

FlexNet Code Insight 6.13.1

Installation & System Administration Guide

Legal Information

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Contents

1	FlexNet Code Insight 6.13.1 Installation and System Administration Guide	9
	FlexNet Code Insight Document Set	9
	Types of Installation	10
	Single Server vs. Multiple Server Deployments	11
	Dedicated Disk Drives	11
	Installing Manually or Installing Using the Installer.	12
	Database Server and Application Server	13
	Special Consideration for Non-US Customers	15
	Special Considerations for LDAP Integration	15
	Special Considerations for SCM and Build System Integration	15
	Running on a Virtual Server (e.g. VMware)	15
	Installable Sub-Components	15
	Prerequisites	16
	Operating Systems	17
	Databases	
	Hardware	
	Software	20
	Browsers.	21
	Source Code Management	22
	Network and Firewall Considerations	22
	System Settings	22
	Environment Variables	23
	Linux/Unix Environment Variables	23
	Windows Environment Variables	23
	Mail Server Requirements and Configuration.	24
	Setting the Open File Limit (Linux/Unix)	24
	Maximum Virtual Memory Limit	25

	Database Settings	. 26
	Configuring a Database	. 26
	Character Encoding	. 27
	Setting the UTF-8 for MySQL Installations on Linux	27
	Setting the UTF-8 for MySQL Installations on Windows	27
	Compliance Library	. 28
2	Installing FlexNet Code Insight Manually	. 29
3	Extracting Application Files.	. 31
	Choosing an Installation Directory	31
	Installing the Compliance Library	32
	Installing FlexNet Code Insight	32
	Installing the Database Driver	33
	Activating FlexNet Code Insight	33
4	Preparing the Database for Installation	. 35
	Preparing the Database	35
	Running the Database Setup Scripts	36
5	Configuring the Tomcat Web Server	. 37
	Setting Max Heap	37
	Setting the Install Directory	38
	Linux Installations: Headless Mode for JVM	38
	Enabling HTTP Secure (HTTPS over SSL)	38
	Increasing Post Request Size	38
	Running as a Windows Service (32-bit and 64-bit)	
6	Editing Configuration (Properties) Files.	. 41
	Entering Required Information	41
	Installation Options	43
	Configuring Email Services	. 43
	Disabling SMTP Mail Server Authentication	. 44
	Configuring Email Notification Options	. 44
	Configuring Notification Email Templates	. 44
	Scan Engine Configuration Options	. 40
		. 47
	Controlling False Positives	/ 4. ۸7
	Controlling False Negatives	. 47 48
	Claiming Detected Copyrights as Yours	. 40 29
	Tuning Email/URL Detection	50 S
	Controlling False Positives	50. 50
		. 50

	Tuning License Detection	50
	Editing the License Detection Patterns File	. 51
	License Text Template Example for Apache License, Version 2.0	. 51
	License Keywords Example for Apache License, Version 2.0	. 51
7	Administration: Starting & Stopping Servers	. 53
	Starting and Stopping the Server Manually	53
	Validating a Successful Server Startup	53
	Using a Supported Browser	. 54
	Using an .xls File	. 54
	Changing the Number of Log Files Maintained	54
8	Running an Electronic Update	. 55
	Running an Electronic Update for the First Time	55
	Running an Electronic Update Manually	55
	Using the Electronic Update Server (HTTPS)	. 55
	Using a Local Electronic Update Archive	. 56
	Scheduling Automatic Electronic Updates	56
9 Usi	Installing FlexNet Code Insight	
03	Installing FlowNat Code Insight With the Installer	57
	Installing FloyNot Code Insight Using the Linux Command Line	61
	Installing FlexNet Code Insight Using the Linux Command Line	61
10	Installing FlexNet Code Insight Using the Linux Command Line	61 . <mark>69</mark>
10	Installing FlexNet Code Insight Using the Linux Command Line	61 . <mark>69</mark> 69
10	Installing FlexNet Code Insight Using the Linux Command Line	61 .69 69 70
10	Installing FlexNet Code Insight Using the Linux Command Line	61 .69 69 70 70
10	Installing FlexNet Code Insight Using the Linux Command Line	61 . 69 69 70 70 71
10 11	Installing FlexNet Code Insight Using the Linux Command Line	61 . 69 69 70 70 70 71
10	Installing FlexNet Code Insight Using the Linux Command Line	61 69 70 70 70 71 71
10	Installing FlexNet Code Insight Using the Linux Command Line	61 . 69 70 70 71 71 72 73
10 11 12	Installing FlexNet Code Insight Using the Linux Command Line Launching FlexNet Code Insight Starting and Stopping the Server Logging into FlexNet Code Insight Running the Update Service. Installing the Jenkins Plugin Jenkins Downloads Setting up the Jenkins Plugin Generating a JWT Token Using ScriptRunner.	61 69 70 70 71 71 71 72 73
10 11 12	Installing FlexNet Code Insight Using the Linux Command Line	61 69 70 70 71 71 72 73 75
10 11 12	Installing FlexNet Code Insight Using the Linux Command Line	61 69 70 70 71 71 72 73 75 75 76
10 11 12	Installing FlexNet Code Insight Using the Linux Command Line	61 69 70 70 71 71 72 73 75 75 76 77
10 11 12 13	Installing FlexNet Code Insight Using the Linux Command Line	61 69 70 70 71 71 73 73 75 76 77
10 11 12 13	Installing FlexNet Code Insight Using the Linux Command Line . Launching FlexNet Code Insight . Starting and Stopping the Server . Logging into FlexNet Code Insight . Running the Update Service. Installing the Jenkins Plugin . Jenkins Downloads . Setting up the Jenkins Plugin . Generating a JWT Token . Using ScriptRunner. ScriptRunner Options . Generating a JSON Web Token (JWT). Using the JWT Token with scriptRunner. Exporting & Importing Workspaces. Usage Overview .	61 69 70 70 71 71 72 73 75 75 76 77 79 79
10 11 12 13	Installing FlexNet Code Insight Using the Linux Command Line	61 69 70 70 71 71 71 73 75 75 76 77 79 80

	What Inventory is Exported and Imported?	80
	About Backward Compatibility	81
Ir	nstalling the Scripts	.81
	Installing Manually	81
U	Ising the Scripts with ScriptRunner	.82
	Using the Export Script	82
	Export Options	82
	File and Path Options	82
	Server Options	83
	What to Export	84
	Boolean Options	84
	Other Options	85
	Combining Export Flags	85
	Export Usage	85
	Export Output	85
	Export Usage Examples	86
	Using the Import Script.	86
	Import Options.	87
	Import Options that Accept Parameters	. 87
	Import Options that Require an MD5 Match	88
	Import Options that Do Not Require an MDS match	89
	CSV Eila	09 80
		<u>an</u>
	l oa file (import loa)	90
	Metadata Taas	. 90
	Import Usage Examples	91
	······································	
14 li	ntegrating with LDAP for Authentication (Optional)	93
C	Configuring I DAP Integration	93
-	Configurable LDAP Properties	95
D	Data Synchronization	.95
_	User Metadata	95
	Disabled Users	95
	LDAP Synchronization to Multiple Sources	95
L	DAP Configuration	.96
	Set Up a User Search Filter	96
	Default Role Assignment	97
	Set Up a User List Sync	97
	Server Paging	98
	LDAP over SSL	99
	Troubleshooting and Testing LDAP Configurations.	99

15	Configuring Additional Scan Servers (Optional)	
	Overview	101
	Configuration Details	101
16	Configuring FlexNet Code Insight using MySQL Commands	103
17	Configuring the FlexNet Code Insight Windows Service	105
18	Using SCM Connectors	
	Using the SCM Command Line Client	
	Recommended Clients	108
	Verified Team Explorer Everywhere Client Versions.	
	Setting the Environment Variable	
	Workspace Settings	
	IBM Rational ClearCase	
	Using Perforce (P4) to Manage the Codebase	
	Using Subversion (SVN) to Manage the Codebase	
	Git Repositories	
	Git Protocol Options	
	Anonymous HTTP	
	Authenticated HTTP	
	SSH Authentication	
	SSH over HTTPS	
	Git Workspace Configuration	119
	Microsoft Team Foundation Server (TFS).	121
	Project Copy Settings	122
19	Performing Backup and Recovery	
	Terminology	
	Performing the Backup	
	Performing the Restore	124
20	Frequently Asked Questions	127

Contents

1

FlexNet Code Insight 6.13.1 Installation and System Administration Guide

This guide is intended for system administrators, database administrators, and anyone who wants a deeper understanding of FlexNet Code Insight. This section contains the following topics:

- FlexNet Code Insight Document Set
- Prerequisites

FlexNet Code Insight Document Set

The following are the titles of all the documentation in the FlexNet Code Insight library.

Table 1-1 • Document Set

Book Title	Description	
Installation and System Administration Guide	This guide can be used by a system administrator and a database administrator installing Enterprise Edition in a large scale multi-server configuration in the corporate IT environment or on a single-server (standalone) machine. It can also be used by a system administrator and database administrator performing system administration.	
User Guide	This guide contains activity-based information for using the features and functionality.	
Licensing Guide	This guide contains third-party licensing text.	

Types of Installation

The type of installation you choose should be based on the size and business needs of your organization. The table below lists some possible configurations.

Table 1-2 • Installation Types

Installation	Details
 Core/Scan Server FlexNet Code Insight Core Server FlexNet Code Insight Scan Engine FlexNet Code Insight Compliance Library FlexNet Code Insight Workspace Directory Database Server Database (can be installed on Core server if necessary) 	 Recommended for product trials and small scale projects Suitable for medium-size projects Recommended for Standard Edition (Scan-only) installations
 Core Server FlexNet Code Insight Core Server Scan Server FlexNet Code Insight Scan Engine FlexNet Code Insight Compliance Library FlexNet Code Insight Workspace Directory Database Server Database (can be installed on Core server if necessary) 	 The most common type of installation Suitable for most medium-size projects
 Core/Library Server FlexNet Code Insight Core Server FlexNet Code Insight Compliance Library Database Server Database (can be installed on Core server if necessary) 	Recommended for Governance Edition (Workflow-only) installations

Table 1-2 • Installation Types

Installation	Details
Core Server	Recommended for enterprise installations
FlexNet Code Insight Core Server	and large-scale projects
Scan Server 1	
FlexNet Code Insight Scan Engine	
FlexNet Code Insight Compliance Library	
FlexNet Code Insight Workspace Directory	
Scan Server 2	
FlexNet Code Insight Scan Engine	
FlexNet Code Insight Compliance Library	
FlexNet Code Insight Workspace Directory	
Scan Server n (n represents the total number of scan servers)	
FlexNet Code Insight Scan Engine	
FlexNet Code Insight Compliance Library	
FlexNet Code Insight Workspace Directory	
Database Server	
• Database (can be installed on Core server if necessary)	

Single Server vs. Multiple Server Deployments

A single instance of FlexNet Code Insight Core server and multiple FlexNet Code Insight Scan Engine servers are supported for this release. See Configuring Additional Scan Servers (Optional) for details on configuring additional FlexNet Code Insight Scan Engine servers.

Dedicated Disk Drives

To avoid a scenario in which the I/O operations are competing for the same disk access, we recommend that you install the following entities on separate drives:

- FlexNet Code Insight Compliance Library
- FlexNet Code Insight Scan Engine (including the codebase that will be scanned)
- MySQL/Oracle/SQL Server Database (preferable on a separate dedicated server)

Chapter 1 FlexNet Code Insight 6.13.1 Installation and System Administration Guide FlexNet Code Insight Document Set

Installing Manually or Installing Using the Installer

There are two methods for installing FlexNet Code Insight:

- Installing FlexNet Code Insight Manually
- Installing FlexNet Code Insight Using the Installer

See the section that applies to your installation method.

Database Server and Application Server

Information about sizing and backing up database and application servers is presented in the following section.

Table 1-3 • Servers

ltem	Description			
Database Server	We recommend a separate server for the database to eliminate resource contention between the FlexNet Code Insight application and database.			
Character Set	Select UTF-8 as the character set when installing your MySQL database server.			
	This is a critical step. To ensure that application data is stored properly in the database, UTF8 must be selected as the default character set when installing MySQL.			
	Linux Installation:			
	Ensure that you have a my.cnf file in your /etc/mysql directory			
	If you do not have a my.cnf in your /etc/mysql directory, locate one of these files in the / usr/share/mysql directory and copy it to /etc/mysql. Rename the file my.cnf .			
	a) mysql-large.cnf (MySQL prior to 5.5)			
	b) my-large.cnf (MySQL 5.5 to 5.6)			
	c) my-default.cnf (MySQL 5.6+)			
	Navigate to the /etc/mysql/my.cnf file, and edit the file as follows:			
	<pre>[client] #password= [your_password] port= 3306 socket= /var/lib/mysql/mysql.sock default-character-set = utf8 [mysqld] default-character-set = utf8 default-collation = utf8_general_ci character-set-client = utf8 skip-character-set-client-handshake</pre>			
	Windows Installation:			
	Navigate to my.ini or my-default.ini file located in your MySQL Server installation directory (for example, C:\Program Files\MySQL\MySQL Server 5.6), and edit the following lines:			
	[mysqld]			
	default-character-set=utf8			

Table 1-3 • Servers

ltem	Description		
Storage Engine	Select InnoDB as the default storage engine if you are using MySQL.		
	Linux:		
	Edit the my.cnf file in the [mysqld] section.		
	default-storage-engine = INNODB		
	Windows:		
	Add the following line to the my.ini file:		
	default-storage-engine=innodb		
	Alternatively, you may use the InnoDB plug-in. For more information, see: http:// dev.mysql.com/doc/innodb-plugin/1.0/en/innodb-plugin-installation.html		
Buffer Pools	To support FlexNet Code Insight electronic updates, you may need to change the memory configuration for your database instance.		
	MySQL		
	Specify a combination of innodb_buffer_pool_instances and innodb_buffer_pool_size so that each buffer pool instance is at least 1GB.		
	Oracle uses auto memory management. See Memory Configuration and Use page.		
	SQL Server uses auto memory management. See Memory Management Architecture page.		
Sizing	Have a DBA configure your database as you would for any other enterprise web application.		
	Start with a base of 30GB to accommodate the FlexNet Code Insight Data libraries and other data such as users, groups, and projects disk space for the database. We recommend that you start with a base of 30GB.		
	Scale up by 2MB for every 5,000 files scanned.		
	Begin by estimating much you will scan in the first 6 months and add that to the 30GB base size.		
	As for data volume, we're not moving enormous amounts of data, and we don't have extremely high concurrent transaction rates.		
	Set "innodb_buffer_pool_size = 1G"		
Backup	This is a DBA activity per the customer's data policies.		
	Perform a database dump or export of the entire central database schema regularly.		
	Back up the workspaces directory at the same time you back up the database so they remain in sync.		
	For additional information on backup and recovery, see Performing Backup and Recovery .		

Special Consideration for Non-US Customers

Due to the way we store vulnerability scores in the central database, non-US Oracle customers should use the en_US.UTF8 locale to avoid update service errors.

Special Considerations for LDAP Integration

FlexNet Code Insight can be configured to use an external LDAP or AD Directory Server to authenticate users for login. See Integrating with LDAP for Authentication (Optional) for more information.

Special Considerations for SCM and Build System Integration

The scm.properties file located in **<CODE_INSIGHT_ROOT_DIR>\<version>\config\scanEngine** contains parameters to enable the SCM connectors. SCM clients can be enabled for the following clients:

- ClearCase
- Perforce
- Subversion
- Git
- TFS (Team Foundation Server)

Consult FlexNet Code Insight Support for specific details on how to integrate with your existing SCM installation.

Running on a Virtual Server (e.g. VMware)

To run the FlexNet Code Insight Scan Server on a virtual server using VMware (or other vendor), it is recommended that you configure the full domain name by setting the Primary DNS Suffix to the full DNS name you use to connect.

Installable Sub-Components

The following sub-components are included with FlexNet Code Insight:

- FlexNet Code Insight application: codeinsight_<version>.zip
 - FlexNet Code Insight Core Server (Web UI and Detector Client)
 - FlexNet Code Insight Scan Server
 - FlexNet Code Insight ScriptRunner Bundle
- FlexNet Code Insight Compliance Library (separate deliverable)
- FlexNet Code Insight License Key (separate deliverable)

Prerequisites

The section lists the prerequisites for installing and using FlexNet Code Insight.

- Operating Systems
- Databases
- Hardware
- Software
- Browsers
- Source Code Management
- Network and Firewall Considerations
- System Settings
- Mail Server Requirements and Configuration
- Setting the Open File Limit (Linux/Unix)
- Maximum Virtual Memory Limit
- Database Settings
- Compliance Library

For the up-to-date prerequisites, always refer to the latest FlexNet Code Insight Release Notes.

Operating Systems

FlexNet Code Insight supports the following operating systems.

Table 1-4 • Supported Operating Systems

Supported	Recommended
• Ubuntu 18.04	• Ubuntu 18.0.4
• Ubuntu 16.04	• RHEL 7.2 (64-bit)
• Ubuntu 14.0.4	• CentOS 7 (64-bit)
• RHEL 7.0, 7.2 (64-bit)	• Windows 7 Enterprise (64-bit)
• RHEL 6.5 (64-bit)	• Windows Server 2012 Enterprise (64-bit)
• CentOS 6.5 (64-bit)	
• CentOS 7 (64-bit)	
• Win 7 Enterprise or Professional (64-bit)	
• Win 8.1 Enterprise or Professional (64-bit)	
• Win 10 Enterprise or Professional (64-bit)	

- Windows Server 2016 Standard
- Windows Server 2012 Enterprise or Professional (64-bit)

The following operating systems have been used to run FlexNet Code Insight in the past but have not been fully verified as part of the current release:

- Mac OS (all versions)
- Windows Server 2008 R2 Enterprise Edition (64-bit)
- Windows XP Professional (64-bit)
- Windows 7 Ultimate (64-bit)
- CentOS 5, 6.5 (64-bit)

Databases

FlexNet Code Insight supports the following database software.

Table 1-5 •	Supported	and Recomm	nended Databases
-------------	-----------	------------	------------------

Supported		Recommended	
•	MySQL 5.6, 5.7	• MySQL 5.7	
•	Oracle 11g, 12c	• Oracle 11g	
•	MS SQL Server	MS SQL Server	
	• 2012 r2 Enterprise	• 2012 r2 Enterprise	
	• 2014 Enterprise	• 2014 Enterprise	
	• 2016 Enterprise	• 2016 Enterprise	

The MySQL 5.0-5.5 database version has been used to run FlexNet Code Insight in the past but has not been fully verified as part of the current release.

Hardware

FlexNet Code Insight supports the following hardware configurations.

Table	1-6	•	Supported	Hardware
-------	-----	---	-----------	----------

Туре	Supported	Recommended
Scan Server	 32GB RAM 750GB free hard disk space for the 	 32GB RAM or 64GB depending on expected load
	following:	• 1TB disk space for the following:
	 Compliance Library (approximately 500GB on disk) 	 Compliance Library (approximately 500GB on disk)
	• Code Base (materials to be scanned)	• Code Base (materials to be scanned)
	Workspaces (scanned results)	 Workspaces (scanned results)
		• Solid State Drive (SSD)
		 Significant performance benefits if workspace directory is located on SSD drive

Туре	Supported	Recommended
Core Server	 16GB RAM At least 650MB of space for product and attachments See the Database Server entry below if hosting both Core Server and database on the same machine 	 32GB RAM (required if Core Server and database reside on same machine) 30GB of space for product and attachments See the Database Server entry below if hosting both Core Server and database on the same machine
Client	• 16GB RAM	• 32GB RAM
Database Server	 Database Sizing: The recommendation is that you have a DBA configure your database as you would for any other Enterprise Web Application. For disk space, the recommendation is to start with a base of 30GB (for SQL Server, 50GB) to accommodate the FlexNet Code Insight Data Libraries and other data related to users, teams, projects, and such. If you install the database on the same machine as the Core Server, calculate the hard-drive requirement by adding the database base size to the recommended Core Server disk space. (Also see Additional Notes about Hardware Requirements.) After starting with the base size, scale up by 2MB for every 5,000 files scanned. Begin by estimating how much you will scan in the first 6 months, and add that to the 30GB base size. As for data volume, FlexNet Code Insight does not move enormous amounts of data, nor does in the more the order of the recommender of the recommender of the recommender of the recommender of the starting with the base size, scale up by 2MB for every 5,000 files scanned. Begin by estimating how much you will scan in the first 6 months, and add that to the 30GB base size. 	

