## LINUX-BASED OPERATING SYSTEMS

Here's a comprehensive list of Linux-based penetration testing operating systems, each designed for security professionals, ethical hackers, and cybersecurity enthusiasts. These distros come preloaded with tools for penetration testing, digital forensics, reverse engineering, and vulnerability analysis.



## Top Linux-Based Penetration Testing OS

OS Name	Description	Based On
Kali Linux	Most popular distro for penetration testing and ethical hacking. Maintained by Offensive Security.	Debian
Parrot Security OS	Lightweight, security-focused OS with tools for pen testing, privacy, and development.	Debian
BackBox	Ubuntu-based distro for security testing and analysis with a focus on performance and simplicity.	Ubuntu
BlackArch	Arch Linux-based distro for advanced users with 2,800+ tools for all types of penetration tests.	Arch Linux
CAINE	Stands for Computer Aided INvestigative Environment, focused on digital forensics.	Ubuntu
DEFT Linux	Digital Evidence & Forensic Toolkit for forensic investigations.	Ubuntu
Pentoo	Gentoo-based distro optimized for pen testing and security assessment.	Gentoo
Samurai Web Testing Framework	Live Linux distro focused on web and web app penetration testing.	Ubuntu
NST (Network Security Toolkit)	Fedora-based distro with tools for monitoring, packet analysis, and network testing.	Fedora
Bugtraq	Distro with tools for malware analysis, pen testing, and more.	Debian / Ubuntu

ArchStrike	Lightweight, Arch-based for advanced penetration	Arch Linux
	testers and researchers.	
Fedora Security Lab	Fedora spin with a security lab environment for	Fedora
	teaching and security auditing.	
Kali Nethunter	Mobile version of Kali for Android phones (typically	Android /
	rooted devices).	Kali
Matriux Krypton	Debian-based OS for security, forensics, and	Debian
	penetration testing.	
SEKURUM Linux	Brazilian distro built for pen testing and digital	Ubuntu
	forensics.	
ALinux	Lightweight OS geared toward ethical hacking and	Arch Linux
	security assessments.	
REMnux	Focused on malware analysis and reverse engineering.	Ubuntu
CyborG Hawk	Ubuntu-based distro with a wide collection of security	Ubuntu
	tools.	
URIX OS	Designed for advanced cybersecurity professionals	Debian
	with focus on anonymity and pen testing.	
Network Security	Fedora-based live distro with network analysis and	Fedora
Toolkit (NST)	sniffing tools.	
RedHawk Linux	Emerging distro designed with advanced cyber ops in	Arch /
	mind.	Debian

## Notes:

- **Kali Linux** and **Parrot OS** are the most widely used and recommended for beginners and professionals alike.
- **BlackArch** is best suited for power users familiar with Arch Linux.
- Some of these OSes are better for **forensics (like CAINE and DEFT)** while others are **web-focused (like SamuraiWTF)**.