a User Account
    - Lab: Delete a User
    - User Management Command Scripts
    - Account Configuration Commands
    - User Login Commands
    - Managing User Passwords
    - Lab: Change Your Password
    - Troubleshooting User Login Issues
    - Live Lab: Manage User Accounts Localization
  - Manage Group Accounts
    - Group Configuration Files
    - Group Management Commands
    - Managing Groups
    - Lab: Rename and Create Groups

Compendium Education Center Ltd.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70
BNP Paribas Bank Polska S.A.
EUR: PL 79 1600 1462 1853 6451 3000 0006
USD: PL 52 1600 1462 1853 6451 3000 0007

- Lab: Add Users to a Group
- Troubleshooting User and Group Account Issues
- Scripting Group Account Commands
- Lab: Delete a Group and Users
- Lab: Remove a User From a Group
- Lab: Remove a User from All Groups
- Live Lab: Manage Group Accounts

- Modify User Configurations
  - User and System Accounts
  - User Shell Customization
  - User Profile Templates
  - Shell and Environment Variables
  - Declaring Variables
  - Command Aliases
  - Command History
  - User Password Settings
- Escalate Privileges
  - Privilege Escalation Concepts
  - Privilege Escalation Using su
  - Lab: Switch Users
  - Privilege Escalation Using sudo
  - Additional sudo Options
  - Privilege Elevation with sudo and visudo
  - Lab: Use sudo
  - Lab: Use visudo
  - PolicyKit Rules
  - Troubleshooting Privilege Escalation Scenarios
  - Live Lab: Configure And Troubleshoot Privilege Escalation

- Configuring Permissions
  - Configure Standard Linux Permissions
    - Permissions and Access in Linux
    - View Permissions
    - Absolute and Symbolic Modes
    - Default Permissions
    - Configure Ownership
    - Configure Attributes

Compendium Education Center Ltd.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70
BNP Paribas Bank Polska S.A.
EUR: PL 79 1600 1462 1853 6451 3000 0006
USD: PL 52 1600 1462 1853 6451 3000 0007

- Troubleshoot Access Issues
- Live Lab: Configure Standard Linux Permissions

- Configure Special Linux Permissions
  - User ID and Group ID Concepts
  - Setting Special Permissions
  - Lab: Set the SUID Bit
  - Lab: Remove SUID and SGID Permissions
  - The Sticky Bit
  - Set the Sticky Bit Permissions
  - Troubleshooting Special Permissions Access
  - Live Lab: Set Special Linux Permissions
- Configure Access Control Lists
  - Access Control List Concepts
  - Configure Access Control Lists on Files
  - Using ACLs
  - Live Lab: Configure Access Control Lists
  - Troubleshooting ACL Issues
  - Using Default ACLs
  - Applied Live Lab: Manage Identity And Access Control

- Implementing File Management
  - Navigate the Linux File System
    - Linux File Organization
    - Key Directories
    - File Metadata
    - Absolute and Relative Paths
    - File Links
    - Lab: Create a Hard Link
    - Lab: Create a Symbolic Link
    - Search Commands
    - Finding Files
    - File Manipulation Commands
  - Apply File Management Commands
    - Directory Navigation
    - Directory Modification
    - Lab: Create Directories
    - File Relocation and Display

Compendium Education Center Ltd.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70

BNP Paribas Bank Polska S.A.
EUR: PL 79 1600 1462 1853 6451 3000 0006
USD: PL 52 1600 1462 1853 6451 3000 0007

- Lab: Move Files
- Directory and File Removal
- Lab: Delete Files
- Lab: Delete Directories
- File Contents Display Commands
- String Display and Searching
- Lab: Use grep
- Redirectors
- Use Piping
- Command Modifiers
- Live Lab: Use File Management Commands