Table 1-6 • Supported Hardware

Additional Notes about Hardware Requirements

Note the following about hardware requirements:

- Ensure that you allocate sufficient buffer pool size to the database. Otherwise, the Electronic Update might not complete. For MySQL, set the innodb buffer pool size to a minimum of 1G (innodb_buffer_pool_size = 1G).
- For SQL Server, it is strongly recommended that the database and the Core Server reside on the same machine (with a minimum hard-drive requirement of 50GB for the database and 30GB for the Core Server, for a total of 80GB).

Software

FlexNet Code Insight supports the following software.

Table 1-7 • Suppor	rted Software
--------------------	---------------

Software	Description	Downloa	d URL
Java JDK	Either required on all Core and Scan servers. Use the latest update when possible.	Oracle JDK 8	http://www.oracle.com/technetwork/java/ javase/downloads/jdk8-downloads- 2133151.html
	• Oracle JDK 8 (64-bit)	Zulu	https://www.azul.com/downloads/zulu/
	You must purchase a license from Oracle to ensure that you receive updates.	Open JDK 8	
	• Zulu OpenJDK 8 (64-bit) (from Azul)		
Java JRE	Required on client server to launch Detector.	Oracle JRE 8	http://www.oracle.com/technetwork/java/ javase/downloads/jre8-downloads- 2133155.html
	Use the latest Java update when possible.		
	• Oracle JRE 8 (64-bit)		
	You must purchase a license from Oracle to ensure that you receive updates.		
	Note • Not required for Workflow- only installations or on client servers that already have the JDK installed.		
Database	Required to access the FlexNet Code	MySQL	http://www.heidisql.com/download.php
chem	 Any basic client application or command line client interface may be used. Several options are listed on the right. 		http://www.oracle.com/technetwork/ database/features/instant-client/index- 097480.html
			https://msdn.microsoft.com/en-us/library/ mt238290.aspx

Software	Description	Downloa	d URL
Database	Required on all Core and Scan servers for FlexNet Code Insight to access the database.	MySQL	mysql-connector-java-5.1.x-bin.jar
Driver			http://dev.mysql.com/downloads/ connector/j/5.1.html
Download and place the driver – corresponding to your database type into the tomcat/lib directory.	Oracle	ojdbc6.jar	
		http://www.oracle.com/technetwork/ database/enterprise-edition/jdbc-112010- 090769.html	
	MS SQL	sqljdbc4.jar	
		Server	http://www.microsoft.com/en-us/download/ details.aspx?displaylang=en&id=11774

Table 1-7 • Supported Software

Other

An email account is required to send email notifications from the FlexNet Code Insight server.

Additional Notes about Software Requirements

Note the following about software requirements:

- Support for Java 7 (JDK and JRE) was removed in FlexNet Code Insight 6.12.0. Ensure that you use Java 8 (JDK and JRE) with a compatible update version.
- Code Insight provides support for Zulu OpenJDK 8 only. Other OpenJDK applications might work with Code Insight but are not recommended.
- Support for Java 11 is not available.
- Java Updates released after the FlexNet Code Insight 6.12.3 release date are not guaranteed to be compatible. If you encounter an issue running a newer update, notify support, which will resolve these issues on a best effort basis and issue a hotfix as needed.

Browsers

FlexNet Code Insight supports the following browsers.

Table 1-8 • Supported Browsers

Supported		Recommended	
•	Firefox (latest stable version)	•	Firefox (latest stable version)
•	Google Chrome (latest stable version)	•	Google Chrome (latest stable version)
•	Internet Explorer 10, 11	•	Internet Explorer 11

Chapter 1 FlexNet Code Insight 6.13.1 Installation and System Administration Guide
Prerequisites

Source Code Management

FlexNet Code Insight supports the following source code management software.

SCM	Sample Client Download
GIT	http://git-scm.com/downloads
Subversion (SVN)	http://tortoisesvn.tigris.org/
Team Foundation Server (TFS)	http://www.microsoft.com/en-us/download/details.aspx?id=30656
Perforce	http://www.perforce.com/product/components/perforce-visual-client
ClearCase	http://www-03.ibm.com/software/products/en/clearcase

Network and Firewall Considerations

Configure the servers by specifying a fully qualified domain name (for example, hostname.domain.com) or IP address. Enable those port numbers used by FlexNet Code Insight in all of the firewalls. You may use the default port numbers listed below or configure the service to use a custom port.

Table 1-10 •	Port Numbers	Used in Firewalls
--------------	--------------	-------------------

Port #	Details
1433/1521/3306	Database Server Access Port (MS SQL Server, Oracle, MySQL)
8888/443	Tomcat (http/https)
465	External SMTP (mail) Server
389	External Authentication Directory Server (Active Directory/LDAP)
8005 and 8009	Tomcat Connector and Tomcat Shutdown Ports (local access only)

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Note • All ports used by the application are also configurable. You may designate a custom port as needed.

System Settings

This section lists the FlexNet Code Insight environment variables, open file limit (Linux/Unix), and the maximum virtual memory limit.

Ensure that the following settings are in place before proceeding with the installation.

- Environment Variables
- Setting the Open File Limit (Linux/Unix)
- Maximum Virtual Memory Limit

Environment Variables

This section lists the FlexNet Code Insight environment variables.

- Linux/Unix Environment Variables
- Windows Environment Variables

Linux/Unix Environment Variables

Perform the following steps to verify Linux/Unix environment variables.

E

Task	То	To verify Linux/Unix environment variables:		
	1.	After installing the JDK, verify that the JAVA_HOME and PATH variables are set correctly on the core and scan servers.		
	2.	To determine your environment variables settings, enter the following on the command line:		
		echo \$JAVA_HOME echo \$PATH		
	3.	To find the exact path to your Java executable, enter the following:		
		which java		
	4.	To set JAVA_HOME and PATH variables, open the file .bash_profile under /home/ <user> and add the following text:</user>		
		PATH=\$PATH:\$HOME/bin export JAVA_HOME=/usr/java/ <insert jdk="" name=""> export PATH=/usr/java/jdk1.7.0_##/bin:/usr/java/<insert jdk="" name="">/lib:\$PATH export PATH</insert></insert>		
Window	ws En	vironment Variables		

Perform the following steps to verify Windows environment variables.

F Task

To verify Windows environment variables:

- 1. After installing the JDK, verify that the JAVA_HOME variable is set correctly on the core and scan servers.
- 2. To find out your environment variables settings, navigate to Control Panel >System > Advanced System Settings.
- 3. Click the Environment Variables button.

- 4. Look for the JAVA_HOME system variable and make sure that it is set appropriately to your JDK version
- 5. To set the JAVA_HOME variable, click on the **New** or **Edit** button depending on whether JAVA_HOME is present in the list of variables, and point the variable to your JDK install directory, such as the following:

C:\Program Files\Java\jdk1.7.0_##

Mail Server Requirements and Configuration

Code Insight requires access to an SMTP mail server for sending workflow and user-management related email messages to users. Authenticated SMTP is supported. SMTP over SSL is supported using starttls. Mail server configuration properties are set in the core.properties file located in **Code** Insight_ROOT_DIR>\6.10=1.1\config\core.

Setting the Open File Limit (Linux/Unix)

This procedure specifies the open file limit in Linux/Unix.



Important • You can choose to perform this step before or after the application is installed; however, make sure to perform this step before launching the application.



Important • These steps related to increasing open file size are essential for FlexNet Code Insight to function properly on Unix/Linux platforms.

You need to increase the maximum number of open files setting for your particular operating system from the default number. This number indicates the maximum number of files normal users, for example, non-root users, can have open in a single session.

The following steps are verified for Fedora Core4 and may vary based on the OS/Linux Distribution. We assume you are using the Bourne Shell (sh), Bourne Again Shell (bash), or Korn Shell (ksh).



Note • If you are using C Shell (csh) or Tenex C Shell (tcsh), you must use the Limit openfiles NNNN syntax instead of the ulimit -n NNNN syntax.



Note • There are some limitations to using tcsh. For example, tcsh shell only sets the soft-limit. You can't set the hard-limit using tcsh. This may be undesirable in some situations.

Task To specify the open file limit in Linux/Unix:

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1. Check the current value with the ulimit -a command. The system lists all settings. The Open Files setting (-n) will probably be set to the default of 1024 as shown below.

[fire~4]\$ulimit -a		
core file size	(blocks, -c)	0
data seg size	(kbytes, -d)	unlimited
max nice	(-e)	0
file size	(blocks, -f)	unlimited
pending signals	(-1)	69120
max locked memory	(kbytes, -1)	32
max memory size	(kbytes, -m)	unlimited
open files	(-n)	1024
open rires	()	1023
pipe size	(512 bytes, -p)	8
pipe size POSIX message queues	(512 bytes, -p) (bytes, -q)	8 819200
pipe size POSIX message queues max rt priority	(512 bytes, -p) (bytes, -q) (-r)	8 819200 0
pipe size POSIX message queues max rt priority stack size	(512 bytes, -p) (bytes, -q) (-r) (kbytes, -s)	8 819200 0 10240
pipe size POSIX message queues max rt priority stack size cpu time	(512 bytes, -p) (bytes, -q) (-r) (kbytes, -s) (seconds, -t)	8 819200 0 10240 unlimited
pipe size POSIX message queues max rt priority stack size cpu time max user processes	(512 bytes, -p) (bytes, -q) (-r) (kbytes, -s) (seconds, -t) (-u)	8 819200 0 10240 unlimited 69120
pipe size POSIX message queues max rt priority stack size cpu time max user processes virtual memory	(512 bytes, -p) (bytes, -q) (-r) (kbytes, -s) (seconds, -t) (-u) (kbytes, -v)	8 819200 0 10240 unlimited 69120 unlimited

2. Open /etc/security/limits.conf (if running Fedora Core 4 or higher) or /etc/sysctl.conf (if running Red Hat 6.5 or higher) and add the following entries:

soft nofile 65536 hard nofile 65536

Note • Other distributions may require a different set up.

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Tip • On some systems, it may be necessary to add *ulimit* -*n* 16384 to the source file (such as .profile, .bashrc, or .bash_profile) to make sure the change is applied.

- **3.** Log off, and then login again.
- 4. Check to make sure the new value is reflected by entering ulimit -a. The system will re-list all of the settings. The **open files** setting (-n) is set to **16384**.

[fire~4]\$ulimit -a		
core file size	(blocks, -c)	0
data seg size	(kbytes, -d)	unlimited
max nice	(-e)	0
file size	(blocks, -f)	unlimited
pending signals	(-i)	69120
max locked memory	(kbytes, -1)	32
max memory size	(kbytes, -m)	unlimited
open files	(-n)	16384
apan asses	(,	
pipe size	(512 bytes, -p)	8
pipe size POSIX message queues	(512 bytes, -p) (bytes, -q)	8 819200
pipe size POSIX message queues max rt priority	(512 bytes, -p) (bytes, -q) (-r)	8 819200 0
pipe size POSIX message queues max rt priority stack size	(512 bytes, -p) (bytes, -q) (-r) (kbytes, -s)	8 819200 0 10240
pipe size POSIX message queues max rt priority stack size cpu time	(512 bytes, -p) (bytes, -q) (-r) (kbytes, -s) (seconds, -t)	8 819200 0 10240 unlimited
pipe size POSIX message queues max rt priority stack size cpu time max user processes	(512 bytes, -p) (bytes, -q) (-r) (kbytes, -s) (seconds, -t) (-u)	8 819200 0 10240 unlimited 69120
pipe size POSIX message queues max rt priority stack size cpu time max user processes virtual memory	(512 bytes, -p) (bytes, -q) (-r) (kbytes, -s) (seconds, -t) (-u) (kbytes, -v)	8 819200 0 10240 unlimited 69120 unlimited
pipe size POSIX message queues max rt priority stack size cpu time max user processes virtual memory file locks	(512 bytes, -q) (bytes, -q) (-r) (kbytes, -s) (seconds, -t) (-u) (kbytes, -v) (-x)	8 819200 0 10240 unlimited 69120 unlimited unlimited

Maximum Virtual Memory Limit

In some cases, the maximum allowed virtual memory limit is lower than the desired size.

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Task

To check the current value, do the following

- 1. Execute the ulimit -v command.
- 2. If not already set to "unlimited", we recommend that you follow the procedures in Setting the Open File Limit (Linux/Unix). For more information, see http://www.network-theory.co.uk/docs/gccintro_77.html.

Database Settings

This section explains how to configure a database and set the UTF-8 for MySQL.

- Configuring a Database
- Character Encoding

Configuring a Database

To configure a database for FlexNet Code Insight, perform the following steps.

Tack	То	To configure a database:		
TUSK	10	Use an existing database or create a new database and schema for use by ElevNet Code Insight. Make sure your		
	1.	user has the right privileges to access the schema.		
	2.	Ensure that the schema name conforms to the following guidelines:		
		• The first character of the database name is alphabetic.		
		• The database name only contains alphanumeric characters or the following special characters: _ \$ #.		
		• Do not use dashes (-) in the database schema name.		
	3.	Ensure that the database server is configured to accept connections from the client machines that FlexNet Code Insight is using (both core and Scan Engine servers). For example, in MySQL with a database user named FlexNet Code Insight, this can be accomplished with the following command.		
		GRANT ALL PRIVILEGES on *.* to 'CodeInsight'@'%' with GRANT OPTION;		
	4.	Ensure you select the correct character set (UTF-8) and storage engine (InnoDB).		
	5.	To check if you have the correct character set, use the following database command.		
		SHOW VARIABLES LIKE 'character%';		
	6.	Make sure the character_set_database has utf8 in the Value column.		
	7.	To check if you have InnoDB set up, use the following database command.		
		SHOW ENGINES;		
	8.	The InnoDB row should show YES or DEFAULT in the Support column.		

Character Encoding

This section explains how to set UTF-8 character encoding for MySQL Installations on both Linux and Windows.

- Setting the UTF-8 for MySQL Installations on Linux
- Setting the UTF-8 for MySQL Installations on Windows

Setting the UTF-8 for MySQL Installations on Linux

This section explains how to set UTF-8 character encoding for MySQL Installations on Linux.

E Task To set the UTF-8 character encoding for MySQL installations on Linux: 1. Ensure that you have a my.cnf file in your /etc/mysql directory If you do not have a my.cnf file in your /etc/mysql directory, locate one of the following files in the /usr/share/ mysql directory and copy it to /etc/mysql. Rename the file to my.cnf. mysql-large.cnf (MySQL prior to 5.5) my-large.cnf (MySQL 5.5 to 5.6) my-default.cnf (MySQL 5.6+) 2. To change the default encoding to UTF-8, navigate to the /etc/mysql/my.cnf file, and edit the file as follows: [client] #password = [your_password] port = 3306 socket = /var/lib/mysql/mysql.sock default-character-set = utf8 [mysqld] default-character-set = utf8 default-collation = utf8 general ci character-set-client = utf8 character-set-server = utf8 skip-character-set-client-handshake 3. To set the storage engine to InnoDB, edit the my.cnf file in the [mysqld] section. default-storage-engine = INNODB 4. As an alternative, you may use the InnoDB plug-in. Ē **Note** • For more information, see: http://dev.mysgl.com/doc/innodb-plugin/1.0/en/innodb-plugininstallation.html.

Setting the UTF-8 for MySQL Installations on Windows

This section explains how to set UTF-8 character encoding for MySQL installations on Windows.

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Task

To set the UTF-8 character encoding for MySQL installations on Windows:

 Navigate to my.ini or my-default.ini file located in your MySQL Server installation directory, such as C:\Program Files\MySQL\MySQL Server 5.6, and edit the following lines:

[mysqld] default-character-set=utf8

2. To set the storage engine to InnoDB, add the following line to the my.ini file:

default-storage-engine=innodb

Compliance Library

The FlexNet Code Insight Compliance Library is required before proceeding with the installation. Ensure that you allocate at least 520 GB of space to the drive that will contain the library.

Obtain and extract the FlexNet Code Insight Compliance Library into the location of your choice, such as:

<CODE_INSIGHT_ROOT_DIR>/PDL/CL/2.34.

Installing FlexNet Code Insight Manually

Perform the following sequential steps to install FlexNet Code Insight manually. For the procedure to install FlexNet Code Insight using the Installer, see Installing FlexNet Code Insight Using the Installer.

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Note • The examples in this section assume that the FlexNet Code Insight Core and Scan Engine server are located on the same server.

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Task

To install FlexNet Code Insight manually, do the following:

- 1. Prepare your environment and install the prerequisite software on the Core/Scan Engine server. See Preparing the Database for Installation for detailed steps.
- 2. Extract the FlexNet Code Insight application. See Extracting Application Files for detailed steps.
- 3. Copy the FlexNet Code Insight Compliance Library. See Installing the Compliance Library for details.
- Copy the FlexNet Code Insight application license key to <Code Insight_ROOT_DIR>. See Activating FlexNet Code Insight for details.
- 5. Prepare the Central Database on the Core/Scan Engine Server or Dedicated.
- Download and install the database driver on the Core/Scan Engine server. See Installing the Database Driver for details.
- 7. Configure your database. See Preparing the Database for details.
- 8. Run the following database scripts, in the following order. See Running the Database Setup Scripts for details.

palamida_ddl.sql (This creates the Code Insight central database schema and sd data.)
request_form_short.sql or request_form_long.sql (This is the default request form definitions. Most
users select the long request form) or a custom request form provided to you by Code Insight.
reports.sql (This is the default report definitions.)

9. Run any custom scripts provided to you by Flexera Software.

- 10. Configure the properties files. See Editing Configuration (Properties) Files for details.
 - Core Server
 - Scan Servers
 - Detector
 - Runner
- 11. Configure the Tomcat web server. See Configuring the Tomcat Web Server for details.
- **12.** Perform any optional configuration steps:
 - Configure LDAP. See Integrating with LDAP for Authentication (Optional) for details.
 - Configure additional scan servers. See Configuring Additional Scan Servers (Optional) for details.
 - Configure any other custom files and pages (that is, .html and .json files for custom dashboards and grids) recommended by Flexera.
- 13. Start the Tomcat web server. See Administration: Starting & Stopping Servers for details.
- **14.** On initial startup of FlexNet Code Insight, the system automatically schedules an electronic update to run 2 minutes after the Tomcat server is started. If it fails, verify your electronic update settings. See Running an Electronic Update for details.

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Extracting Application Files

This section contains the following topics:

- Choosing an Installation Directory
- Installing the Compliance Library
- Installing FlexNet Code Insight
- Installing the Database Driver
- Activating FlexNet Code Insight

Choosing an Installation Directory

The following instructions assume that the core/scan engine are located on the same server.

- Select a base directory on the Core/Scan Engine server where FlexNet Code Insight and all related content will be installed. This directory is referred to as <Code Insight_ROOT_DIR> in this document.
- For Windows, the recommended location is C:\CodeInsight.
- For Linux, the recommended location is \$HOME/apps/CodeInsight.

Linux users, we strongly recommended that you create a new FlexNet Code Insight user for the system. Do not run the application as root.

- You may place the codebase (files to scan) in any location accessible by the Scan Engine server. Although not required, we recommend placing it on a separate drive to avoid the IO operations competing for the same disk space.
- When configuring the scan settings for a workspace, you will be prompted to select the scan locations. Files must be visible to the server in order to be scanned.

Installing the Compliance Library

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Task

To install the FlexNet Code Insight Compliance library (CL), do the following:

Extract the library into **Code Insight_ROOT_DIR>\PDL\CL\2.x** (where x is based on your library version). We recommend a 1TB drive to hold the CL and future updates to the CL.

