

```
PCMKUIT@PhamCaoMinhKien:/mnt/c/Users/Pham Cao Minh Kien/Documents/INTERN/SCA$ bash tools/setup_environment.sh
SCA Environment Setup & Validation
=====
Starting environment setup...

Checking directory structure...
-----
[OK] Directory exists: tools
[OK] Directory exists: report
[OK] Directory exists: .github/workflows
Checking and fixing line endings...
Processing: npm_audit.sh
[OK] Already in Unix format
[OK] Set executable permission
Processing: osv_scan.sh
[OK] Already in Unix format
[OK] Set executable permission
Processing: pip_audit.sh
[OK] Already in Unix format
[OK] Set executable permission
Processing: safety_scan.sh
[OK] Already in Unix format
[OK] Set executable permission
Processing: sca_scan.sh
[OK] Already in Unix format
[OK] Set executable permission
Processing: setup_environment.sh
[OK] Already in Unix format
[OK] Set executable permission

Validating scripts...
-----
Validating: npm_audit.sh
[OK] Shebang is correct
File type: tools/npm_audit.sh: Bourne-Again shell script, Unicode text, UTF-8 text executable
[OK] No CRLF line endings
[OK] Executable permission set
[OK] Syntax is valid
Validating: osv_scan.sh
[OK] Shebang is correct
File type: tools/osv_scan.sh: Bourne-Again shell script, ASCII text executable
```

```
File type: tools/osv_scan.sh: Bourne-Again shell script, ASCII text executable
[OK] No CRLF line endings
[OK] Executable permission set
[OK] Syntax is valid
Validating: pip_audit.sh
[OK] Shebang is correct
File type: tools/pip_audit.sh: Bourne-Again shell script, Unicode text, UTF-8 text executable
[OK] No CRLF line endings
[OK] Executable permission set
[OK] Syntax is valid
Validating: safety_scan.sh
[OK] Shebang is correct
File type: tools/safety_scan.sh: Bourne-Again shell script, ASCII text executable
[OK] No CRLF line endings
[OK] Executable permission set
[OK] Syntax is valid
Validating: sca_scan.sh
[OK] Shebang is correct
File type: tools/sca_scan.sh: Bourne-Again shell script, ASCII text executable
[OK] No CRLF line endings
[OK] Executable permission set
[OK] Syntax is valid
Validating: setup_environment.sh
[OK] Shebang is correct
File type: tools/setup_environment.sh: Bourne-Again shell script, ASCII text executable
[OK] No CRLF line endings
[OK] Executable permission set
[OK] Syntax is valid

Checking Docker environment...
-----
[OK] Docker is installed
Version: Docker version 28.5.1, build e180ab8
[OK] Docker daemon is running
```

SETUP SUMMARY

=====

Scripts Status:

- Total scripts: 6
- Executable: 6
- Valid syntax: 6

Docker: [READY]

Docker: [READY]

SETUP COMPLETED SUCCESSFULLY!

You can now run: `bash tools/sca_scan.sh`

Setup completed at: Thu Nov 13 03:23:41 UTC 2025

```
PCMKUIT@PhamCaoMinhKien:/mnt/c/Users/Pham Cao Minh Kien/Documents/INTERN/SCA$ bash tools/sca_scan.sh demo-python report/python_demo.md
```

SCA Multi-Scanner Suite

Project: demo-python

Output: report/python_demo.md

Running pip-audit...

Running pip-audit for: demo-python

pip-audit completed: report/pip_audit.md

Running npm audit...

Running npm audit for: demo-python

No package.json found in demo-python

Running OSV Scanner...

Running OSV Scanner for: demo-python

Scanning dir /scan

Starting filesystem walk for root: /

End status: 1 dirs visited, 1 inodes visited, 0 Extract calls, 81.888µs elapsed, 81.963µs wall time

OSV Scanner completed: report/osv_scan.md

Running Safety check...

Running Safety check for: demo-python

Safety check completed: report/safety_scan.md

SCA scan completed: report/python_demo.md

Running risk assessment...

Calculating Risk Score...

Risk assessment completed. Total Score: 42

Found: 2 Critical, 2 High, 2 Medium, 0 Low vulnerabilities

```
PCMKUIT@PhamCaoMinhKien:/mnt/c/Users/Pham Cao Minh Kien/Documents/INTERN/SCA$ bash tools/remediation_generator.sh demo-python report/python_demo.md report/fixes.md
```

Generating remediation guidance based on scan results...

Remediation guide generated: report/fixes.md

Based on vulnerabilities found in: report/python_demo.md

```
PCMKUIT@PhamCaoMinhKien:/mnt/c/Users/Pham Cao Minh Kien/Documents/INTERN/SCA$ bash tools/trend_analyzer.sh report/scan1.md
Analyzing vulnerability trends...
Extracting metrics from: report/scan1.md
Found: 11 Critical, 11 High, 10 Medium (Total: 32)
Current scan data: {
  "timestamp": "2025-11-13T04:47:41+00:00",
  "critical": 11,
  "high": 11,
  "medium": 10,
  "total": 32,
  "project": "SCA"
}
Updating trend history...
Generating trend analysis...
Historical scans found: 2
Changes: Critical 0, High 0, Medium 0, Total 0
Trend analysis completed: report/trend_analysis.md
Historical data updated: report/scan_trends.json

PCMKUIT@PhamCaoMinhKien:/mnt/c/Users/Pham Cao Minh Kien/Documents/INTERN/SCA$ cat > report/scan2.md << 'EOF'
# Dependency Vulnerability Report
CRITICAL: 5
HIGH: 8
MEDIUM: 7
EOF
PCMKUIT@PhamCaoMinhKien:/mnt/c/Users/Pham Cao Minh Kien/Documents/INTERN/SCA$ bash tools/trend_analyzer.sh report/scan2.md
Analyzing vulnerability trends...
Extracting metrics from: report/scan2.md
Found: 1 Critical, 1 High, 1 Medium (Total: 3)
Current scan data: {
  "timestamp": "2025-11-13T04:48:57+00:00",
  "critical": 1,
  "high": 1,
  "medium": 1,
  "total": 3,
  "project": "SCA"
}
Updating trend history...
Generating trend analysis...
Historical scans found: 3
Changes: Critical -10, High -10, Medium -9, Total -29
Trend analysis completed: report/trend_analysis.md
Historical data updated: report/scan_trends.json

PCMKUIT@PhamCaoMinhKien:/mnt/c/Users/Pham Cao Minh Kien/Documents/INTERN/SCA$ bash tools/license_checker.sh
Checking license compliance for: .
Detecting project type...
- No package files detected - using demo data for testing

License compliance report generated: report/license_report.md
Scanned packages: 24
High risk: 1, Medium risk: 1, Low risk: 22
```