- Authoring Text Files
  - Edit Text Files
    - Configuration File Concepts
    - Vim
    - Vim Basics
    - nano
    - Use nano
    - Gedit
    - Live Lab: Edit Text Files And Write A Backup Script
  - Manage Text Files
    - Archiving and Extracting Files with tar
    - Using tar to Archive and Compress Files
    - Lab: Create a Compressed tar File
    - Using tar to Extract Files
    - Lab: Extract from tar Files
    - Copy In/Copy Out
    - Using cpio
    - File Compression Concepts
    - File Compression with tar
    - File Integrity
    - Check File Integrity
    - Live Lab: Compress Backup And Restore Files
    - File Modification with dd
    - Data Recovery with ddrescue
    - Applied Live Lab: Troubleshoot File Management

Compendium Education Center Ltd.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70
BNP Paribas Bank Polska S.A.
EUR: PL 79 1600 1462 1853 6451 3000 0006
USD: PL 52 1600 1462 1853 6451 3000 0007

- Challenge Live Lab: Securely Manage Files
- Deploying Software
  - Administer Software with Package Managers
    - Package Management Concepts
    - Manage Software Packages
    - Package Manager Tools
    - Software Installation and Updates
    - Install Packages with DNF
    - Managing Debian Packages
    - Lab: Use DNF to Install an RPM Package
    - Software Configuration
    - Software Removal
    - Lab: Use DNF to Remove an RPM Package
    - Lab: Use apt
    - Language-Specific Package Managers
    - Troubleshooting Software Dependency Issues
  - Acquire and Use Software
    - Software Sources
    - Repositories
    - Troubleshooting Repository Misconfigurations
    - Package Queries
    - Sandboxed Software
    - Using snaps And snapd
    - Install and Run an Application Using flatpak
    - Customizing flatpak
- Administering Storage
  - Deploy Standard Storage
    - Linux Storage Concepts
    - Hard Disk Drive Deployments
    - Lab: Use lsblk
    - Types of Partitions
    - Partitions on the Drive
    - Create an MBR Primary Partition
    - Partition Management
    - Filesystems on a Partition
    - Lab: Format a Hard Disk with ext4

Compendium Education Center Ltd.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70
BNP Paribas Bank Polska S.A.
EUR: PL 79 1600 1462 1853 6451 3000 0006
USD: PL 52 1600 1462 1853 6451 3000 0007

- Filesystem Management
- Swap Space and Virtual Memory
- Lab: Create a Swap Area
- Live Lab: Deploy Standard Storage

- Deploy Logical Volume Management
  - Logical Volume Manager Storage
  - Create Physical Volumes and Volume Groups
  - Create and Modify Logical Volumes
  - Lab: Create a Logical Volume
  - Logical Volume Deployments
  - Live Lab: Deploy Logical Volume Manager (LVM)
- Mount Storage
  - Manually Testing Mount
  - Mounting & Unmounting LVM Partitions
  - Testing the Storage
  - Automatically Mounting New Storage
  - Adding Entries to /etc/fstab
  - Disk Performance
  - Maintaining File Systems
  - Scheduling Input/Output Operations
  - Filesystem Issues
  - Troubleshooting Device Issues
- Manage Other Storage Options
  - Linux Unified Key Setup 2
  - Redundant Array of Independent Disks (RAID)
  - Network-Attached Storage
  - Storage Area Network
  - Troubleshooting Capacity Issues
  - Troubleshooting Storage Performance
  - Troubleshoot Storage Problems
  - Lab: Determine Disk Free Space
  - Lab: Determine the Directory Size
  - Setting and Troubleshooting Disk Quotas
  - Lab: Find the User Quota
  - Lab: Turn Quotas On
  - Lab: Turn Quotas Off

Compendium Education Center Ltd.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70
BNP Paribas Bank Polska S.A.
EUR: PL 79 1600 1462 1853 6451 3000 0006
USD: PL 52 1600 1462 1853 6451 3000 0007