Installing FlexNet Code Insight

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Task

To install FlexNet Code Insight, do the following:

- 1. Extract CodeInsight_<version>.zip into <Code Insight_ROOT_DIR>.
- 2. Confirm the successful extraction of the following content directories:
 - <Code Insight_ROOT_DIR>\<version> \Code InsightInstallSysAdminGuide.pdf
 - <Code Insight_ROOT_DIR>\<version>\Code InsightInstallerGuide.pdf
 - <Code Insight_ROOT_DIR>\<version>\config (property files and other required directories)
 - <Code Insight_ROOT_DIR>\<version>\dbScripts (database sql scripts to run as part of the installation)
 - palamida_ddl.sql (Code Insight schema and sd data)
 - request_form_long.sql or request_form_short.sql (default request form definitions)
 - reports.sql (default report definitions)
 - <Code Insight_ROOT_DIR>\<version>\docs (documentation including tutorial for this release)
 - <Code Insight_ROOT_DIR>\<version>\logs (all logs generated by Code Insight are written to this directory)
 - <Code Insight_ROOT_DIR>\<version>\scriptRunner
 - <Code Insight_ROOT_DIR>\<version>\third-party (third-party licenses governing use of third-party materials in Code Insight 6.x)
 - <Code Insight_ROOT_DIR>\<version>\tomcat (pre-configured Tomcat with applicationdeployed)

Installing the Database Driver

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Task

To install the database driver, do the following:

1. Download and extract the appropriate database driver for your type. The links provided in this section specify a download location.

MySQL

mysql-connector-java-5.1.x-bin.jar http://dev.mysql.com/downloads/connector/j/5.1.html

Oracle

ojdbc6.jar

http://www.oracle.com/technetwork/database/enterprise-edition/jdbc-112010-090769.html

MS SQL Server

sqljdbc4.jar

http://msdn.microsoft.com/en-us/sqlserver/aa937724.aspx

2. Find the required jar file in the downloaded file and copy it to the following directory:

"<Code Insight_ROOT_DIR>\<version>\tomcat\lib\.

Activating FlexNet Code Insight

You will need a Code Insight license key to allow access to the application. Contact Flexera Software to obtain your license key. A new **palamida.key** or **codeInsight.key** with data services enabled is required for use of the FlexNet Code Insight Analyzer feature.

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Task

To activate FlexNet Code Insight, do the following;

- 1. Copy the codeInsight.key (or palamida.key) file to <Code Insight_ROOT_DIR>\<version>\\
- **2.** If replacing an existing key, change any passwords contained in your property files (i.e. core.db.properties) to their unencrypted form (encryption on each Code Insight key is unique).

Chapter 3 Extracting Application Files Activating FlexNet Code Insight

4

Preparing the Database for Installation

This section contains details for preparing the database and running database set up scripts:

- Preparing the Database
- Running the Database Setup Scripts

Preparing the Database

The following user accounts are recommended for management of the FlexNet Code Insight database:

- DBA or System Administrator with elevated privileges
- Creates the database
- Performs backups as necessary
- FlexNet Code Insight User with Read/Write privileges
- Connects to the database
- Executes database scripts
- Updates the database as necessary

The following should be performed by a DBA or user with elevated privileges:

- Use an existing database or create a new database and schema for use by FlexNet Code Insight. Below are
 reference links for proper syntax depending on your database vendor:
 - MySQL Reference Manual
 - Oracle[®] 11g Release 2 Database Administrator's Guide
 - MS SQL Server Reference Manual

- Ensure that the database name conforms to the following guidelines:
 - The first character of the database name is alphabetic.
 - The database name only contains alphanumeric characters or the _, \$, #.
 - Do not use dashes (-) in the database name.
- Ensure that the is configured to accept connections from the client machines that FlexNet Code Insight is using (both core and Scan Engine servers). This is often done using the GRANT PRIVELEGES command. See the reference manual for your database type for more information.
- Create a FlexNet Code Insight user with Read/Write privileges. Assign the user to the FlexNet Code Insight database with a read/write role.
- Start the database. Typically, you can configure the database to run automatically as a service (Windows).

Running the Database Setup Scripts

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Task

To run the database setup scripts, do the following:

1. Navigate to the location of the database scripts:

<Code Insight_ROOT_DIR>\<version>\dbScripts\<DB_VENDOR>

Ensure that you access the appropriate scripts for your database vendor.

- 2. Run the following scripts (for your database vendor) in the following order:
 - palamida_ddl.sql (Code Insight schema and sd data).
 - request_form_short.sql or request_form_long.sql (default request form definitions, most users select the long request form).
 - reports.sql (default report definitions).
Configuring the Tomcat Web Server

This section provides details related to configuring files related to running FlexNet Code Insight with Tomcat:

- Setting Max Heap
- Setting the Install Directory
- Linux Installations: Headless Mode for JVM
- Enabling HTTP Secure (HTTPS over SSL)
- Increasing Post Request Size
- Running as a Windows Service (32-bit and 64-bit)

Setting Max Heap

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Task

To set Max Heap, do the following:

- 1. Go to the **<Code Insight_ROOT_DIR>\<version>\tomcat\bin** directory and edit the **catalina.bat** file if running Windows or catalina.sh file if running Linux.
- Update the Max Heap size (-Xmx) for Tomcat. FlexNet Code Insight recommends that you set the Max Heap size to approximately 80% of available memory. For a 16GB system, the value should be set to 12288m. For 32GB systems, the value should be set to 25600. See the example below.
- **3.** Update the Min Heap size (-Xms) to be equal to or less than the max heap size. For a 16GB system, the value should be set to 12288m. For 32GB system, the value should be set to 25600. See the example below.

Windows

set CATALINA_OPTS=-Xms12288m -Xmx12288m -XX:PermSize=1024m -XX:MaxPermSize=1024m

Linux

CATALINA_OPTS="-Xms12288m -Xmx12288m -XX:PermSize=1024m -XX:MaxPermSize=1024m

Setting the Install Directory

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Task

To set the install directory, do the following:

- Edit the <Code Insight_ROOT_DIR>\<version>\tomcat\bin\catalina.bat (or catalina.sh) file to point to your FlexNet Code Insight Install directory.
- 2. Update the value of palamidaInstallPath as shown in these examples.

On Windows:

-DpalamidaInstallPath="<Code Insight_ROOT_DIR>/<version>/"

On Linux:

-DCode InsightInstallPath=\$HOME/apps/Code Insight/<version>"

Linux Installations: Headless Mode for JVM

For Linux installations, the Headless Mode for JVM options should be enabled. Verify that the value of -Djava.awt.headless is set to true (this is the default). See http://www.oracle.com/technetwork/articles/javase/ headless-136834.html for more details about Headless Mode.

Enabling HTTP Secure (HTTPS over SSL)

To implement SSL, a web server must have an associated certificate for each Code Insight Core and Code Insight Scan Engine server (IP address) that accepts secure connections. Refer to http://en.wikipedia.org/wiki/HTTP_Secure and https://tomcat.apache.org/tomcat-7.0-doc/ssl-howto.html for more details about HTTPS/SSL. To enable an HTTPS connection over SSL, follow the detailed steps in the **Code Insight_ROOT_DIR>\<version>\tomcat** https\readme.txt file.

Increasing Post Request Size

To allow Tomcat to accept large data amounts in a submitted web form, the maxPostSize attribute must be increased from the default value of 10MB to your preferred size. Follow the steps below to change the maxPostSize:

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Task To increase post request size, do the following:

- 1. Edit the <Code Insight_ROOT_DIR>\<version>\tomcat\conf\server.xml.
- 2. Search for the Look for Connector tag:

<Connector executor="tomcatThreadPool"

```
port="8080" protocol="HTTP/1.1"
connectionTimeout="30000"
maxPostSize="10485760"
redirectPort="8443" />
```

3. Add or edit the maxPostSize attribute to the required value in bytes. For example, 5MB would be 5242880.

Running as a Windows Service (32-bit and 64-bit)

For detailed steps on configuring Apache Tomcat as a Windows service, see Configuring the FlexNet Code Insight Windows Service.

Chapter 5 Configuring the Tomcat Web Server

Running as a Windows Service (32-bit and 64-bit)

Editing Configuration (Properties) Files

The following topics in this section provide specific details for editing the Configuration Properties file:

- Entering Required Information
- Installation Options
- Tuning Copyright Detection
- Tuning Email/URL Detection
- Tuning License Detection

Entering Required Information

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Task

To enter required information in the Configuration Properties file, do the following:

- 1. Update the core.db.properties (located in <Code Insight_ROOT_DIR>\<version>\config\core\ with your database settings.
- Uncomment the six lines that start with #db in the corresponding section according to your database vendor (MySQL, Oracle, or SQL Server).
- 3. Update the settings to match your database environment.
- 4. Replace <DB_HOST>, <DB_PORT>, <DB_NAME>, <DB_USERNAME>, and <DB_PASSWORD> with the appropriate values.



Note • If no database port number is entered in lieu of <DB_PORT>, the port is defaulted to the following values:

- 3306 for MySQL Server Database
- 1521 for Oracle Database
- 1433 for MS SQL Server Database

- 5. The database password is only visible before initial startup. At startup, the application replaces the plain-text database password with an encrypted value and uses the encrypted value for all subsequent server (re)starts. To change the password, the FlexNet Code Insight Administrator must shut down the server, enter a new plain-text password in the core.db.properties file, and restart the server. During startup, the application rereads the plain-text password and writes the encrypted password into core.db.properties.
- 6. Update core.properties located in <Code Insight_ROOT_DIR>\<version>\config\core\ by doing the following:
 - Enter the core.server.url by replacing <CORE_SERVER_NAME> with the name or IP address of the FlexNet Code Insight Core server, and replace <HTTP_PORT> with the port number of the FlexNet Code Insight Core Server, which is typically set to 8888.
 - Uncomment the lines that start with # scan.server.
 - Replace each occurrence of <ALIAS> with an alias value of your choosing.
 - Replace <SCAN_SERVER_NAME> with the name or IP address of the FlexNet Code Insight scan server. You can use 127.0.0.1 to refer to a local host.
 - Replace <HTTP_PORT> with your HTTP port, which, in general, would be 8888.
 - (Optional) Configure the "Emails Configuration" section of the property file. Email is required to receive system-generated passwords for newly created application users.
 - (Optional) Update the Electronic Updates Settings Frequency Settings section (if necessary):

```
# Electronic Updates Settings Frequency Settings
auto.update.enabled = true
auto.update.jobFrequency = 0 0 12 ? * SUN
```

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Note • By default, electronic updates are configured to run weekly on Sunday at noon (12:00pm)

- (Optional) Set the web session timeout by updating the session.timeout parameter with the desired value in number of minutes.
- (Optional) Update web.home.page to change your preferred home page. Possible values are my-tasks, my-shortcuts, dashboard, or my-projects. The default value is the dashboard tab on the Home page. If you have entered my-tasks, my-shortcuts, or dashboard, the corresponding tab will be the default active one for every visit to the Home page.
- 7. Update scanEngine.properties located in <Code Insight_ROOT_DIR>\<version>\config\scanEngine by doing the following:
 - Enter the core.server.url by replacing <CORE_SERVER_NAME> with the name or IP address of the FlexNet Code Insight Core server. Replace <HTTP_PORT> with the port number of the FlexNet Code Insight Core Server, typically set to 8888.
 - Enter the serverURL by replacing the <SCAN_SERVER_NAME> with the name or IP address of the FlexNet Code Insight Scan server. Replace <HTTP_PORT> with the port of the FlexNet Code Insight Scan server, typically set to 8888.
 - Replace <ALIAS> with the alias of your FlexNet Code Insight Scan server. Ensure that the alias matches the one specified in **core.properties**.

- Set the workspaceBaseDirPath to the location where you will store your FlexNet Code Insight workspaces. The recommended path is <Code Insight_ROOT_DIR>\workspaces.
- (Optional) Set the serverFileSystemRoot= to limit access to directories on the FlexNet Code Insight Scan server.
- 8. In scan.properties (<Code Insight_ROOT_DIR>\<version>\config\scan.properties) set the signaturesDirPath to your FlexNet Code Insight CL. Point to the directory that contains the pattern files ending in .dat and the bdb directory.

Installation Options

This section provides details about configuring different email-related and scan engine options.

Configuring Email Services

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Task

To configure email services, do the following:

1. Configure core.properties (<Code Insight_ROOT_DIR>\<version>\config\core\) as required to establish connection with the SMTP mail server:

```
send.email.enabled = true (Set to false to disable email notifications)
smtp.sender.email = <SENDER_EMAIL_ADDRESS>
smtp.host.name = <EMAIL_HOST_NAME>
smtp.userName = <EMAIL_USERNAME>
smtp.password = <EMAIL_PASSWORD>
smtp.host.port = 465
mail.smtp.auth = true
mail.smtp.starttls.enable = true
```

- 2. If email notifications are enabled, during the initial startup, the application replaces the plain-text SMTP password with an encrypted value. The application reads the plain text password and writes the encrypted password back into the **core.properties** file in the following format: <ENCRYPTED_PASSWORD>ENCRYPTED. For subsequent server restarts, the application uses the encrypted password. To change the password, the administrator must bring down the server.
- 3. Enter the new plain-text password into the core.properties file.
- 4. Restart the server. During startup, the application, again, reads the plain text password and writes the encrypted password back into the **core.db.properties**.
- 5. Ensure that the following email address (Code Insight-notifier@Code Insight.com) is on your junk email sender's safe list so that FlexNet Code Insight notification emails do not end up in your junk email folder.

Disabling SMTP Mail Server Authentication

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```
Task
             To disable SMTP mail server authentication, do the following:

    If you email server does not require authentication, use the following email settings:

                  emailsender.authentication = false
                  smtp.password = mail.smtp.auth = false mail.smtp.starttls.enable = false
             Also, modify an Apache Tomcat configuration file located as follows:
                  <Code Insight_ROOT_DIR>\<version>\tomcat\webapps\palamida\WEB-INF\classes\application-context.xml
             3. Comment out the user name and password properties (shown in bold) from the mailSender section.
                  <bean id="mailSender" class="org.springframework.mail.javamail.JavaMailSenderImpl">
                  <property name="host" value="${smtp.host.name}"/></property name="host" value="${smtp.host.name}"/>
                  <property name="port" value="${smtp.host.port}"/>
                  <!-
                  <property name="username" value="${smtp.userName}"/>
                  <property name="password" value="${smtp.password}"/>
                  ->
                  <property name="javaMailProperties"></property name="javaMailProperties">
                  <props>
                  <prop key="mail.smtp.host">${smtp.host.name}</prop></prop>
                  <prop key="mail.smtp.user">${smtp.userName}</prop></prop>
                  <prop key="mail.smtp.port">${smtp.host.port}</prop>
                  <prop key="mail.smtp.auth">${mail.smtp.auth}</prop>
                  <prop key="mail.smtp.starttls.enable">${mail.smtp.starttls.enable}</prop>
                  </props>
```

Configuring Email Notification Options

</property> </bean>

The following email notification options are set by default in the product. To change the type of users that are notified when comments are posted, policies are changed or requests are modified, add the following properties to the **core.properties** file and modify as necessary:

```
comment.notification.role = requester,reviewer policy.change.notification.role = policy_admin
request.change.notification.role = requester,reviewer
```

Configuring Notification Email Templates

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Task

To configure notification email templates, do the following:

- 1. Notifications for workflow and user management actions are sent to the user as html-formatted email messages, the location of which is <Code Insight_ROOT_DIR>\<version>\config\core\emails.
- **2.** These notification messages are configurable using a template-based formatting engine and can be modified as necessary.

3. To customize these messages, we recommended that you make a new template file for each customized template and reference the customized template in core.properties by adding one or more of the following properties and modifying to point to the new template.:

```
# Email Templates
email.account.registered.subject = emails/new_account_subject.html email.account.registered.body =
emails/new account body.html
email.forgot.password.subject = emails/forgot_password_subject.html email.forgot.password.body =
emails/forgot_password_body.html
email.new.request.subject = emails/notify new request subject.html email.new.request.body = emails/
notify new request body.html email.renewed.request.subject = emails/
notify_renewed_request_subject.html email.renewed.request.body = emails/
notify renewed request body.html
email.new.requester.subject = emails/notify_new_requester_subject.html email.new.requester.body =
emails/notify new requester body.html email.old.requester.subject = emails/
notify old requester subject.html email.old.requester.body = emails/notify old requester body.html
email.completed.request.subject = emails/notify_completed_request_subject.html
email.completed.request.body = emails/notify_completed_request_body.html
email.comment.to.request.subject = emails/new comment subject.html email.comment.to.request.body =
emails/new comment body.html
email.reviewer.request.subject = emails/reviewer request subject.html email.reviewer.request.body =
emails/reviewer request body.html email.reviewer.reject.subject = emails/
reviewer_reject_subject.html email.reviewer.reject.body = emails/reviewer_reject_body.html
email.reviewer.approve.subject = emails/reviewer_approve_subject.html email.reviewer.approve.body =
emails/reviewer approve body.html email.reviewer.renewed.request.subject = emails/
reviewer_renewed_request_subject.html email.reviewer.renewed.request.body = emails/
reviewer renewed request body.html
email.policy.changes.body = emails/policy_changed_body.html email.policy.changes.subject = emails/
policy changed subject.html email.policy.create.body = emails/policy created body.html
email.policy.create.subject = emails/policy_created_subject.html email.policy.delete.body = emails/
policy deleted body.html email.policy.delete.subject = emails/policy deleted subject.html
email.request.form.data.changes.body = emails/request_form_data_change_body.html
email.request.form.data.changes.subject = emails/request form data change subject.html
email.request.recall.body = emails/request recall body.html email.request.recall.subject = emails/
request recall subject.html
email.task.define.project.policies.body = emails/project define policies body.html
email.task.define.project.policies.subject = emails/project define policies_subject.html
email.task.define.project.details.body = emails/project_define_details_body.html
email.task.define.project.details.subject = emails/project define details subject.html
email.task.manage.audit.process.body = emails/project manage audit process body.html
email.task.manage.audit.process.subject = emails/project_manage_audit_process_subject.html
#Inventory Workflow Description
email.task.select.compliance.action.body = emails/inventory select compliance action body.html
email.task.select.compliance.action.subject = emails/
inventory select compliance action subject.html
email.task.create.remediation.Notes.body = emails/inventory create remediation Notes body.html
email.task.create.remediation.Notes.subject = emails/
inventory_create_remediation_Notes_subject.html
email.task.review.inventory.body = emails/inventory review inventory body.html
email.task.review.inventory.subject = emails/inventory_review_inventory_subject.html
email.task.review.cve.body = emails/inventory review cve body.html email.task.review.cve.subject =
emails/inventory review cve_subject.html
email.task.review.request.body = emails/task_review_request_body.html
email.task.review.request.subject = emails/task_review_request_subject.html
email.task.unassignment.body = emails/task_unassignment_body.html email.task.unassignment.subject =
emails/task_unassignment_subject.html
email.task.reminder.body = emails/task reminder body.html email.task.reminder.subject = emails/
task reminder subject.html
```

```
email.pull.inventory.completion.body = emails/pull inventory completion body.html
email.pull.inventory.completion.subject = emails/pull inventory completion subject.html
email.project.inventory.update.body = emails/project_inventory_update_body.html
email.project.inventory.update.subject = emails/project inventory update subject.html
email.inventory.question.body = emails/inventory question body.html
email.inventory.question.subject = emails/inventory_question_subject.html
email.inventory.question.answered.body = emails/inventory question answered body.html
email.inventory.guestion.answered.subject = emails/inventory guestion answered subject.html
email.inventory.checklistitem.body = emails/inventory checklistitem body.html
email.inventory.checklistitem.subject = emails/inventory_checklistitem_subject.html
email.inventory.checklistitem.completed.body = emails/inventory_checklistitem_completed_body.html
email.inventory.checklistitem.completed.subject = emails/
inventory checklistitem completed subject.html
email.project.summary.body = emails/project_summary_body.html email.project.summary.subject =
emails/project summary subject.html
email.project.copy.body = emails/project_copy_body.html email.project.copy.subject = emails/
project_copy_subject.html
email.scan.task.body = emails/scan_task_body.html email.scan.task.subject = emails/
scan task subject.html
email.license.expiration.body = emails/license expiration body.html
email.license.expiration.subject = emails/license expiration subject.html
email.scan.server.down.body = emails/scan_server_down_body.html email.scan.server.down.subject =
emails/scan_server_down_subject.html
email.update.service.failure.body = emails/update_service_failure_body.html
email.update.service.failure.subject = emails/update service failure subject.html
email.clupgrade.available.body = emails/clupgrade available body.html
email.clupgrade.available.subject = emails/clupgrade_available_subject.html
email.clupgrade.error.body = emails/clupgrade_error_body.html email.clupgrade.error.subject =
emails/clupgrade error_subject.html email.clupgrade.success.body = emails/
clupgrade success body.html email.clupgrade.success.subject = emails/clupgrade success subject.html
email.clupgrade.stopped.body = emails/clupgrade stopped body.html email.clupgrade.stopped.subject =
emails/clupgrade_stopped_subject.html
```

4. Contact FlexNet Code Insight Support for further instructions.

Configuring a Manual Proxy Server Connection (Optional)

By default, FlexNet Code Insight uses automatic proxy server settings. This is used to load the remote files for the side-by-side comparison of source matches in the Detector client. To provide credentials to authenticate to a proxy server, do the following on the Core\Scan Engine server.

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```
    To authenticate to a proxy server, do the following:
    Configure core.proxy.server.properties in <Code Insight_ROOT_DIR>\<version>\config\core\ as required to establish a connection with the proxy server:
```

#Indicates whether JetS3t should auto-detect the HTTP proxy settings appropriate for the local
machine, default: true
#httpclient.proxy-autodetect=false
#Sets the host name of a HTTP proxy server
#httpclient.proxy-host=<PROXY_HOST>
#Sets the port number of a HTTP proxy server
#httpclient.proxy-port=<PROXY_PORT>
#Sets the user name credential for proxy authentication
#httpclient.proxy-user=<PROXY_USER>

#Sets password credential for proxy authentication
#httpclient.proxy-password=<PROXY_PASSWORD>
#Sets the domain credential for proxy authentication
#httpclient.proxy-domain=<PROXY_DOMAIN>

Scan Engine Configuration Options

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Task

To change scan engine configuration options, do the following:

- 1. Update scanEngine.properties (<Code Insight_ROOT_DIR>\<version>\config\scanEngine) with optional scan server settings.
- 2. To control which directories can be selected for scanning, set the serverFileSystemRoot property:
 - Uncomment the serverFileSystemRoot property and specify a list of base directories accessible via the FlexNet Code Insight Scan server.

