Troubleshooting Jenkins Local Certificate Issues (macOS)

This document outlines the steps used to troubleshoot and resolve SSL certificate errors encountered when running Jenkins locally on macOS (installed via Homebrew). The issue typically manifests as SSLHandshakeException or PKIX path building failures when Jenkins attempts to access external resources such as update centers or plugins.

Common Error Observed

SSLHandshakeException: PKIX path building failed: sun.security.provider.certpath.SunCertPathBuilderException: unable to find valid certification path to requested target

Root Cause

The issue was caused by a corporate SSL inspection certificate (for example, Zscaler) not being trusted by the Java runtime used by Jenkins. Although the certificate may exist in the macOS Keychain, Java maintains its own truststore and does not automatically use system certificates.

Resolution Steps

1. Identify the Jenkins Home directory when installed via Homebrew: *brew services list* or check logs under /usr/local/var/log/jenkins.
2. Locate the Java installation used by Jenkins: */usr/libexec/java_home*
3. Identify the Java truststore (cacerts) file: *$JAVA_HOME/lib/security/cacerts*
4. Export the corporate root certificate (e.g., Zscaler) from macOS Keychain as a .cer file.
5. Import the certificate into Java cacerts using keytool: *sudo keytool -importcert -alias corporate-root-ca -file corporate-root-ca.cer -keystore $JAVA_HOME/lib/security/cacerts* Default password: *changeit*
6. Verify that the certificate is successfully imported: *keytool -list -keystore $JAVA_HOME/lib/security/cacerts | grep corporate-root-ca*
7. Restart Jenkins service: *brew services restart jenkins*
8. Re-run Jenkins jobs and confirm that SSL-related errors no longer occur.

Outcome

After importing the required certificate into the Java truststore and restarting Jenkins, all SSLHandshakeException and PKIX path building errors were resolved. Jenkins was able to connect to external services successfully, and pipelines executed without certificate-related failures.