- Applied Live Lab: Configure Storage
- Managing the Linux Kernel and Devices
  - Gather Hardware Information
    - Server Architectures
    - Hardware Reporting Tools
    - Viewing Hardware Information
    - Hardware Monitoring Tools
    - Devices in the /dev Directory
    - The IPMI Tool
    - Central Processing Unit (CPU) Information
    - Memory Information
    - Troubleshoot CPU & Memory Issues
    - Lab: View /proc Information
    - Memory Exhaustion
  - Manage Processes
    - Process Concepts
    - Process Information Commands
    - Viewing Process Information with ps
    - Viewing Process Information with top and htop
    - Lab: View Process Information
    - Performance Analysis
    - Detailed Process Information
    - Process Management
    - Process Manipulation
    - Termination Signals and Zombie Processes
    - Lab: Stop a Zombie Process
    - Lab: Use pidof
    - Prioritizing CPU Processes
    - Job Control
    - Troubleshooting Process Issues
    - Live Lab: Manage Processes
  - Manage the Linux Kernel
    - The Linux Kernel
    - Kernel Updates and Parameters
    - Kernel Module Management
    - Lab: Insert a Module into the Kernel

Compendium Education Center Ltd.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70
BNP Paribas Bank Polska S.A.
EUR: PL 79 1600 1462 1853 6451 3000 0006
USD: PL 52 1600 1462 1853 6451 3000 0007

- Lab: Remove a Module from the Kernel
- Kernel Panic
- Troubleshooting Kernel Issues
- Troubleshooting Application Crashes

- Maintaining Services
  - Configure Services with systemd
    - System Initialization
    - systemd Unit Files
    - Service Unit Files
    - Timer Unit Files
    - Mount Unit Files
    - Target Unit Files
    - Services and Daemons
    - Start, Stop, and Reload Services
    - Enable, Disable, and Mask Services
    - systemctl Commands
    - Lab: Manage System Services
    - Service Failures
    - Lab: Enable System Services at Boot
    - Live Lab: Manage systemd and Services
  - Configure Common System Services
    - System Service Configuration Basics
    - Network Time
    - Synchronize Time with NTP
    - Task Scheduling
    - Webserver Configuration
    - Network File System Configuration
    - Samba File Sharing Configuration
    - Printing Configuration
    - Live Lab: Deploy Services
  - Apply Localization Settings
    - Output Modification
    - Configuring Locale Settings
    - System Localization
    - Configuring Time Zone Settings
    - Troubleshooting Time Zone Issues

Compendium Education Center Ltd.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70
BNP Paribas Bank Polska S.A.
EUR: PL 79 1600 1462 1853 6451 3000 0006
USD: PL 52 1600 1462 1853 6451 3000 0007

- Applied Live Lab: Manage Processes and Configure Authentication
- Challenge Live Lab: Manage Servers

- Configuring Network Settings
  - Identify Network Fundamentals
    - TCP/IP and Network Devices
    - IP Addresses
    - Network Ports
  - Manage Network Settings
    - Network Interface Configuration
    - NetworkManager
    - Using NetworkManager
    - Netplan
    - Network Interface Errors
    - Network Configuration Files
    - Network Tools
    - IP Address Assignments
    - Configure DHCP Clients
    - Name Resolution Configuration
    - Configure DNS Settings
    - Testing Name Resolution
    - Troubleshooting Name Resolution Failures
    - Lab: Use nslookup
    - Email Service Configuration
    - Live Lab: Configure Network Settings
  - Set Up Remote Administrative Access
    - Secure Shell Configuration
    - Key-based Authentication
    - Remote Tools for the Command-line Interface
    - Testing Remote Systems
    - Data Transfer Tools
    - Remote Tools for the Graphical User Interface
    - Live Lab: Configure Remote Administration
  - Configure the Firewall
    - Firewall Use Cases
    - Key Firewall Features
    - Configure the Firewall

Compendium Education Center Ltd.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70