Note • This property may be required to run on some platforms such as Windows Server 2008.

 This property controls which locations can be selected by the Application Administrator as allowable for scanning for all projects in a given group, as well as which locations can be selected for scanning as part of the workspace settings.

Tuning Copyright Detection

This section contains three different ways you can tune copyright detection results. The files mentioned (**ignoredCopyrights.txt**, **customCopyrights.txt**, and **claimedCopyrights.txt**) are located in the following directory:

<Code Insight_ROOT_DIR>\<version>\tomcat\webapps\palamidaScanEngine\WEB-INF\classes\config

To customize any of the default settings, copy one or more of these files into the following directory:

<Code Insight_ROOT_DIR>\<version>\config\scanEngine

Modify the copied files to override the default settings.

Controlling False Positives

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Task

To control false positives or to ignore copyrights that would normally be detected, do the following:

1. Modify the **ignoredCopyrights.txt** file. This file is used to define the copyright patterns, including partial patterns that result in the -unparseable- bucket, that are ignored by the copyright scanner.

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2. A set of case-sensitive strings is provided by default and cause the copyright scanner to skip the current line in the file being scanned if these strings are encountered. The set is as follows:

the above copyright retain the copyright COPYRIGHT HOLDER COPYRIGHT OWNER copyright notice copyright condition

3. Make sure to follow these rules when defining copyright patterns to ignore:

Do not use commas (,) while defining copyright, date or owner patterns. Since commas are used as delimiters, they will end up tokenizing your patterns into multiple values. For example: Code Insight, Inc. should be defined as Code Insight Inc. (Note that there is no comma in the owner pattern.) Do not use any of the following reserved characters: \n \r | # ! % : ; , / * " space. If you use these reserved characters, they will be replaced by a whitespace (' ') character. If Java special characters are part of the defined copyright pattern, ensure that double slashes are used to escape both the properties file parsing as well as the Java interpretation. An example of this is Copyright [C] 2013 would be defined as Copyright \\[C\\] 2013.

4. The following regular expression patterns are part of the standard patterns used by the copyright scanner to force partial copyright matches into the -unparseable- bucket when the application cannot determine the copyright owner. To discard these copyright matches rather than have them end up in the -unparseable- bucket, you must uncomment the desired regular expression patterns:

```
(?i)\bcopyright(?:s|ed)?\s+(?:and\s+)?(?:notice|holder|license|trademark|law|patent|this|disclaimer
|label| under|GPL|message|history|abandoned|s|information)s?\b
(?i)\b(?:BSD-
style|the|is|by|additional|pieces|and|earlier|other|proper|following|original)\s+copyright(?:s|ed)?
\b
\[yyyy\] (?i)\bUniversity\s+copyright-
\bi\s+copyright\b
\bCDDL HEADER\b
=(?:head\\d+|item)\b (?i)\bdisclaims\bcopyright\b (?i)(?<!<copyright>.{0,100})</copyright>\s*$
```

Controlling False Negatives

To control false negatives or to force the copyright scanner to detect copyright patterns that would ordinarily be ignored, you must modify the customCopyrights.txt file. Read and follow the instructions when defining custom copyright patterns.

Every copyright pattern consists of the following parts:

• Copyright: Enter the copyright indicator pattern or case-sensitive string to be matched, as in the example:

\\(c\\), \\(C\\), Copyright

- Date: Enter the date pattern. (This can be left empty.)
- Owner: Enter the copyright owner pattern or case-sensitive string.
- Sequence: Enter a comma-separated list of elements in the order the elements are to be matched, as in the example:

copyright, date, owner or copyright, owner, date

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Task

To control false negatives, do the following:

1. Make sure to follow these rules when defining copyright patterns. Follow the syntax shown in the following pattern:

```
Code Insight:(c) Code Insight, Inc.
C2:Copyright Jack Smith 2008, 2009
C3:Copyright (C) Author S Name
pattern.names = Code Insight,C2,C3
Code Insight.copyright = \\(c\\) Code Insight.date = Code Insight.owner = Code Insight Inc.
Code Insight.sequence = copyright,date,owner
C2.copyright = [C|c]opyright C2.date = 2008 2009
C2.owner = Jack Smith
C2.sequence = copyright,owner,date
C3.copyright = Copyright \\(C\\) C3.date =
C3.owner = Copyright \\(C\\) C3.sequence = copyright,date,owner
```

- 2. Ensure that your pattern names are defined in the pattern.names list. If a pattern name is not defined in the list, it will not be processed.
- **3.** Each copyright pattern element is padded with one or more whitespaces (\s*) to allow for leading and trailing whitespaces, so there is no need to pad your patterns with whitespaces.
- 4. Do not use commas (,) while defining copyright, date or owner patterns. Commas are used as delimiters, so they will tokenize your patterns into multiple values. For example, Code Insight, Inc. should be defined as Code Insight Inc. There is no comma in the owner pattern.
- **5.** Do not use any of the following reserved characters: \n \r | # ! % : ; , / * " space. If you use these reserved characters, they will be replaced by a whitespace (' ') character.
- 6. If Java special characters are part of the defined copyright pattern, ensure that double slashes are used to escape both the properties file parsing as well as the Java interpretation. For example, Copyright [C] 2008 would be defined as Copyright \\[C\\] 2008.

Claiming Detected Copyrights as Yours

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Task

To claim detected copyrights, do the following:

- The claimed Copyrights.txt file may be used to force detected copyrights (based on default copyright patterns, or those supplemented via the customCopyrights.txt file) into a single bucket called -claimed-.
- 2. The purpose of modifying this file is to suppress third-party indicators due to detection of copyrights that belong to the user (own, purchased, acquired, contracted work, etc.). If a scanned file only contains a claimed copyright, it won't be tagged as containing third-party indicators.
- Make sure to follow these rules when defining copyright patterns for which to take ownership and move to the

 claimed-bucket:
 - Do not use commas (,) while defining copyright, date or owner patterns. Since commas are used as delimiters, they will end up tokenizing your patterns into multiple values. For example, Code Insight, Inc. should be defined as Code Insight Inc. (Note that there is no comma in the owner pattern.)

- Do not use any of the following reserved characters: \n \r | # ! % : ; , / * " space. If you use these reserved characters, they will be replaced by a whitespace (' ') character.
- If Java special characters are part of the defined copyright pattern, ensure that double slashes are used to
 escape both the properties file parsing as well as the Java interpretation. An example of this is Copyright
 [C] 2008 would be defined as Copyright \\[C\\] 2008.

Tuning Email/URL Detection

This section explains how you can tune email/URL detection results. The ignoredEmailURLtxt file is located in the following directory:

<Code Insight_ROOT_DIR>\<version>\tomcat\webapps\palamidaScanEngine\WEB-INF\classes\config

If you want to customize this file, you can either edit the file in this directory directly, or copy it to **<Code Insight_ROOT_DIR>\<version>\config\scanEngine**, and modify it there.

The scan engine parses these files before each workspace scan. The ones in **<Code** Insight_ROOT_DIR>\<version>\config\scanEngine take precedence.

Controlling False Positives

The file mentioned above may be used to force the scanner to skip a detected Email and URL. The purpose of this is to not treat a file as having third-party content if it only has an internal email or URL within a string literal or comment.

- Each line in the file is treated as a string to match.
- Regular expressions are *not* supported.
- An email or URL is ignored if it contains any of the strings defined in the file.
- The comparison is case-insensitive.

Note • Files that contain only ignored Emails and/or URLs will not be tagged as containing them. If you look at the file in the Detector client, though, the ignored Emails and URLs are highlighted because the highlighting in the Detector client uses its own search rather than being based on the scan results.

Tuning License Detection

This section explains how to tune license detection results. The **license_detection.xml** file is located in the following directory:

./palamida_6.13.x/tomcat/webapps/palamida/WEB-INF/classes/

To customize this file add additional license patterns, or disable existing ones, you can edit the file in the directory or copy it to **<Code Insight_ROOT_DIR>\<version>\config\core\licenses** and modify it there.

The scan engine parses this file before each scan. The one in **<Code** Insight_ROOT_DIR>\<version>\config\core\licenses take precedence.

Editing the License Detection Patterns File

The file mentioned above may be used to force the scanner to automatically detect a license and create a system group for all files containing the defined patterns for this license. The following are patterns used for license detection:

- License Text Templates: Allow matches against the entire license. The * are wildcards replaced with the copyright holder name or product name.
- License Keywords: Allow matching license references based on defined key word sets. All keywords defined in a keyword set must be matched for the license to be detected by the scanner.

License Text Template Example for Apache License, Version 2.0

<licenseTextTemplate>

Licensed to the * under one or more contributor license agreements. See the NOTICE file distributed with this work for additional information regarding copyright ownership. The ASF licenses this file to you under the Apache License, Version 2.0 (the "License"). You may not use this file except in compliance with the License. You may obtain a copy of the License at http://www.apache.org/licenses/LICENSE-2.0.

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

</licenseTextTemplate>

License Keywords Example for Apache License, Version 2.0

<keywords> <keywordSet> <keyword text="Licensed under the Apache License"/> </keywordSet> <keywordSet> <keyword text="Apache Software Foundation"/> </keywordSet> <keywordSet> <keyword text="Apache License, Version 2.0"/> </keywordSet> <keywordSet> <keyword text="Apache License Version 2.0"/> </keywordSet> <keywordSet> <keyword text="http://www.apache.org/licenses/LICENSE-2.0"/> </keywordSet> </keywords>

Chapter 6 Editing Configuration (Properties) Files

Tuning License Detection

Administration: Starting & Stopping Servers

The following topics provide information about starting, stopping, and validating the server:

- Starting and Stopping the Server Manually
- Validating a Successful Server Startup
- Changing the Number of Log Files Maintained

Starting and Stopping the Server Manually

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Task

To start and stop Tomcat, do the following:

1. Execute one of the following:

<Code Insight_ROOT_DIR>\<version>\tomcat\bin\startup.bat (or startup.sh on Linux installations)

or

catalina.bat run > ../logs/catalina.out 2>&1 (in Windows)

or

./catalina.sh run > ../logs/catalina.out 2>&1 (in Linux)

2. To stop Tomcat, execute:

<Code Insight_ROOT_DIR>\<version>\tomcat\bin\shutdown.bat (or shutdown.sh on Linux installations)

Validating a Successful Server Startup

You can validate a successful server startup in the following ways.

Using a Supported Browser

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Task

To use a supported browser to validate a successful server startup, do the following:

- 1. Log into Code Insight using a supported browser.
- 2. Go to the URL: http://<server>:8888/palamida.
- 3. Enter username: admin.
- 4. Enter password: Password123.

Using an .xls File

In addition, you can use a downloadable .xls file (Excel spreadsheet file) to create a demo configuration.

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Task

To use an .xls file to validate a successful server startup, do the following:

- 1. Go to Administration.
- 2. Select Import from the pull-down menu.
- 3. Select Download a sample workbook for bulk import.



Note • You can also manually create user accounts via the web UI.

Changing the Number of Log Files Maintained

FlexNet Code Insight generates several versions of the scan engine log files to assist in troubleshooting. All log files are written to the following:

<Code Insight_ROOT_DIR>\<version>\logs\

By default, 30 versions of the **scanEngineDetails.log** and **scanEngineSupport.log** files are saved before the log file contents are overwritten.

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Task

To change the number of log file versions, do the following:

1. Open the log4j scan engine properties file:

<Code Insight_ROOT_DIR>\<version>\tomcat\webapps\palamidaScanEngine\WEB-INF\classes\log4jscanEngine.properties

2. Change the following entry to the desired number of log file versions:

log4j.appender.FILE.maxBackupIndex=30.

Running an Electronic Update

This section provides the following information about running FlexNet Code Insight electronic updates.:

- Running an Electronic Update for the First Time
- Running an Electronic Update Manually
- Scheduling Automatic Electronic Updates

FlexNet Code Insight supports electronic updates of product data in several ways. An update can be applied either automatically on a recurring basis, or manually via the Web UI. In case of a manual update, the Code Insight Update HTTPS service can be used whereby an update archive is downloaded and processed by the system, or in case of a setup where Internet access is not available, a local update archive can be used.

Running an Electronic Update for the First Time

On initial startup of Code Insight, the system will automatically schedule an electronic update to run 2 minutes after the Tomcat server is started. *Note:* there is currently no way to disable the update from running the first time.

Running an Electronic Update Manually

To run an updated manually, log in as an Application Administrator, navigate to the Administration Updates menu option.

Using the Electronic Update Server (HTTPS)

On the "Last Update" tab, click on the "Check for Electronic Update" button to connect to the Code Insight Update HTTPS server and check whether an update is available. If one is available, follow the prompts to process the update.

Using a Local Electronic Update Archive

E) Task

To use a local electronic update archive, do the following:

- 1. Switch to the "Manual Update" tab and browse for the manifest (update_manifest.txt) and data file (update.zip).
- 2. Follow the prompts to process the update.

Scheduling Automatic Electronic Updates

To configure the system to automatically process electronic updates, the following settings need to be set in the <Code Insight_ROOT_DIR>\<version>\config\core\core.properties file:

auto.update.enabled = true auto.update.jobFrequency = 0 0 12 ? * SUN



Note • If an update has never successfully completed on this server, the property above does not apply (even when set to "true").

Use the cron expression format to define the frequency for processing the update data. By default, the update is set to run every Sunday at noon (12pm).

Refer to http://www.quartz-scheduler.org/documentation/quartz-2.x/tutorials/crontrigger.html for further information about the cron expression format.

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Installing FlexNet Code Insight Using the Installer

This section describes the steps to install FlexNet Code Insight with the Installer:

- Installing FlexNet Code Insight With the Installer
- Installing FlexNet Code Insight Using the Linux Command Line

For the manual installation process, see Installing FlexNet Code Insight Manually.

Installing FlexNet Code Insight With the Installer

E) Task

To install FlexNet Code Insight on Windows, do the following:

- 1. Ensure that you have met all the prerequisites in the Prerequisites section.
- 2. Place the following items in the same directory, such as: C:\CodeInsight\Installer\:

Туре	File
Installer Jar File	codeinsight_6.13.x.jar x is the latest release number of FlexNet Code Insight.
Кеу	codeInsight.key
Database Driver	 Depending upon your database type, select one of the following: mysql-connector-java-5.1.x-bin.jar ojdbc6.jar sqljdbc4.jar

3. To launch the installer, double-click the codeinsight_6.13.x.jar file or enter the following at the command prompt:

java -jar codeinsight_6.13.x.jar

The Introduction panel opens.

- 4. Click Next. The Choose Install Set panel appears.
- 5. Choose one of the following installation options:
 - Standalone—Both core and scanner on this computer.
 - **Core**—Configure this computer as the core server.
 - Scanner—Configure this computer as the scan server.

The Core Server controls your Web UI and Detector Client. The Scan Server is where actual scanning is performed.



Note • This guide addresses the Standalone install but it is also common to have a single instance of the Core Server and multiple Scan Engine Servers.

- 6. Click Next. The Choose Install Folder panel appears.
- 7. Specify the FlexNet Code Insight Installation directory:
 - To choose an existing directory, click Choose and navigate to the directory where you want to install FlexNet Code Insight. When the directory appears, click Select and then click Next.



Note • For Windows, the recommended location is C:\CodeInsight\<version>, which is referred to as <CODE_INSIGHT_ROOT_DIR> throughout this document.

To accept the default installation directory, click Next.

Note • To install FlexNet Code Insight on another drive, click the **Choose** button and enter the drive letter (such as **D**: \). Then press Enter, and browse to the directory on the other drive.

- 8. Click Next. The Total System Memory panel appears.
- 9. Select one of the options to specify the total system memory (RAM) on this machine.

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Note • If the amount of RAM on your machine is not listed, round up or down to the closest number.

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Tip • To find the RAM of your machine, select **Control Panel** from the Windows **Start** menu and select **System and Security**. Select **View amount of RAM and processor speed** from under the System heading. Note the amount of installed memory (RAM). As an alternative, open the command prompt and type **systeminfo** | find "Total Physical Memory" and divide the resulting number by 1024. **Note** • The heap space for the Java VM will be automatically set to 80% of the total RAM amount. This is the recommended amount for running FlexNet Code Insight.

- 10. Click Next. The Choose Database panel appears.
- **11.** Select your database vendor.

FlexNet Code Insight offers support for **Oracle**, **MySQL** and **SQL Server** database types. The input fields will be different depending on which database type you choose.

Note • You must have an empty schema and user account configured with the correct privileges before selecting the Database vendor. See the Databases section for details.

12. Click Next. A Configure Database panel specific to the selected database type appears.



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Note • If you see an error indicating your database driver is missing, ensure that the database driver is in the same directory as the FlexNet Code Insight installer jar file before proceeding with the installation.

13. On the Configure Database panel, enter information pertaining to your database vendor.



Note • The IP address defaults to the IP address of the server on which you are running the Installer. You may use Localhost instead of IP if the database is on this machine.



Note • The Database password will be encrypted after the first launch of the application.