BNP Paribas Bank Polska S.A.
EUR: PL 79 1600 1462 1853 6451 3000 0006
USD: PL 52 1600 1462 1853 6451 3000 0007

- Firewall Management with iptables and nftables Tools
- Firewall Management with firewalld
- Configure firewalld
- Firewall Management with Uncomplicated Firewall
- Live Lab: Configure a Firewall
- Network Address Translation
- Troubleshooting Common Firewall Issues

- Monitor Network Traffic
  - Basic Network Monitoring Tools
  - Troubleshooting High Network Latency
  - Connectivity Testing with Path Tools
  - Using Network Troubleshooting Tools - Ping
  - Using Network Troubleshooting Tools - Traceroute
  - Lab: Find Path Information
  - Connectivity Testing with Socket Tools
  - Network Traffic Analysis
  - Live Lab: Intercept Network Traffic
  - Network Mapping
  - Troubleshoot Connectivity Issues
  - Applied Live Lab: Configure Networking

- Securing a Linux System
  - Harden a Linux System
    - Security Goals
    - Hardening Servers
    - Data Integrity
    - Secure File Destruction
    - Identity and Access Management (IAM)
    - Configure Public Key Authentication
    - Authentication Methods
    - Configuring VPN Access and Authentication
    - Centralized Authentication Methods
    - Pluggable Authentication Modules (PAM)
    - Password Management with Pluggable Authentication Modules (PAM)
    - Live Lab: Harden a Linux System
  - Monitor and Audit Log Files
    - Compliance Procedures

Compendium Education Center Ltd.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70
BNP Paribas Bank Polska S.A.
EUR: PL 79 1600 1462 1853 6451 3000 0006
USD: PL 52 1600 1462 1853 6451 3000 0007

- auditd Configuration
- Data Sources for Monitoring
- journalctl Configuration
- rsyslog Configuration
- Log Parsing and Forwarding
- Viewing Log Files
- Lab: View Log Files
- logrotate Configuration
- Vulnerability Scanning

- Manage Encryption and Certificates
  - Encryption Concepts
  - Encryption Types
  - Hashing
  - Data Protection States
  - Certificate Use Cases
  - Public Key Infrastructure (PKI) Certificate Management
  - Live Lab: Manage Certificates with OpenSSL
- Implement Mandatory Access Controls
  - SELinux Concepts
  - SELinux Contexts
  - SELinux Settings
  - Managing SELinux
  - SELinux Policy Types
  - SELinux Troubleshooting Tools
  - Live Lab: Configure SELinux
  - AppArmor
  - Applied Live Lab: Configure System Security
  - Challenge Live Lab: Secure a Network

- Installing Linux
  - Summarize the Linux Boot Process
    - Boot Sources
    - Device Initialization Firmware
    - The Bootloader
    - Use GRUB2
    - Lab: Set the GRUB Timeout
    - Live Lab: Manage Grub2

Compendium Education Center Ltd.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70
BNP Paribas Bank Polska S.A.
EUR: PL 79 1600 1462 1853 6451 3000 0006
USD: PL 52 1600 1462 1853 6451 3000 0007

- Loading the Kernel
- Boot Process Steps
- Troubleshooting Common Boot Problems
- Live Lab: Systemd Boot Options
- Lesson Review

- Deploy Linux Virtualization
  - Virtual Machine Concepts
  - Virtual Machine Management
  - Virtual Machine Deployment
  - Virtual Machine Management Commands
  - Configure Virtualization Settings
  - Virtual Networks
  - Configuring Networking on a Virtual Machine
- Deploy Linux
  - Physical and Virtual Linux Deployments
  - The Linux Installation Process
  - Preparing to Install Linux
  - Partition the Drive and Install Linux
  - Live Lab: Deploy Linux On A Vm
  - The Graphical User Interface
  - Post-Deployment Steps
  - Applied Live Lab: Install Linux On A New Client

- Scripting with Bash and Python
  - Write Basic Bash Scripts
    - The Purpose of Scripts
    - Script Editors and Naming Conventions
    - Script Comments
    - Write and Execute a Simple Script
    - Run Scripts in Linux
    - Executing and Sourcing a Script
    - Script Syntax
  - Implement Shell Script Elements
    - Built-in Shell Commands
    - Script Components
    - Exit Codes
    - Common Script Utilities

Compendium Education Center Ltd.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70
BNP Paribas Bank Polska S.A.
EUR: PL 79 1600 1462 1853 6451 3000 0006
USD: PL 52 1600 1462 1853 6451 3000 0007

- File Manipulation Commands in Scripts
- Standard Stream Redirection

- Execute Scripts
  - Variables Concepts
  - Modifying Variables
  - Variables in Use
  - Field Separator Variables
  - Conditionals
  - Control Statements in Bash Scripts
  - Loops
  - For Loops
  - While and Until Loops
  - Shell Parameter Expansion
  - Arrays and Expansions
  - Operators
  - Best Practices in Scripting
  - Live Lab: Use Scripting Elements
- Write Basic Python Code
  - Python Concepts
  - Python Installation
  - Python Code Development
  - Python Virtual Environments
  - Modules, Packages, and Libraries
  - Writing a Python Program
  - Generating Python Code with Artificial Intelligence (AI)
- Manage Version Control with Git
  - Git Concepts
  - Installing Git
  - Code Management with Git
  - Using a Git Repository
  - Local Git Repository Scenario
  - Remote Git Repository Scenario
  - Lab: Use Git
  - Live Lab: Manage Version Control With Git
  - Applied Live Lab: Manage Scripts

- Managing Containers in Linux

Compendium Education Center Ltd.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70
BNP Paribas Bank Polska S.A.
EUR: PL 79 1600 1462 1853 6451 3000 0006
USD: PL 52 1600 1462 1853 6451 3000 0007

- Manage Container Administration, Storage, and Networking
  - Container Concepts
  - Container Operations
  - Container Deployment
  - Customizing Containers
  - Container Administration
  - Managing Containers
  - Container Storage
  - Container Networking
  - Live Lab: Deploy Containers
- Implement Container Orchestration
  - Container Orchestration Concepts
  - Docker Compose
  - Docker Swarm
  - Kubernetes
  - Container Orchestration Solutions

- Automating Infrastructure Management
  - Implement Automation
    - Automation Concepts
    - Automation
    - Automation Use Cases
    - Begin Using Automation
  - Apply Orchestration
    - DevOps Concepts
    - Orchestration
    - Infrastructure as Code
    - File Types in Infrastructure as Code
    - Configuration Management
    - Ansible
    - Live Lab: Configure A System With Ansible
    - Puppet
    - OpenTofu
    - Challenge Live Lab: Deploy And Configure A Linux Server

REQUIREMENTS:

Compendium Education Center Ltd.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70
BNP Paribas Bank Polska S.A.
EUR: PL 79 1600 1462 1853 6451 3000 0006
USD: PL 52 1600 1462 1853 6451 3000 0007

Recommended experience: 12 months of hands-on experience with Linux servers; CompTIA A+, Network+, or Server+, or comparable knowledge is recommended.

Difficulty level

CERTIFICATE:

The participants will obtain certificates signed by CompTIA (course completion). This course will help prepare you for the CompTIA Linux+ certification exam, which is available through the Pearson VUE test centers.

Each participant in an authorized training CompTIA Linux+ Prep Course held in Compendium CE will receive a free XK0-006 CompTIA Linux+ Certification Exam vouchers.

TRAINER:

Authorized CompTIA Trainer

Compendium Education Center Ltd.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70

BNP Paribas Bank Polska S.A.
EUR: PL 79 1600 1462 1853 6451 3000 0006
USD: PL 52 1600 1462 1853 6451 3000 0007