- 14. Click Next. The core.properties panel appears.
- **15.** Enter an alias for your scan server in the **Scanner Server Alias** field. This is the alias you will see in the FlexNet Code Insight Web UI when you configure and launch your scans.
- **16.** The **Core/Scan Server IP Address** field automatically defaults to the IP address of the machine you using to run the installer.
- **17.** The **Scan Server HTTP Port** field automatically defaults to the recommended value of 8888, but may be changed as necessary.
- 18. Click Next. The Email Configuration panel appears
- **19.** If you would like to receive email notifications for events such as project creation and scan completion, select the appropriate **True** option and specify your email settings.



Note • Contact your network administrator to determine your SMTP settings.

20. Click Next. The scan.properties panel appears.

21. In the Path to Compliance Library (CL) Directory field, enter the location of your Compliance Library.

If your Compliance Library resides on another drive, you can manually type in the path or alternatively, press the **Choose** button, then enter the drive letter (such as D:\) and then browse to the directory.

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Note • Your Compliance Library directory is the directory that contains a bdb folder and pattern files that end in .dat (such as C:\CodeInsight\PDL\CL\2.32).

- 22. Click Next. The scanEngine.properties panel appears.
- **23.** In the **Path to Workspace Directory** field, specify the location of your workspace directory, the directory in which your workspace data will be stored. The default and recommended location is one level above the <CODE_INSIGHT_ROOT_DIR>.



Tip • To simplify future workspace migration, keep the workspace folder outside of your FlexNet Code Insight installation directory.

24. In the **Path to Scan Root Directory** field, enter the path to your scan root directory. The web application uses this property to limit the root of the server file system, making it easier to control which files and directories users have access to. Multiple roots are supported, but they must be separated by a pipe character (|):

C:\Folder1\Folder2|D:\Folder3



Note • If you do not want to limit access of FlexNet Code Insight users to files and directories, leave this field blank.

- 25. Click Next. The Pre-Installation Summary panel appears.
- 26. Review your FlexNet Code Insight installation name and location.
- 27. Click the Install button when you are ready to proceed with the installation. The Installing panel appears.
- 28. If an Overwrite Existing File? dialog box appears, click the Yes to All button.



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Note • If you are installing into a non-empty directory, there may be files that must be overwritten. Click **Yes to All** to overwrite existing files.

The installer must execute a series of scripts and write to your database schema. The **Initialize Database** dialog appears, prompting you to specify whether you are ready to initialize the database.



29. Ensure that the database is on and that the server you are on has access to the database, and then click OK.

Script execution messages like the following will appear:



30. If you encounter a database error during the installation process, you will be notified. Correct the error and run the installer again or manually run the database scripts after the installation completes.

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Note • You may check the <**CODE_INSIGHT_ROOT_DIR**>/Logs directory for more information about each script that was executed and for any other errors that occur during the installation process.

When the installation is complete, the Install Complete panel appears.

- 31. Click the Done button. The installation is complete an you are now ready to launch the application.
- 32. Proceed with the steps in Launching FlexNet Code Insight.

Installing FlexNet Code Insight Using the Linux Command Line

This section provides the procedure for installing FlexNet Code Insight via a Linux command line.

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Task

To install FlexNet Code Insight via a Linux command line, do the following:

- 1. Ensure that you've met all the prerequisites in Prerequisites.
- 2. Place the following items in the same directory, such as /home/codeinsight/installer:

Туре	File
Installer Jar File	codeinsight_6.13.x.jar
Кеу	codeInsight.key

Туре	File					
Database DriverDepending upon your database type, select one of the following:						
	• mysql-connector-java-5.1.x-bin.jar					
	• ojdbc6.jar					
	• sqljdbc4.jar					

3. Open the command prompt and enter the following to launch the installer:

java -jar codeinsight_6.13.x.jar

An Introduction message appears:



- 4. Press Enter when you are ready to continue.
 - To accept the default value at any time, press Enter.
 - To exit the installation at any time, press CTRL+C. The Choose Install Set screen appears:

Choose Install Set
Please choose the Install Set to be installed by this installer.
 ->1- Standalone (both core and scanner on this computer) 2 Core (configure this computer as the core server) 3- Scanner (configure this computer as a scan server)
ENTER THE NUMBER FOR THE INSTALL SET, OR PRESS <enter> TO ACCEFT THE DEFAULT</enter>

- 5. Enter the number of one of the following options and press Enter.
 - 1 Standalone—Both core and scanner on this computer.
 - **2 Core**—Configure this computer as the core server.
 - **3 Scanner**—Configure this computer as scan server.

The Core Server controls your Web UI and Detector Client. The Scan Server is where actual scanning is performed.



Note • This guide addresses the Standalone install but it is also common to have a single instance of the Core Server and multiple Scan Engine Servers.

The Choose Install Folder screen appears.



- 6. Enter the FlexNet Code Insight installation directory.
 - You can specify an existing directory or a new directory.
 - If you choose to create a new directory, it will be physically created after you have gone through all the prompts for setting up the product.

For Linux, the recommended location is /home/codeinsight/<version>/.This directory is referred to as <CODE_INSIGHT_ROOT_DIR> throughout this document.

7. Press Enter. The Total System Memory screen appears.

Total Syst	em Memory							
1-80	7 B							
2- 16	GB							
3- 32	GB							
4-64	GB							
ENTER THE	NUMBER OF	THE	DESIRED	CHOICE:	2			

8. Select the total system memory (RAM) on this machine by entering a number between 1 and 4.

To find the RAM of your machine, type the following command in the command prompt: free –g. Then note the number in the **Total** column and round up or down to the nearest number.

Note • The heap space for the Java VM will automatically be set to 80% of the total RAM amount. This is the recommended amount for running FlexNet Code Insight.

9. Click Enter. The Choose Database screen appears.



10. Select your database vendor.

FlexNet Code Insight offers support for **Oracle**, **MySQL** and **SQL Server**. The input fields will be different depending on which database type you choose.



Note • You must have an empty schema and user account configured with the correct privileges before selecting the Database vendor. See Configuring a Database for details.

If you get an error, make sure that your database driver is in the same directory as the FlexNet Code Insight **installer jar** file before proceeding.



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Note • The system will exit after this message. After you have placed the database driver in the directory, restart the installation.

11. Press Enter. A Configure Database panel specific to the selected database type appears.



Figure 9-1: MySQL Example



Figure 9-2: Oracle Example





12. On the **Configure Database** screens, enter your database IP address. By default, this field points to the IP address of the machine which you are currently using.

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Note • The IP address defaults to the IP address of the server on which you are running the Installer. You may use Localhost instead of IP if the database is on this machine.

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Note • The Database password is encrypted after the first launch of the application.

13. Press Enter. The core.properties screen appears.

core.properties	
Scan Server Alias (Default: Scanner1): Scanner1	
Core/Scan Server IP address (Default: 127.0.1.1): 10.100.6.185	
Scan Server HTTP port (Default: 8888): 8888	

14. Enter an alias for your scan server in the **Scan Server Alias** field. This is the alias you will see in the FlexNet Code Insight Web UI when you configure and launch your scans.



Note • The **Core/Scan Server IP address** automatically defaults to the IP Address of the machine you are using. The HTTP and RMI port default to the recommended ports used by the FlexNet Code Insight application. If you have configured different ports, be sure to change the port numbers. 15. Press Enter. The Email Configuration screen appears.



16. To receive email notifications for events such as project creation and scan completion, enter 1 for Yes.

- **Note** Contact your network administrator to determine your SMTP settings.
- 17. Press Enter. The scan.properties screen appears.

scan.properties -----Path to Compliance Library (CL) Directory (Default:): /home/palamida/PDL/CL/2.30/

18. In the Path to Compliance Library (CL) Directory field, enter the location of your Compliance Library.

Ξ

Note • Your Compliance Library directory is the directory that contains a bdb folder and pattern files that end in .dat (such as C:\CodeInsight\PDL\CL\2.32).

19. Press Enter. The scanEngine.properties screen appears.

scanl		ine.proper1				
Path	to	Workspace	Directory	(Default:	/home/palamida/6.6//workspa	ces):
Path	to	Scan Root	Directory	(Default:		

20. In the **Path to Workspace Directory** field, specify the location of your workspace directory, the directory in which your workspace data will be stored. The default and recommended location is one level above the <CODE_INSIGHT_ROOT_DIR>.

Tip • Keeping the workspace folder outside of your FlexNet Code Insight installation directory is recommended in order to simplify future workspace migration.

21. In the **Path to Scan Root Directory** field, enter the path to your scan root directory. The web application uses this property to limit the root of the server file system, making it easier to control which files and directories users have access to.

Multiple roots are supported, but they must be separated by a pipe character (|):

C:\Folder1\Folder2|D:\Folder3

Note • If you do not want to limit access of FlexNet Code Insight users to files and directories, leave this field blank.

22. Press Enter. The Pre-Installation Summary screen appears.



23. Review your FlexNet Code Insight installation name and location, and press Enter when you are ready to proceed with the Installation. The **Installing** screen appears.



Note • If you are installing into a non-empty directory, there may be files that need to be overwritten and a message box will be displayed. Select option **1** - **Yes to All** to overwrite the existing files.

- **24.** The Installer executes a series of scripts and writes to your database schema. Wait while it completes the installation.
- 25. If a database error occurs during the installation process, a notification message is displayed:



26. Correct the error and run the installer again or manually run the database scripts after the installation completes.

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Note • You may check the <**CODE_INSIGHT_ROOT_DIR**>/Logs directory for more information about each script that was executed.

When the installation is complete, the Install Complete screen appears.



27. Press Enter to continue. You have completed the installation and are now ready to launch the application.

Proceed with the steps in Launching FlexNet Code Insight.

Launching FlexNet Code Insight

This section explains how to launch FlexNet Code Insight.

- Starting and Stopping the Server
- Logging into FlexNet Code Insight
- Running the Update Service

Starting and Stopping the Server

To start and stop the server, perform the following steps.

Task	То	To start and stop the FlexNet Code Insight server, do the following:							
	1.	To start Tomcat, enter the following:							
		<code_insight_root_dir>\6.13.x\tomcat\bin\startup.bat (or startup.sh if running on Linux)</code_insight_root_dir>							
		To stop Tomcat, enter the following:							
		<code_insight_root_dir>\6.13.x\tomcat\bin\shutdown.bat (or shutdown.sh if running on Linux)</code_insight_root_dir>							
	2.	Open a FlexNet Code Insight-supported browser.							
	3.	Navigate to the following URL:							
		http:// <core_server>:8888/palamida</core_server>							
		Replace <core_server> with the name or IP address of the FlexNet Code Insight Core Server.</core_server>							

Logging into FlexNet Code Insight

To log into FlexNet Code Insight, log into the server.

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Task

To log into FlexNet Code Insight, do the following:

- 1. Log in as an administrator, using the following credentials:
 - User: admin
 - Password: Password123

Running the Update Service

On initial startup of FlexNet Code Insight, the system automatically schedules an electronic update to run 2 minutes after the Tomcat server is started. If it fails, verify your electronic update settings.

11

Installing the Jenkins Plugin

The FlexNet Code Insight plugin for Jenkins lets you start an FlexNet Code Insight scan directly from Jenkins after a successful Jenkins build. This section contains the following topics:

- Jenkins Downloads
- Setting up the Jenkins Plugin
- Generating a JWT Token

Note • The Jenkins plugin requires that a project and workspace exist in FlexNet Code Insight before you attempt to scan using the plugin.

Jenkins Downloads

Before you proceed, ensure that you have set up a team, project and workspace in the FlexNet Code Insight web UI.

Activity	URL
Download Jenkins	http://jenkins-ci.org/
Installing Jenkins procedure	https://wiki.jenkins-ci.org/display/JENKINS/Installing+Jenkins
Starting and Accessing Jenkins procedure	https://wiki.jenkins-ci.org/display/JENKINS/Starting+and+Accessing+Jenkins

Setting up the Jenkins Plugin

To set up the Jenkins plugin to work with your build, perform the following steps.

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Task

To set up the Jenkins plugin, do the following:

- 1. Access your Jenkins server instance.
- 2. Navigate to Manage Jenkins > Manage Plugins > Advanced tab > Upload Plugin.
- 3. Browse to the palamida.hpi file and click Upload.
- 4. Restart the Jenkins server after installing FlexNet Code Insight Scan plugin.
- 5. Create a new Jenkins project:
 - a. Click New Item.
 - b. Enter a name.
 - c. Select Freestyle Project.
 - d. Click OK.
- 6. Configure a project:
 - a. Select Add build step from the Build dropdown menu.

3u	ild
	Add build step 👻
	Execute Windows batch command
	Execute shell
	Invoke Ant
	Invoke top-level Maven targets

b. Select FlexNet Code Insight Scan. The FlexNet Code Insight Scan area is displayed:

Server URL	http://localhost:8888/
	URL of the server, e.g. https://palamida.example.com:8888
Project ID	6
Token	eyJhbGciOiJlUzI1NiJ9.eyJzdWliOiJhbGV4liwiaWF0ljoxNDUyNTUyNTg4fQ.m60UTXkt3yHBz-EoudqTB5kl0Y4wsmXCHBi2ZXePvoo
Pass Jenkins git configuration	

- c. Enter the following information into the FlexNet Code Insight Scan plugin config section:
 - Server URL—Enter the URL of the scan server. Do not include /palamida in the URL.
 - Project ID—Enter a project ID. This needs to be created ahead of time, including workspaces.
 - Token—Enter the JWT token. It can be generated in the FlexNet Code Insight Web UI and pasted into Jenkins. For details, see Generating a JSON Web Token (JWT).
 - **Pass Jenkins git configuration**—Optionally, select this option and provide Git configuration values. This can be used to perform a Git clone/sync via autorun script if desired.
- d. Click Save.
- 7. To create a build task and schedule a scan of all workspaces in the referenced project, click **Build Now** in the left navigation bar.

Generating a JWT Token

For the procedure to generate a JWT token, see Generating a JSON Web Token (JWT).

Chapter 11 Installing the Jenkins Plugin

Generating a JWT Token

Using ScriptRunner

This chapter describes ScriptRunner:

- ScriptRunner Options
- Generating a JSON Web Token (JWT)
- Using the JWT Token with scriptRunner

ScriptRunner use is restricted to users with the Scripting Administrator role who have a valid JWT token. Users are prompted for a valid token when running ScriptRunner for the first time (token is not required for subsequent runs). The token is then stored on the client machine for future use. See Generating a JSON Web Token (JWT) for instructions on generating a token.

ScriptRunner Options

The following options are for scriptrunner.

- The –p option is no longer supported for specifying user password. You will be prompted for a password when you run scriptRunner for the first time. The –u flag is still applicable.
- The -c option should be used to pass the Core Server URL, replacing <core_server_host> with the name or IP address of the core server and replacing <port> with the port of the core server in the following example:

-c http://<core_server_host>.com:<port>/Code Insight/

• Add the port number to Workspace URI when using the –w option, replacing <scan_server_host> with the name or IP address of the scan server, <port> with the port number of the scan server and <workspace_name> with the name of the workspace in the following example:

```
-w http://<scan_server_host>.com:<port>/<workspace_name>
```

Generating a JSON Web Token (JWT)

Access to the Code Insight application from scriptRunner or any external application (REST API calls, Jenkins, etc.) requires a valid JWT Token for authentication and information exchange. JWT tokens are generated in the user interface and may be passed to scriptRunner or in the header of a request during a REST API call.

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Task

To generate a JWT token, do the following:

- 1. Log into FlexNet Code Insight as a Scripting Administrator.
- 2. Click My Settings in the upper right-hand corner. The My Setting page appears:

* First Name	System	Your Roles Participant, Policy Administrator, Requester, Reviewer, Scripting Administrator, System Administrator				
Middle Name					trator,	
≮ Last Name	Administrator					
* Email	devnull@palamida.com	Detector	'Heap Size	1024 MB 💙		
Job Title		AUTH Tok	ens			😋 Add Toker
Business Unit		Name	Token		Create Date	Actions
Location						
Telephone						
Facsimile						
Login Question	company					
Login Answer	palamida					
Password						

3. Click Add Token. The Add Token dialog appears:

Name	Client Machine #1			
 Token Validity 	Never Expires	Expires On	01/27/2016	•

4. Enter a token name and expiration date; and then click Save.

Note • If no date is specified, the default expiration of 1 month from today will apply.

5. Click Select Token Text or press CTRL-C to copy the token text to the clipboard.

oken "Palamida Client Machine #1" has been created	×
Select Token Text and press 'CTRL-C' to copy token to clipboard.	
Token Text: eyJhbGciOiJIUzI1NiJ9.eyJzdWIiOiJhZG1pbiIsImlhdCI6MTO1MTI3NTYvNCwiZXhv	٧I
joxNDUzODgxNjAwfQ.yA7tIRuyqeoJt4U1cegRwL1sBrkXJdQ3qV-EQLgf5uQ	
Close	
Close	

6. Click Close. The token is now available for use with scriptRunner or REST APIs.

Using the JWT Token with scriptRunner

After you create the JWT token in FlexNet Code Insight, you can use it with scriptRunner.

TaskTo use the token with scriptRunner, do the following:

1. Navigate to the scriptRunner/bin directory.

cd /<Code Insight_ROOT_DIR>/scriptRunner/bin/

2. Launch scriptRunner, using the –c flag to specify the core server URL and the –u flag to specify the authorized user.

./scriptRunner.sh -u admin -c http://localhost:8888/Code Insight/

3. When scriptRunner prompts you for the token, paste the token onto the command line and press **Enter**. The Groovy console will be launched if the token is valid. You may exit the console by typing **Exit**.

The token is stored in the scriptRunner.properties file for the user account on the client server. You will not be required to enter it again if you run scriptRunner from this server.

Chapter 12 Using ScriptRunner Using the JWT Token with scriptRunner

13

Exporting & Importing Workspaces

The Groovy scripts described in this section can be used to export and import audit data from one workspace to another. The scripts process all workspace data, including groups/inventory, associated files and file status, associated custom data, inventory checklist items, questions/answers, comments and inventory status. For more information about custom data, see What is Custom Data?

This section contains the following topics:

- Usage Overview
- Installing the Scripts
- Using the Scripts with ScriptRunner

Usage Overview

These scripts have been designed for use in the following scenarios:

- In-place backup and restoration of workspaces.
- Backup and restoration of workspaces across projects and across servers.
- Migrating workspaces from one FlexNet Code Insight instance to another, including transitioning to newer versions of FlexNet Code Insight.
- Copying inventory across projects, along with the inventory checklist items, questions/answers, comments and status.

Note • The scripts are designed to work in conjunction with scanning. After export, a scan of the target workspace is required before import.

What is Custom Data?

Custom data refers to user-created licenses, components, and component versions. When custom data is exported, it is written to a custom data XML file (**customData.xml**) that is separate from an exported workspace XML file (**workspaceData.xml**). The following rules apply to the export and import of custom data:

- Custom data is exported any time you export a workspace which references custom data.
- If multiple workspaces are exported all at once, only one custom data XML file containing all the pieces of custom data referenced by all of the exported workspaces is generated.
- To export all of the custom data form the core server, use the -export_all_custom_dataflag.
- Custom data can be imported along with a workspace which uses that custom data, or the custom data can be imported by itself.
- If you attempt to import a workspace into a database that does not contain custom data used by that workspace, the workspace import will fail.

What Workspace Data is Exported and Imported?

The following workspace data is exported and imported by the scripts:

- Group data: name, component, version, license and group field values; custom groups.
- File data: file paths and file status.
- Custom data: custom components, versions, licenses.
- File indicators and tags: contains indicators, contains exact file matches, contains license matches, copyright holder, etc.
- File reviewed status: reviewed status is represented as a tag.

Note • To retain file indicators and tags (including the reviewed tag), ensure that you use the -export_tags option during export. You can verify that reviewed status is retained by searching the generated XML file for the term "reviewed",

What Inventory is Exported and Imported?

In addition to the workspace, the following content is exported and imported by the scripts:

- Comments: public and private comments and comment replies.
- Checklist items: checked and unchecked items.
- Questions and Answers: questions and replies.
- Inventory Status: the status (approved, rejected, pending review, ready for review.

About Backward Compatibility

The new Groovy scripts cannot be used for the export or import of workspaces from previous versions of FlexNet Code Insight. To export from FlexNet Code Insight 6.10.4, for example, you must use the older version of the export script and then import to the latest version (6.13.1) using the new import script.

Note • To obtain copies of older product-version scripts, contact SCA support.

The following options are available for exporting to and importing from workspaces created in previous releases of FlexNet Code Insight:

• Export from 6.10.3/6.10.4/6.11 using the scripts designed for those versions, and then import into FlexNet Code Insight 6.13.1 using the 6.13.1 import script.

Note • This process will not export questions and answers, comments, or inventory status.

• Update the 6.10.3/6.10.3/6.11 workspace to 6.13.1 by following the standard migration process. Use the FlexNet Code Insight 6.13.1 export script to export from the workspace, including the questions and answers, comments, and inventory status.

Installing the Scripts

The export and import scripts can be found in the **scriptRunner/scripts** directory of your FlexNet Code Insight installation. For example:

scriptRunner/scripts/exportWorkspaceData.groovy
scriptRunner/scripts/importWorkspaceData.groovy

Once you locate the scripts, skip to the Using the Scripts with ScriptRunner for further instructions.

Installing Manually

If you received a zipfile (**workspace_import_export.zip**) containing the export and import scripts, you can unzip the file and place the scripts and classes in their proper locations.

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- Task To install the scripts manually, do the following:
 - 1. Unzip the workspace_import_export.zip file.
 - Place the driving scripts (exportWorkspaceData.groovy and importWorkspaceData.groovy) in the scriptRunner/scripts directory. These Groovy scripts (not classes) cannot function alone; they must be executed within the ScriptRunner framework.
 - **3.** Place the **groovy_classes** folder in the **scriptRunner/lib** folder. The files in the **groovy_classes** folder are Groovy classes (not scripts) that are called from the driving scripts.

Note • These files should never be called directly from ScriptRunner as they cannot function alone.

Using the Scripts with ScriptRunner

These scripts will only function properly when executed through the ScriptRunner framework. For instance, in a stand-alone environment (both the core server and scan server running on the same machine) with IP address 111.122.133.144, invoke ScriptRunner in the following manner. Use the -u flag to specify the authorized user and the -c flag to specify the core server URL:

./scriptRunner.sh -u username_foo -c http://111.122.133.144:8888/palamida/

If this is your first time running scriptRunner, you will be prompted to enter a JWT token. Paste the token in for authorization. For information about generating a JWT token, see **Generating a JWT Token**.

Note • The flags used with ScriptRunner are not passed through to the export and import scripts. The -c flag is only used by ScriptRunner. You must still pass into the export script the server name from which to export a workspace.

To pass the server name from which to export a workspace to the export script use the following:

exportWorkspaceData.groovy -server http://111.122.133.144:8888/palamida/

Otherwise the export script will use its hard-coded server name default value (i.e., localhost). In the above case, the entire command would be:

./scriptRunner.sh -u username_foo -c http://111.122.133.144:8888/palamida/ ../scripts/exportWorkspaceData.groovy -server http://111.122.133.144:8888/palamida/



Note • Ensure that the URL passed to the -c flag always contains a trailing "/".

Using the Export Script

The exportWorkspaceData.groovy script uses the ScriptRunner framework to export workspaces from one or more servers.

Export Options

For the current list of export script options, refer to the output from the script's -h flag.

File and Path Options

-h or -help

Prints a help page of all the available options.

-output <file>

The name of the xml file to export the workspaces to, without extension. The default is workspaceData. If a single workspace is exported, the result will be an XML file (with this name) containing that one workspace.

If multiple workspaces are being exported, the result will be a ZIP file (with this name) containing all the exported workspace XML files, the custom data XML file (if necessary), and a log file indicating the significant events of the export.

-output_path <directory>

The directory into which the export files will be written. This flag defaults to the directory from which the script is executed. For instance, if the script is executed from scriptRunner/bin, you will find a workspaceData.xml or workspaceData.zip file inside the scriptRunner/bin directory.

-custom_data_file <file>

The name of the file that will contain the exported custom data (if any). No suffix is required. The default is **customData**. For instance, by default you will find a **customData.xml** file inside the **scriptRunner/bin** directory.

Server Options

-server <urlOfCoreServer>

Export from the core server with the name 111.122.133.144 (default: localhost). For instance,

exportWorkspaceData.groovy -server http://111.122.133.144:8888/palamida/

-scan_server <urlOfScanServer>

Export from the scan engine with the name 111.122.133.144 (default: value of -server flag). For instance,

exportWorkspaceData.groovy -scan_server http://111.122.133.144:8888/palamida/

-server_all <urlOfScanServer>

Export all workspaces from the scan engine with the name 111.122.133.144. This option overrides -scan_server, -team, -project, and -workspace options. For instance,

exportWorkspaceData.groovy -scan_all http://111.122.133.144:8888/palamida/

-server_all_from_config <urlOfScanServer>

Read scan engine machines from config on the indicated server. Export all workspaces from all scan engine machines. This option overrides -server_all, -server, -scan_server, -team, -project, and -workspace options. For instance,

exportWorkspaceData.groovy -server_all_from_config http://111.122.133.144:8888/palamida/

What to Export

-team <teamName>

Export all workspaces in all projects belonging to this team. This option overrides -workspace. If -team and -project are used together, this will export all workspaces for that project and should be used when different projects have the same name, but were created by different teams.

-project <projectName>

Export all workspaces in this project. This option overrides -workspace. If -team and -project are used together, this will export all workspaces for that project and should be used when different projects have the same name, but were created by different teams. This option will also cause the -pa (process active only) flag to be ignored.

-workspace <workspaceName>

Export only the workspace with this name. This option causes the -pa (process active only) flag to be ignored.

-exclude_file_extensions < extensions >

When exporting files, skip all files that have the suffixes listed here. You must specify a comma-separated list without spaces.

Boolean Options

-pa

If present, process only active ('In Progress') projects.

-pe

If present, do not process empty groups.

-pm

If present, export metadata for the groups being exported.

-ps

If present, do not process system groups.

-export_all_custom_data

If present, export all custom data, not just custom data referenced by exported groups. If this is not set, only export custom data that is referenced by the workspaces being exported.

-export_tags

If present, the tags for the group files in the exported workspaces are exported. This includes the "reviewed" file status tag.

Other Options

-retries <number>

The number of times to retry exporting of a failed workspace (integer). Most often, an export failure is due to the workspace being scanned.

-wait <seconds>

The number of seconds to wait before retrying the exporting of a failed workspace (integer).

Combining Export Flags

The following scenarios occur when export flags are combined in the export script:

- Option -server_all_from_config will cause the script to ignore the following flags: -server_all, -server, scan_server, -team, -project, and -workspace.
- Option -server_all causes the script to ignore the following flags: -scan_server, -team, -project, and -workspace.
- Option -team causes the script to ignore the -workspace flag.
- Option -project causes the script to ignore the -workspace flag.
- Options -team and -project together will export all workspaces for that project and should be used when different projects have the same name, but were created by different teams.
- Options -workspace or -project causes the -pa (process active only) flag to be ignored.
- If -export_all_custom_data is not set, export only custom data referenced by the workspaces being exported.

Export Usage

In a stand-alone environment, the core server is the scan server, so there is no need to use the -scan_server flag.

In a clustered environment, export can be run from any machine that can execute ScriptRunner (core server, Scan Server, Detector, Client) by using one or more of the Server Options flags indicate the servers from which workspaces should be exported. For more information, see **Server Options**.

Workspaces can be designated for export using a variety of flags (for example, -workspace to export one workspace, -server_all to export all workspaces on that server). However, if the export script does not understand which workspaces to export, it will prompt you to choose one workspace from the indicated scan server.

Export Output

The export script displays onscreen status messages as it runs, starting with a list of the flags (and their values) it will use for this execution.

All output (XML files, ZIP file, log file, etc) will be written to the location specified by the -output_path flag (if present) or to the directory from which the script was executed (if the -output_path flag was not specified).

If one workspace is exported, the output is: one XML file containing the workspace's information, one log file (export.log), and (if there is custom data for that workspace) one XML file containing that custom data.

If multiple workspaces are exported, the output is one ZIP file containing the following:

- One XML file for each exported workspace,
- One log file (export.log), and (if there is custom data for any exported workspace)
- One XML file containing all custom data for the exported workspaces.

In general, only data not generated by a scan are exported. Because an exported XML file must be imported into a workspace of scanned files, exporting scan-generated information would be redundant. For example, only files that are in groups are exported to the XML file. The other files are skipped because importing them would not add any information that was not acquired from the scan itself.

Export Usage Examples

The export script has many options. The following are some of the common usages:

1. Export the workspace named foo from stand-alone server some_server_name to the file named /home/FNCI/exportedWorkspace.xml:

exportWorkspaceData.groovy -server some_server_name -workspace foo -output exportedWorkspace output_path /home/FNCI/

2. Export the workspace named foo from core server some_core_server_name and scan server some_scan_server_name to the file named /home/FNCI/exportedWorkspace.xml:

exportWorkspaceData.groovy -server some_server_name -scan_server some_scan_server_name -workspace foo -output exportedWorkspace -output_path /home/FNCI/

3. Export all workspaces from the scan server some_scan_server_name to a set of XML files which will be compressed into a file named /home/FNCI/workspaceDataFromLocalhost.zip. The core server, localhost, still has to be defined:

exportWorkspaceData.groovy -server localhost -server_all some_scan_server_name -output workspaceDataFromLocalhost -output_path /home/FNCI/

4. Export all of the custom data on the stand-alone server localhost to an XML file named foo.xml, but do not export any workspaces:

exportWorkspaceData.groovy -custom_data_file foo -export_all_custom_data

Using the Import Script

The Import script can be run from any machine that can execute ScriptRunner (core server, scan server, Detector, client). Use the -server flag to set the value of the core server. In a clustered environment, you must also set -scan_server to the scan server containing the workspace you just scanned.

Custom data (user-created licenses, components, and component versions) can be imported along with a workspace that uses that custom data, or the custom data can be imported by itself. For more information, see What is Custom Data?

Task To use the import script, do the following:

1. Create a new workspace on the core server onto which you want to perform the import. This will be the 'target workspace' that will accept the audit data. This workspace must contain all the files that were present in the exported workspace.

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Note • In a clustered environment, both the core server and the target scan server must be designated (-server and -scan_server flags).

- 2. Execute a scan of the workspace files. Data that is not created by this scan will be copied over during import.
- **3.** Open the XML file containing the workspace data to be imported. If the file paths in the XML file do not match the file paths in the workspace you just scanned, the file information from the XML file will not be imported. You can do either one of the following:
 - Note that values needed for the -adv_file_comparison and -adv_file_comparison_depth import flags.
 - Edit the export XML file to change the file paths to exactly match the file locations in the target workspace.
- 4. Run the import script. The following are descriptions of available flags and examples:
 - Required options for importing a workspace:

-input (-f)

Indicates the XML file that contains the workspace information to be imported.

-workspace (-w)

Import data into the workspace with this name.

- If the XML file containing the workspace information references custom data (that is, user-created licenses, components, or component versions), also indicate which XML file contains that custom data using the -custom_data_file (-x) flag.
- 5. Open Detector for the target workspace and verify that the audit information was imported correctly.

Import Options

For a current list of these options, see the output from the script's -h flag.

Import Options that Accept Parameters

-input <file> (-f)

The file containing the workspaces to be imported.

-custom_data_file <file> (-x)

Import custom data from this file.

-server <hostnameOrIP> (-c)

Import the workspace onto this core server (default: localhost).

-scan_server <hostnameOrIP> (-s)

Import the workspace onto this scan server (default: value of -server flag).

-workspace <workspaceName> (-w)

Import data into the workspace with this name.

-reformat_xml_file <file> (-z)

Reformat this XML file and do nothing else. If this option is set, that XML file will be reformatted and the script will exit without importing anything.

-adv_file_comparison <option> (-a)

Determines whether to match files using only a portion of each file's path. The default is *never*. This statement accepts the following values: *never*, *if_no_absolute_match*, *always*. If this flag is not set, a file element from the imported XML file must match the full file path and name in the workspace.

-adv_file_comparison_depth (-d)

This option is ignored if -adv_file_comparison is not set. This option specifies how much of a file's path/name/MD5 to compare (default: md5_file_name).

Import Options that Require an MD5 Match

md5_only:

To find matches between file elements from the imported XML file and files in the workspace, only compare the MD5 hashes.

md5_file_name

For each file element and each file in the workspace, compare the MD5 hash and the file's name.

md5_file_name_dir_depth_1

Compare the MD5 hash, the file's name, and each file's parent directory. For example: /a/b/c/foo.gif will match /d/e/ c/foo.gif, but not /d/e/f/foo.gif (assuming the MD5 hashes also match).

md5_file_name_dir_depth_2

Compare the MD5 hash, the file's name, each file's parent directory, and each file's parent directory's parent directory.

md5_file_name_dirdepth#

And so on, to an arbitrary depth.

Import Options that Do Not Require an MD5 match

no_md5_file_name

For each file element and each file in the workspace, compare only the file's name.

no_md5_file_name_dirdepth#

Compare the file's name and each file's parent directory to the indicated depth, as shown above.

-include_tags (-i)

Import only these tags. Ignore all other tags. This option is not compatible with -exclude_tags (-e). The option accepts a comma-delimited list of tags and converts the % character into a space, allowing its use with tags that have spaces in their names.

-exclude_tags (-e)

Do not import these tags. Import all other tags. This option is not compatible with -include_tags (-i). The option accepts a comma-delimited list of tags and converts the % character into a space, allowing its use with tags that have spaces in their names.

-path_search_replace_csv (-p)

Location of the CSV file with the path fragments to find and replace. For more information, see CSV File.

Import Options that Accept Boolean Options

All of these options default to *false*, including any of these flag sets that flag to *true*.

-dryrun (-y)

If present, simulate an import without actually saving anything. Generates a log file containing what would be the significant events encountered during an actual import.

-check_md5_hash (-m)

If present, in addition to checking the full file path, also check each file's MD5 hash. If there is a match, *do not* import the file. This option is ignored if advanced file matching (see above flags) is used.

-update_existing_group_data (-u)

If present, update existing group data with the content from the XML workspace file.

-annotate_adv_search_results (-r)

If present, create a new metadata tag for each file matched with advanced file matching (see above flags).

CSV File

The -path_search_replace_csv (-p) flag takes one value: the location of a CSV file that maps the file paths from the workspace XML, indicated by -input (-f), to the paths on the scan server, indicated by -scan_server (-s).

The CSV file has the following format:

/Path/To/Find/In/XML/File/One,Path/To/Replace/It/With/On/Scan/Server/1
/Path/To/Find/In/XML/File/Two,Path/To/Replace/It/With/On/Scan/Server/2
/Path/To/Find/In/XML/File/Three,Path/To/Replace/It/With/On/Scan/Server/3

Paths will be found and replaced exactly as shown in the CSV file. No regular expressions are allowed.

The path to be found will be matched only to the beginning of each path in the XML file being imported, which limits the possibility of accidentally changing parts of other paths. The portion of a path that matches is the only portion that is replaced.

Every path to be found will be tried on every path in the XML file being imported.

Matches are attempted in the order listed in the CSV file. If a match is found, the matching portion of the path is replaced before the next match is attempted. For each path, this allows for repeated changes as the search/replace map is iterated over.

Paths may contain any combination of forward slashes and backslashes. Backslashes must be escaped with other backslashes.

Any path that contains at least one backslash must be wrapped in double-quotes. For example, if you export from a Windows machine and import onto a Linux machine, your CSV file might look like the following:

"C:\\Path\\To\\Find\\In\\XML\\File\\One",Path/To/Replace/It/With/On/Scan/Server/1
"C:\\Path\\To\\Find\\In\\XML\\File\\Two",Path/To/Replace/It/With/On/Scan/Server/2
"C:\\Path\\To\\Find\\In\\XML\\File\\Three",Path/To/Replace/It/With/On/Scan/Server/3

In addition, two operators are available: CONVERT_TO_FORWARD_SLASH and CONVERT_TO_BACKSLASH. Place either in the first field of a line. The second value in that line is ignored. The conversion is performed on each forward slash and backslash in the entire file path.

Import Results

The import script display onscreen status messages as is runs, starting with a list of the flags and their values to be used for this execution.

Log file (import.log)

Located in the directory from which the workspace or custom data files were imported, it contains the following:

- All significant actions taken during the import.
- All issues encountered during the import.
- All files that were not associated with any group.

Metadata Tags

When a problem is encountered during the import of a group, a metadata tag (display name: Import Notes, field name: import-notes) is created for that group detailing the issue. If such a metadata tag already exists for that group, the new issue is added to the existing tag.

If the -annotate_adv_search_results flag has been included on the command line and a file is matched using advanced file matching, a metadata tag (display name: File Path Matched by Advanced Logic, field name: file-path-matched-by-advanced-logic, tag value: Yes) is created for that file.

Import Usage Examples

The following are some examples of the use of the Import script:

1. Import the workspace data contained in workspaceData.xml into the workspace foo. This will not overwrite existing audit group data:

importWorkspaceData.groovy --input /home/FNCI/workspaceData.xml --workspace foo

2. Import the workspace data contained in workspaceData.xml into the workspace foo in a clustered environment with core server some_core_server and scan server some_scan_server, where the scan of workspace foo was run on some_scan_server. This will not overwrite any existing audit group data:

importWorkspaceData.groovy --server some_core_server --scan_server some_scan_server --input /home/ FNCI/workspaceData.xml --workspace foo

3. Import the workspace data contained in workspaceData.xml into the workspace foo and overwrite any existing audit group data with audit group data from that XML file:

importWorkspaceData.groovy --input /home/FNCI/workspaceData.xml --workspace foo -update_existing_group_data

4. Import the workspace data contained in workspaceData.xml into the workspace foo along with the custom data from custom.xml. If workspaceData.xml references any custom data from custom.xml, you must import custom.xml before (or at the same time) as workspaceData.xml:

importWorkspaceData.groovy --custom_data_file /home/FNCI/custom.xml --input /home/FNCI/
workspaceData.xml --workspace foo

5. Import only the custom data from file custom.xml:

importWorkspaceData.groovy --custom_data_file /home/FNCI/custom.xml

6. Perform a practice import (dryrun) of custom data from the file custom.xml. The import script will walk through all the import steps, but will not write any data to the database:

importWorkspaceData.groovy --custom_data_file /home/FNCI/custom.xml --dryrun

Chapter 13 Exporting & Importing Workspaces

Using the Scripts with ScriptRunner

Integrating with LDAP for Authentication (Optional)

This section provides details about modifying the LDAP configuration file and data synchronization:

- Configuring LDAP Integration
- Data Synchronization
- LDAP Configuration

Configuring LDAP Integration

The Lightweight Directory Access Protocol (LDAP) configuration file (**core.Idap.properties**) is located in the **<Code Insight_ROOT_DIR>\<version>\config\core** directory. FlexNet Code Insight imports LDAP user metadata into its database. User passwords are never stored into our system. LDAP user authentication is handled on a real-time basis against the LDAP server for every login. If the user does not exist in LDAP, authentication is performed against the FlexNet Code Insight database.

Imported LDAP users are given a default requester role in the system. The users that are added during the LDAP sync process are not allowed to use the Forgot Password or Modify Preferences features of the application. The Application administrator can set a role for a user if it is different than that of a participant.

The system can maintain user information for users that do not exist in LDAP. An example of this scenario is an external contractor who needs access to LDAP but does not exist in LDAP. In such a case, the user information is managed via FlexNet Code Insight directly.

- You define LDAP user import frequency by modifying the ldap configuration file. The default setting in the properties file is ldap.jobFrequency=0 0 6 * * ?. This means that every morning at 6 AM the system syncs up with the LDAP server.
- Refer to http://www.quartz-scheduler.org/documentation/quartz-2.x/tutorials/crontrigger for further information about the cron expression format. LDAP frequency example syntax is as follows:

ldap.jobFrequency=0 0 6 * * ? (every morning 6 AM) ldap.jobFrequency=0 0/1 * * * ? (every minute)

• During the initial startup, the application replaces the plain-text LDAP password with an encrypted value.

- The application reads the plain text password and writes the encrypted password back into the core.ldap.properties file in the following format: <ENCRYPTED_PASSWORD>ENCRYPTED. For subsequent server re-starts, the application uses the encrypted password.
- To change the password, the administrator needs to bring down the server, then, you can enter the new plaintext password into the core.ldap.properties file, and restart the server. During the server startup, the application will again read the plain-text password and write the encrypted password back into core.db.properties.
- If your LDAP server supports anonymous access, and you prefer to connect to the LDAP server anonymously rather than via a password-protected account, you can enable this by specifying ldap.anonymous=true in the core.ldap.properties file.

The configurable properties from the LDAP configuration files are shown below. Ensure that you DO NOT comment out any attribute mappings. If you do not want to map and attribute, set it equal to blank. For example:

ldap.user.middleNameAttr= # LDAP server connection settings, url, userName and password # this user should have read right to be able to access the schema # LDAP server connection settings, url, userName and password # this user should have read right to be able to access the schema #To enable LDAP Authentication set ldap.enabled to true ldap.enabled=true #To sync LDAP users to Code Insight user lists "ldap.user.sync.enabled=true" #URL of the LDAP server, for eg. ldap://<ldap_server>:389 ldap.url=ldap://ad.Code Insight.com:389 #Base node of LDAP server, for all the searches base node will be automatically appended. ldap.base= dc=ad,dc=Code Insight,dc=com #User name to login to LDAP server ldap.userName=cn=Manager,dc=ad,dc=Code Insight,dc=com #Password to login to LDAP server ldap.password=secret #searchBase and searchFilter are used to import users to Code Insight system. #DO NOT append ldap.base to ldap.searchBase # Search base where you can s all the desired users. ldap.searchBase=CN=Users # Search filter to pull only desired users to the Code Insight System, you can use LDAP Query here. ldap.searchFilter=(&(objectClass=person)(memberOf=CN=Code InsightAppsecGroup,CN=Users,DC=ad,DC=Code Insight,DC=com)) # LDAP user login filter, sAMAccountName={0} (for Active directory) ldap.loginFilter=sAMAccountName={0} # Turn it on if LDAP server has paging enabled, mostly for Active Directory ldap.serverPaging = false #LDAP user login attribute, loginAttr and loginFilter must always be in sync ldap.user.loginAttr=sAMAccountName #Uniquely identifiable attribute for each user, if none found loginAttr will be used. ldap.user.externalIdAttr=sAMAccountName #LDAP user email attribute, it should always have a valid email address value ldap.user.emailAttr=mail # Do NOT comment out unwanted attribute mappings, set them equal to blank to not assign a value #LDAP user firstName attribute (Optional) ldap.user.firstNameAttr=<LDAP ATTR> #LDAP user middleName attribute (Optional) ldap.user.middleNameAttr=<LDAP ATTR> #LDAP user lastName attribute (Optional) ldap.user.lastNameAttr=<LDAP ATTR> #LDAP user business unit attribute (Optional) ldap.user.businessUnitAttr=<LDAP_ATTR> #LDAP user job title attribute (Optional) ldap.user.jobTitleAttr=<LDAP ATTR> #LDAP user location attribute (Optional) ldap.user.locationAttr=<LDAP ATTR> LDAP user telephone attribute (Optional) ldap.user.telephoneAttr=<LDAP ATTR> #LDAP user fax attribute (Optional) ldap.user.faxAttr=<LDAP_ATTR> #LDAP user state attribute (Optional) ldap.user.stateAttr=<LDAP_ATTR> # Use Cron frequency syntax # Refer to http://www.quartz-scheduler.org/docs/tutorials/crontrigger.html for examples # runs every 4 hours #ldap.jobFrequency=0 0 */4 * * ? # runs every morning at 6 AM ldap.jobFrequency=0 0 6 * * ? # runs every Monday at 6 AM # ldap.jobFrequency=0 0 6 ? * MON # Default roles to be assigned to all the ldap users in Code Insight system.

Comma seperated list should be provided below with possible values of requester, reviewer, participant. ldap.user.role = # Associations of LDAP queries to User Lists # LDAP Query for user list consists of 2 parameters (<userlist_name>.ldap.description & <userlist_name>.ldap.query).

These 2 parameters need to be configured for each user list that is associated with an LDAP query.

The LDAP query description will be shown in the Web UI in place of the actual query.

The LDAP query will be executed each tyme an LDAP sync occurs.

#<userlist_name>.ldap.description = <enter description of LDAP query to be shown on user list details
page in Web UI>

#<userlist_name>.ldap.query = <enter LDAP query to be executed for this user list each time an LDAP sync occurs>

Configurable LDAP Properties

You can use the LDAP instead of the FlexNet Code Insight user name and password information to authenticate users. The groups, projects, and IP policies, however, are still managed via the administration functions in FlexNet Code Insight. The authentication is a three-step process:

- The users enter their user names and passwords on the FlexNet Code Insight login page.
- FlexNet Code Insight calls into LDAP to authenticate the users and obtain user information that is passed back to FlexNet Code Insight.
- If a user is not found in LDAP, the user is authenticated against the FlexNet Code Insight database. A scenario in which this might occur is when contractors who have access to FlexNet Code Insight do not exist in the customer's LDAP/AD system.

Data Synchronization

User Metadata

The metadata for each user (name, email, role, etc.) is pulled from LDAP and refreshed in the FlexNet Code Insight database at a regular frequency via a scheduler module running within FlexNet Code Insight. The data synchronization is a one- way pull from LDAP into the FlexNet Code Insight database. This action overwrites the existing data in the FlexNet Code Insight database. User data for those users that do not exist in LDAP is not affected by this process.

Disabled Users

Users who are disabled in FlexNet Code Insight will still have their data synchronized with LDAP, but will have the disabled flag set to "true" and will not be granted access to the application.

LDAP Synchronization to Multiple Sources

FlexNet Code Insight supports LDAP synchronization for authentication and for authorization to two or more sources. Users may be authenticated against one LDAP directory and authorized with roles and permissions from a secondary source.

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Task

To configure a secondary LDAP server for authorization, do as follows:

- Add and define the following properties in core.ldap.properties (<FNCI_ROOT_DIRECTORY>/config/core/ core.ldap.properties):
 - ldap2.url ldap2.base ldap2.userName ldap2.password ldap2.anonymous ldap2.read.timeout ldap2.searchBase ldap2.searchFilter
- **2.** Restart the server.
- 3. Note the following property behavior:
 - If an **Idap2.name** property is not specified or specified with no value, its **Idap.name** counterpart applies. For example, if "Idap2.read.timeout = ", the Idap.read.timeout value is applied during the sync.
 - If either Idap2.searchBase or Idap2.searchFilter is specified with a value, both apply.
 - If one of these properties (**Idap2.searchBase** or **Idap2.searchFilter**) is specified, the value for the other will be an empty string. For example: "Idap2.searchFilter = (objectClass=*)" implies "Idap2.searchBase = "
 - A sync also requires appropriate Idap.user.name properties

LDAP Configuration

This section contains information pertaining to configuration of LDAP search filters, user lists, server paging and SSL.

Set Up a User Search Filter

Pulling only required users into FlexNet Code Insight, configuring searchBase and searchFilter entries properly is important. searchBase is typically the root node under which you can s all the desired users. searchFilter allows for an LDAP query based on user attributes. We recommend creating a FlexNet Code Insight system-specific group and making all of the desired users part of this group. Then, use this group in search Filter, as show below.

		1	,
🕂 Browser root	Name 🗸	Value	Туре
🖻 🗍, ad .palamida.com	CN CN	Administrator	entry
	CN CN	Alex Rybak	entry
CN=Computers	CN CN	Amp Test 1	entry
CN=defaultMigrationContainer30	CN CN	Cert Publishers	entry
CN=Exercise Security Originals	CN CN	DHCP Administrators	entry
CN=ForeignSecurityPrincipals	CN CN	DHCP Users	entry
	CN CN	DnsAdmins	entry
CN=NTDS Ouotas	CN CN	DnsUpdateProxy	entry
CN=Program Data	CN CN	Domain Admins	entry
CN=System	CN CN	Domain Computers	entry
CN=Users	CN CN	Domain Controllers	entry
🗉 🕕 Michigan	CN CN	Domain Guests	entry
🛨 🗍, OpenLDAP	CN CN	Domain Users	entry
🗄 🗐, Unizeto CERTUM	CN CN	Enterprise Admins	entry
	CN CN	IIS_WPG	entry
	CN CN	IUSR_SATURN	entry
	CN CN	IWAM_SATURN	entry
	CN CN	Jiss Jose	entry
	CN CN	krbtgt	entry
	CN CN	PalamidaAppsecGroup	entry
	CN CN	Rani Mathur	entry
	CN CN	Rani Mathur 1	entry
		Rani Mathur 10	entry

Figure 14-1: Sample LDAP Tree

Default Role Assignment

The option to set user roles when pulling LDAP users into FlexNet Code Insight is available via the **Idap.user.role** property in **core.Idap.properties**. The available roles are requester, reviewer and participant. All other roles must be set manually in the Web UI.

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```
Task To set the user roles, do the following:
```

1. Modify the core.ldap.properties file to include the roles in a comma separated list. For example, the following entry will assign all LDAP users the role of requester, reviewer and participant.

ldap.user.role = requester, reviewer, participant

If no default role assignment is set, all LDAP users will be assigned the role of requester only.

2. Restart the server for this property to take effect.



Note • User roles can only be added via LDAP sync; they cannot be removed using this property. To remove a user role the FlexNet Code Insight Administrator must make the change in the Web UI. S the "Administration Menu: User Options" section of the FlexNet Code Insight User Guide for more information.

Set Up a User List Sync

FlexNet Code Insight provides the option to manage user lists dynamically via LDAP so that user list data is updated each time an LDAP sync takes place. For example, if a user is part of the *Developer* user list and is removed from LDAP, that user will automatically be removed from the *Developer* user list next time an LDAP sync takes place.

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To set up a user list sync, do the following:

- 1. Select Users from the Administration menu.
- 2. Select the User Lists tab and click Add New User List.
- **3.** Enter a name for the user list. LDAP user list names must not contain any spaces. If spaces are necessary, they must to be escaped in the property file according to instructions below.
- **4.** Select the user list type. User list type must match the type of users that will be added to the list. For example, a list that contains users with the role of Requester should be of type Requester.
- 5. Click Save.



Note • Do not add users via the web UI because they will be added during the LDAP sync.

6. Modify the **core.ldap.properties** file to include the user list name, a description of the user list that will be visible in the Web UI and an LDAP Query to associate to the user list. For example:

Developers_List.ldap.description = The description of the LDAP query in words Developers_List.ldap.query = (&(objectclass=user)(objectcategory=person))

7. If the user list name contains spaces, they must be escaped as such:

```
Developers\ List.ldap.description
Developers\ List.ldap.query
```

 Restart the FlexNet Code Insight server. The query populates the Developers user list with all users that match the specified query:

Name	Developers The userlist_name			
Description	Developers who will be requesting to use open-source software.			
User List Type	Requester			*
LDAP Query	The description of the LDAP query in words Value of Developers.ldap		description	
Users	Search:		P	
	login	First Name ▲	Last Name	Email
	rmathur1000	NAMES OF A DESCRIPTION OF A DESCRIPTIONO		rmathur@palamida.com
	rmathur1001	Results of query in	Developers.Idap.query	rmathur@palamida.com

Server Paging

LDAP and Active Directory support server paging controls the number of records the system is pulling at any given time. Set 1dap.serverPaging to true to allow FlexNet Code Insight to enable paging.

Note • SunOne Directory Server does not support server paging in certain releases http://kb.globalscape.com/KnowledgebaseArticle10218.aspx. If you are using SunOne Directory Server, ensure that server paging is disabled: ldap.serverPaging=false.

LDAP over SSL

SSL provides data encryption security for user information passed over the network. You must use ldaps://URL with 636 port, which is the default dedicated port for SSL.

Troubleshooting and Testing LDAP Configurations

You can use an LDAP Browser such as Apache Directory Studio to verify that settings are configured correctly.

Q: What if I can't connect to the LDAP server using FlexNet Code Insight?

A: Verify your LDAP configuration using LDAP Browser or the FlexNet Code Insight LDAP test groovy script located in the **<Code Insight_ROOT_DIR>\<version>\scriptRunner\scripts** directory. Visit FlexNet Code Insight Customer Community at https://flexeracommunity.force.com/customer/CCContactSupport for instructions on executing the script or for help on connecting.

Q: How do I set up searchBase and searchFilter?

A: Using the LDAP Browser, do as follows:

- 1. Click Search.
- 2. Enter [Idap.searchBase, Idap.base] in the Search DN field.
- 3. Enter ldap.searchFilter in the Filter field.
- 4. Set the Search scope to Sub-tree level.
- 5. Click Search.
- 6. Build or modify your searchBase using this tool (searchBase may contain LDAP queries).

Attributes:		-
Search Scope: C One level 📀 Sub-tree level		
DN		^
CN=Rani Mathur, CN=Users, DC=adtest, DC=palamida, I	DC=com	
CN=Rani Mathur 1, CN=Users, DC=adtest, DC=palamida	a,DC=com	
CN=Rani Mathur 2, CN=Users, DC=adtest, DC=palamida	a,DC=com	
CN=Rani Mathur 3, CN=Users, DC=adtest, DC=palamida	a,DC=com	
<		>
	Save Result Stop	Close

Chapter 14 Integrating with LDAP for Authentication (Optional) LDAP Configuration

Configuring Additional Scan Servers (Optional)

This section provides details about the optional configuring of additional scan servers:

- Overview
- Configuration Details

Overview

The follow scenarios require you to configure additional FlexNet Code Insight Scan servers:

- The codebases are too large to scan on a single server. You can use additional FlexNet Code Insight Scan servers to distribute the load.
- The system experiences a bottle-neck by a single scan queue, and using additional FlexNet Code Insight Scan servers enables you to perform parallel scans.

Configuration Details

Configuring additional FlexNet Code Insight Scan servers is similar to configuring the first FlexNet Code Insight Scan server with a few exceptions. For each additional Scan Engine server, do as follows:

- 1. Register each additional FlexNet Code Insight Scan server on the Core server.
- In core.properties (<Code Insight_ROOT_DIR>\<version>\config\core\) on the Core server, add an alias for the new FlexNet Code Insight Scan server and define the associated properties. Separate multiple aliases with commas.

```
scan.server.aliases = <ALIAS1>, <ALIAS2>, <ALIAS3>
scan.server.<ALIAS>.web = http://<SCAN_SERVER_IP_ADDRESS1>:<HTTP_PORT>/Code InsightScanEngine
scan.server.<ALIAS2>.web = http://<SCAN_SERVER_IP_ADDRESS2>:<HTTP_PORT>/Code InsightScanEngine
scan.server.<ALIAS3>.web = http://<SCAN_SERVER_IP_ADDRESS3>:<HTTP_PORT>/Code InsightScanEngine
```

- **3.** Modify the configuration files on each additional FlexNet Code Insight Scan server. The configuration changes required to configure additional FlexNet Code Insight Scan servers are as follows:
 - a. The core.db.properties (<Code Insight_ROOT_DIR>\<version>\config\core\) file defines the database connection details for use by the FlexNet Code Insight Scan server. Copy this file from the FlexNet Code Insight Core server. This is the only file required in the core directory on each remote FlexNet Code Insight Scan server.
 - **b.** Update **scanEngine.properties** (**<Code Insight_ROOT_DIR>\<version>\config\scanEngine**) with your scan server settings::
 - a. Set the coreServerUrl to point to your FlexNet Code Insight Core Server URL.
 - b. Set serverURL to point to the URL of the FlexNet Code Insight Scan server you are configuring.
 - **c.** Set the scanServerName to the alias name of the server you are configuring from core.properties on the Core server, denoted as <ALIAS> in Step 2, that registers this instance of the FlexNet Code Insight Scan server
- **4.** Copy the FlexNet Code Insight Key to each FlexNet Code Insight Scan server. Contact Flexera Software if you need to obtain a key.

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Note • FlexNet Code Insight Analyzer requires a new key with data services enabled.

- Copy the FlexNet Code Insight Data libraries to each additional FlexNet Code Insight Scan server. See Installing the Compliance Library for additional information.
- Copy Tomcat to each additional FlexNet Code Insight Scan server. See Extracting Application Files and Configuring the Tomcat Web Server for additional information.
 - **a.** Only the FlexNet Code InsightScanEngine directory (exploded war file) is required in the Tomcat web applications directory (<Code Insight_ROOT_DIR>\<version>\tomcat\webapps).
 - b. Remove the FlexNet Code Insight directory before starting Tomcat.
 - c. Ensure that the Tomcat cache is flushed. You can do this by removing all contents from the **<Code** Insight_ROOT_DIR>\<version>\tomcat\work\Catalina\localhost\ directory.
 - d. Copy the database driver to Tomcat. See Installing the Database Driver.

Visit the FlexNet Code Insight Customer Community at https://flexeracommunity.force.com/customer/ CCContactSupport for assistance if you need to generate custom source code fingerprints on multiple servers.
 Table 16-1 • Common SQL Commands

Code

Command

Create Database	CREATE DATABASE <the database="" name="">;</the>		
	For example:		
	CREATE DATABASE Code Insight;		
	Make sure the user has permissions to create a new database.		
Create User and	Access from a specific server:		
Grant All Privileges	CREATE USER 'user'@'server' IDENTIFIED BY 'password';		
	Access from any server:		
	CREATE USER 'user'@'%' IDENTIFIED BY 'password';		
	GRANT ALL PRIVILEGES ON *.* TO 'user'@'server' WITH GRANT OPTION; FLUSH PRIVILEGES;		
Default User and	On Linux, the default user for most Linux MySQL installs is root the password is blank.		
Password	On Windows, Windows prompts for user name and password during the setup process.		
Execute the SQL	mysql -h <the host=""> -u <the user=""> -p <the database=""> < <path file="" script="" to=""></path></the></the></the>		
Scripts	You can use this command to execute the Code Insight SQL scripts from command line.		
List All Database for	SHOW DATABASES;		
MySQL Instance	This will list all databases. After running the create database command, you can use this to verify it was successfully created.		

Configuring FlexNet Code Insight using MySQL Commands

The following table describes common MySQL commands and how to use them to configure FlexNet Code Insight.

16

Table 16-1 • Common SQL Commands

Command	Code	
Log into MySQL	mysql -h <the host=""> -u <the user=""> -p <the database=""></the></the></the>	
	Note • The -p option prompts for a password when you hit Enter; the statement that follows -p is the name of the database not the password.	

Configuring the FlexNet Code Insight Windows Service

This chapter explains how configure FlexNet Code Insight to run as a Windows service.

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Task

To configure the FlexNet Code Insight Windows service, do the following:

- **1.** Stop the Tomcat server.
- 2. Using the command prompt, navigate to <CODE_INSIGHT_ROOT_DIR>\tomcat\bin.
- 3. Execute the service.bat install command to install the Apache Tomcat Windows service.
- 4. Run <CODE_INSIGHT__ROOT_DIR>\tomcat\bin\tomcat7w.exe.
- 5. Select the Log On tab:

👌 Apache Tomcat 7 Pro	perties	— ×
General Log On Loggin	ng Java Startup Shutdown	1
Log on as:		
🔘 Local System accour	t	
Allow service to i	nteract with desktop	
Itis account:	<user></user>	Browse
Password:	•••••	
Confirm Password:	•••••	
	OK Cano	el Apply

6. Enter the user for which the Apache Tomcat Windows service will run.

7. Select the Java tab:

Apache Tomcat 7.0 Tomcat7 Properties X							
General Log On Logging	Java	Startup	Shutdown				
Use default							
Java Virtual Machine:							
C:\Program Files (x86)\Java\jdk1.8.0_151\jre\bin\server\jvm.dll							
Java Classpath:							
C:\Code_Insight\6.13.1\tomcat\bin\bootstrap.jar;C:\Code_Insight\6.13.							
Java Options:							
-XX:PermSize=128m							
-XX:MaxPermSize=256m -DpalamidaInstallPath= <code_insight_root_dir></code_insight_root_dir>							
-DcodeinsightInstallPath= <code_insight_root_dir></code_insight_root_dir>							
Initial memory pool:	128		MB				
Maximum memory pool:	256		MB				
Thread stack size:			KB				
		OK	Cancel	Apply			

8. In the Java Options text area, append the following lines and make sure that there are no trailing spaces:

Option	Description	
-XX:PermSize=128m	Set to appropriate value for your system.	
-XX:MaxPermSize=256m	Set to appropriate value for your system.	
-Dpalamida.ssl=true	Only required to enable HTTPS (SSL); not required otherwise.	
-DpalamidaInstallPath= <code_insight_root_dir></code_insight_root_dir>	Set to your FlexNet Code Insight root directory, such as C:\Code_Insight\6. <i>x</i> .	
-DcodeinsightInstallPath= <code_insight_root_dir></code_insight_root_dir>	Set to your FlexNet Code Insight root directory, such as C:\Code_Insight\6. x.	

- 9. Modify the Initial memory pool value to 256 MB.
- 10. Modify the Maximum memory pool value to 12288 MB.

Note • Set the maximum memory pool no higher than 80% of your available memory.

- 11. Click Apply.
- 12. Start the Tomcat server.

Using SCM Connectors

FlexNet Code Insight supports multiple source code management (SCM) connectors to allow workspaces to obtain the appropriate codebase before a scan. This section explains the use of SCM connectors in the following topics:

- Using the SCM Command Line Client
- Recommended Clients
- Setting the Environment Variable
- Workspace Settings

Using the SCM Command Line Client

Before you proceed, ensure that an SCM command line client is installed and configured on the FlexNet Code Insight Scan server as this is necessary for FlexNet Code Insight to connect and sync to an SCM repository.

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Task

To verify that the SCM client is installed and available to FlexNet Code Insight, do the following:

- 1. Open a Command Prompt and navigate to the FlexNet Code Insight root directory.
- 2. Execute a command specific to your SCM. For example:
 - ct help
 - git help
 - tf help
 - p4 help
 - svn help

If the system cannot find the command specified, verify that the SCM client directory is part of the PATH variable on this server. Consult your SCM documentation for more information on how to install and configure the client.

Recommended Clients

The following is a list of clients known to work well with FlexNet Code Insight:

		-	-
-	-	-	
_			
-			

Note • Download site links are subject to change ...

SCM	Client	Cost	Download Site
Subversion (SVN)	TortoiseSVN	Free	http://tortoisesvn.tigris.org/
Git	Git	Free	http://git-scm.com/downloads
TFS	Team Explorer Everywhere	Free	https://github.com/Microsoft/team-explorer- everywhere/releases
Perforce	Perforce Visual Client (P4V)	Free Trial	https://www.perforce.com/products/helix-core-apps/ command-line-client
Clearcase	Rational ClearCase	\$	http://www-03.ibm.com/software/products/en/ clearcase

Note • As of FlexNet Code Insight version 6.11.3, legacy client Team Explorer is no longer supported for use with FlexNet Code Insight. For compatibility with FlexNet Code Insight, upgrade to Team Explorer Everywhere client and update the PATH variable to point to the location containing the new client.

Verified Team Explorer Everywhere Client Versions

This release of FlexNet Code Insight introduces support for Team Explorer Everywhere Client. The following versions of Team Explorer Everywhere Client have been verified for this release:

- TEE-CLC-11.0.0
- TEE-CLC-12.0.2
- TEE-CLC-14.0.2
- TEE-CLC-14.0.3
- TEE-CLC-14.0.4
- TEE-CLC-14.114.0
- TEE-CLC-14.118.0
- TEE-CLC-14.123.1

Downloads for these versions are available at https://github.com/Microsoft/team-explorer-everywhere/releases.

Note • As of FlexNet Code Insight version 6.11.3, legacy client Team Explorer is no longer supported for use with FlexNet Code Insight. For compatibility with FlexNet Code Insight, upgrade to Team Explorer Everywhere client and update the PATH variable to point to the location containing the new client.

Setting the Environment Variable

If you are running the SCM command line client from a Windows machine, verify that your SCM client location is added to the PATH environment variable.

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To set the environment variable, do the following: 1. To find your PATH environment variable settings, navigate to Control Panel > System > Advanced System Settings. 2. Click the Environment Variables button 3. Look for the PATH system variable and make sure that it is set appropriately to the location of your SCM bin directory.

Note • Your SCM may require other environment variables to be set. Consult your SCM documentation for more information.

Workspace Settings

If integration with ClearCase, Perforce, Subversion, Git, or TFS is enabled in the scan engine SCM configuration file (<CODE_INSIGHT_ROOT>/config/scanEngine/scm.properties), the **Applications** dropdown in the **Workspace Settings – General** tab is populated with the available options.

Selecting any of the options enables the **Software Configuration Management** (SCM) tab which allows you to configure the SCM settings for the selected SCM application for the current workspace. Doing this ensures that files are up to date at the time of scanning.

General Detection Sou	rce Code Options Rescan Options Automated Analysis	
lame	scm	
Description		
Applications	None (Use Local File System)	
-olders to Scan	IBM Rational ClearCase Perforce Subversion Git TFS	Browse Type Remove
Excluded File Patterns	**\$tf + -	

IBM Rational ClearCase

To configure the current workspace to use IBM Rational ClearCase for managing the codebase, perform the following steps.

E) Task

To configure the current workspace to use IBM Rational ClearCase, do the following:

- 1. On the Workspace Settings General tab, select IBM Rational ClearCase in the Application dropdown.
- 2. Click on the **Software Configuration Management** tab, and the **Software Configuration Management** tab screen appears. On this screen, you can enter ClearCase configuration options.

General Software Configur	ation Management	Detection	Source Code Options	Rescan Options	Automated Analysis
					SCM Configuration
ClearCase View			Apply Filter Remov	e Filter	
				V	
Invoke ClearCase	Start ClearCase V	iew and Mour	nt ClearCase VOBs		
Folders to Scan					Browse
					Туре
					Remove
Excluded File Patterns	**\\$tf		<u>+</u> -		
	**\.git				
	**\.hg		•		
			Save	Cancel	

- 3. The following options are available for ClearCase:
 - **ClearCase View**—Select the ClearCase view to associate with the FlexNet Code Insight workspace.
 - ClearCase VOBs—Select the ClearCase VOBs to associate with the FlexNet Code Insight workspace.
- Click the Start ClearCase View and Mount ClearCase VOBs button to ensure that ClearCase has been initialized for your selected view and VOBs.
- 5. In the Folders to Scan area, select the folders to scan. You can create new subdirectories if necessary via the browse dialog Create Child Directory.
- 6. In the Excluded File Patterns area, define any file patters that are to be excluded from the scan.
- 7. Both snapshot and dynamic ClearCase views are supported:
 - To scan a snapshot view, simply point to the folder.
 - To scan a dynamic view, use the following path structure in the **Folders to Scan** area:

/<view_location>/<vob_location>/<project>/<subdirectory>/<folder_1>

For example:

/views/myview/vobs/myvob/ePortal-1.3/src

Using Perforce (P4) to Manage the Codebase

To configure the current workspace to use Perforce for managing the codebase, perform the following steps.

F Task

To configure the current workspace to use Perforce, do the following:

- 1. On the Workspace Settings General tab, select Perforce in the Application dropdown.
- 2. Click on the **Software Configuration Management** tab, and the **Software Configuration Management** tab screen opens as shown below. On this screen, you can enter your Perforce configuration options.

SCM → Workspace → scm SCM SCM → Workspace → scm SCM SCM → Workspace → scm SCM SCM → Workspace → SCM → Workspace → SCM SCM → Workspace → SCM SCM → Workspace →	Settings					
General Software Configura	tion Management	Detection	Source Code Options	Rescan Options	Automated Analysis	
						SCM Configuration Help
Perforce URL					p4:// <server></server>	: <port>/<depot>/<project></project></depot></port>
 Perforce Username 						
Perforce Password						
Perforce Sync To	Latest Revision					
SCM Destination Folder					Browse	
Folders to Scan					Browse	
					Туре	
					Remove	
Excluded File Patterns	**\%tf					
	***_jsp.java **\.git **\.hg		- + - -			
	1		Save	Cancel		

3. The following options are available for Perforce:

Option	Description
Perforce URL	Enter the repository URL in the following format:
Perforce Username/ Password	Enter the username/password to create an authenticated connection to Perforce. In some cases for Perforce, anonymous access may be allowed in which case, you can leave the password field blank.
Perforce Sync To	Select the sync to directive and provide the criteria if necessary. The following options are available:
	Latest Revision
	Specific Revision
	Changelist
	Date
	Label

Option	Description
SCM Destination Folder	Select the folder into which the codebase should be copied on the scan server. You can create new subdirectories if necessary via the browse dialog.
Folders to Scan	Select the folders to scan within the SCM Destination Folder. You can create new subdirectories if necessary via the browse dialog.
Excluded File Patterns	Define any file patters that are to be excluded from the scan.

4. If you wish to sync to a specific folder in a project rather than to the whole project, you may do so by creating the same folder structure as in the repository and selecting the folder as your scan path. For example:

Location	URL
Perforce URL	p4:// <server>:<port>/<depot>/<project></project></depot></port></server>
SCM Destination Folder	<pre>/<sync location="">/</sync></pre>
Folders to Scan	<pre>/<sync location="">/<depot>/<project>/<subdirectory>/<folder1> </folder1></subdirectory></project></depot></sync></pre> Note • In this case, only folder 1 will be synced and scanned.

Using Subversion (SVN) to Manage the Codebase

To configure the current workspace to use Subversion for managing the codebase, perform the following steps.

E	
Task	To configure the current workspace to use Subversion, do the following:
	1. On the Workspace Settings – General tab, select Subversion in the Application dropdown.
	2. Select the Software Configuration Management tab. The Software Configuration Management page

 Select the Software Configuration Management tab. The Software Configuration Management page appears:

General	Software Configuration Manager	Detection	Source Code Options	Rescan Options	Automated Analysis	
						SCM Configuration Help
Subve	ersion URL				http:// <serve< th=""><th>r>/<svnroot>/<repository)< th=""></repository)<></svnroot></th></serve<>	r>/ <svnroot>/<repository)< th=""></repository)<></svnroot>
Subvers	ion Username					
Subvers	ion Password					
Subve	ersion Update To Latest Revis	DN	V			
SCM	Destination Folder				Browse	
Folders	to Scan				Browse	
					Туре	
					Remove	
Exclude	d File Patterns		* + -			

3. Enter Subversion configuration options. The following options are available for Subversion:

Option	Description
Subversion URL	Enter the repository URL in the following format:
	http:// <server>/<svnroot>/<repository></repository></svnroot></server>
Subversion Username/ Password	Enter the username/password to create an authenticated connection to Subversion.
	In some cases for Subversion, anonymous access may be allowed in which case, you can leave both fields blank.
Subversion Update To	Select the update to directive and provide the criteria if necessary. The following options are available:
	Latest Revision
	Specific Revision
SCM Destination Folder	Select the folder into which the codebase should be copied on the scan server. You can create new subdirectories via the browse dialog.
Folders to Scan	Select the folders to scan within the SCM Destination Folder. You can create new subdirectories if necessary via the browse dialog.
Excluded File Patterns	Define any file patters that are to be excluded from the scan.

4. To sync to a specific folder in a repository rather than to the whole repository, you may do so by adding the folder to the **Subversion URL**, such as:

http://<server>/<svnroot>/<repository>/<subdirectory>/<folder1>

In this example, only folder 1 will be synced and scanned.

Git Repositories

Git repositories reside on public servers, such as GitHub and Bitbucket, or on Git servers within a corporate network. The Git URL used to clone the repository into your SCM Destination Folder will vary depending on your desired protocol. Each protocol is discussed below.

- Git Protocol Options
- Git Workspace Configuration

Git Protocol Options

With Git, you have the following protocol options:

- Anonymous HTTP
- Authenticated HTTP
- SSH Authentication
- SSH over HTTPS

Anonymous HTTP

This protocol can be used for a public repository. Public repositories can be cloned without providing an account and password.

Туре	Example
GitHub Example	http://github.com/myacct/Spoon-Knife.git
Bitbucket Example	http://bitbucket.org/myacct/myquotefork.git

Authenticated HTTP

This protocol can be used for a private repository. Provide an account and password as shown in the URL format below. Use a colon between the account and password.

Туре	Example
GitHub Example	https://myacct:password@github.com/myacct/Hello-World.git
Bitbucket Example	https://myacct:password@bitbucket.org/myacct/bb101repo.git

SSH Authentication

This section describes SSH authentication between a system running FlexNet Code Insight and Git servers such as GitHub and Bitbucket. The following options are possible:

- Use one SSH keypair for all Git servers.
- Use a separate keypair for each Git server.
- Use multiple keypairs for some or all Git servers.

SSH does not rely on account passwords but rather on a pair of keys, one a private key and the other a public key. Though a private key file may be protected by a password, no password should be specified for private keys used by FlexNet Code Insight.

Creating Keypairs

Use ssh-keygen to create a keypair for each Git server. Make the passphrase empty by hitting return twice. For example:

```
ssh-keygen -f ~/.ssh/id_rsa_github_test1 -C "github test 1"
ssh-keygen -f ~/.ssh/id_rsa_bitbucket_test1 -C "bitbucket test 1"
```

The created files are:

Туре	Private Key	Public Key
GitHub	id_rsa_github_test1	id_rsa_github_test1.pub
Bitbucket	id_rsa_bitbucket_test1	id_rsa_bitbucket_test1.pub

The private keys remain in the .ssh folder on Linux or the <user_home>\.ssh folder on Windows. Each public key will be stored on a Git server under a palamida_account as described below.

Adding to the Config File

Update .ssh/config (on Linux) or <user_home>\.ssh\config (on Windows).

Property	Github	Bitbucket	
Host	github.com	bitbucket.org	
User	git	git	
HostName	github.com	bitbucket.org	
PreferredAuthentications	publickey	publickey	
IdentityFile	~/.ssh/id_rsa_github_test1	~/.ssh/id_rsa_bitbucket_test1	

There is a correspondence between the name on the Host line and the name used in the URL. When there is only one keypair per host, it is convenient to specify Host as above. This means the URL for git clone is:

git clone git@github.com:account/repository.git

The following definitions allow multiple keys to be used with GitHub or Bitbucket:

Property	Github 1	Github 2
Host	mygithub_01	mygithub_02
User	git	git
HostName	github.com	github.com
PreferredAuthentications	publickey	publickey
IdentityFile	~/.ssh/id_rsa_github_test1	~/.ssh/id_rsa_github_test2

The URLs are changed to use the values of Host from the config file. The appropriate git clone commands are:

git clone git@mygithub_01:account/repository.git
git clone git@mygithub_02:account/repository.git

Both clone commands will connect to gitub.com which is the value of **HostName**. The first command will use the private key id_rsa_github_test1. The second command will uses the private key id_rsa_github_test2.

Setting Up a FlexNet Code Insight (Palamida) Account

The tasks involved in setting up a FlexNet Code Insight (Palamida) account are:

- Define a palamida_account.
- Add a public key to the palamida_account.
- Grant the palamida_account access to repositories to be scanned.

Setting Up a palamida_account

Below are instructions for setting up a palamida_account on GitHub and Bitbucket:

- Setting Up a palamida_account on GitHub
- Setting Up a palamida_account on Bitbucket

Setting Up a palamida_account on GitHub

To set up a palamida_account on GitHub, perform the following steps.

F

Task

To set up a palamida account on GitHub, do the following:

- 1. Create the account on GitHub.
- 2. Click Account settings, SSH Keys, Add SSH key.

3. Enter a Title and paste the contents of the public key file.

Setting Up a palamida_account on Bitbucket

To set up a palamida_account on Bitbucket, perform the following steps:

F Task

To setup a palamida_account on Bitbucket, do the following:

- 1. Create the account on Bitbucket.
- 2. Click Manage Account, SSH keys, Add key.
- 3. Enter a Label and paste the contents of the public key file.

Granting Access to a Repository

Below are instructions for granting access to the repository on GitHub and Bitbucket:

- Granting Access to a Repository on GitHub
- Granting Access to a Repository on Bitbucket

Granting Access to a Repository on GitHub

For a repository that will be scanned, give access to the palamida_account.

Task

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To grant access to a repository on GitHub, do the following:

- 1. From GitHub's **Repository** page, click **Settings**, **Collaborators**.
- 2. Add the palamida_account.
- 3. If you want to verify that the account has been created, from the FlexNet Code Insight system enter:

git ls-remote git@github.com:account_name/repository_name.git

Granting Access to a Repository on Bitbucket

For repository that will be scanned, give access to the palamida_account.

E.		
Task	То	grant access to a repository on Bitbucket, do the following:
	1.	From Bitbucket's Repository page, click Administration, Access management.
	2.	Add the palamida_account as a User with Read access.
	3.	If you want to verify, from the FlexNet Code Insight system enter:
		git ls-remote git@bitbucket.org:account_name/repository_name.git

SSH over HTTPS

The standard SSH port is 22. To run SSH over port 443, perform the steps discussed above in the SSH Authentication section. The only difference is in .ssh/config on Linux or <user_home>\.ssh\config on Windows. Some examples are:

Property	Example 1	Example 2	
Host	github.com	gitssh-https	
User	git	git	
Port	443	443	
HostName	ssh.github.com	ssh.github.com	
PreferredAuthentications	publickey	publickey	
IdentityFile	~/.ssh/id_rsa_github_test1	~/.ssh/id_rsa_github_test1	
URL	git@github.com:account/ repository.git	git@gitssh-https:account/ repository.git	

Git Workspace Configuration

To configure the current workspace to use Git for managing the codebase, perform the following steps.

E

Task

To configure the current workspace to use Git, do the following:

- 1. On the Workspace Settings General tab, select Git in the Application dropdown.
- 2. Click on the **Software Configuration Management** tab, and the **Software Configuration Management** tab screen appears. On this screen, you can enter Git configuration options.

$ SCM \rightarrow Workspace \rightarrow scm S $	ettings				
General Software Configurat	ion Management	Detection	Source Code Options	Rescan Options	Automated Analysis
				4	SCM Configuration Help
 Git URL 					
 Git Update To 	Latest Revision				
SCM Destination Folder					Browse
Folders to Scan					Browse
					Туре
					Remove
Fuchada d Fila Datta ana					
Excluded File Patterns	**\\$tf ***_jsp.java **\.git **\.hg		• • •		
			Save	Cancel	

3. The following options are available for Git:

Option	Description		
Git URL	Enter the repository URL in the appropriate format for your desired protocol:		
	Anonymous HTTP	<pre>http://server/account/repository.git</pre>	
		https://server/account/repository.git	
	Authenticated HTTP	http://account:password@server/account/ repository.git	
		https://account:password@server/account/ repository.git	
	SSH	git@server:account/repository.git	
		<pre>ssh://server/account/repository.git</pre>	
	SSH over HTTPS (GitHub	git@server:account/repository.git	
	only)	<pre>ssh://server/account/repository.git</pre>	
Fit Update To	Select the update to directive and provide the criteria if necessary. The following options are available:		
	Latest Revision		
	• Specific Tag		
SCM Destination Folder	Select the folder into which the codebase should be copied on the scan server. You can create new subdirectories if necessary via the browse dialog.		
Folders to Scan	Select the folders to scan within the SCM Destination Folder. You can create new subdirectories if necessary via the browse dialog.		
Excluded File Patterns	Define any file patters that are to be excluded from the scan.		

4. The system does not currently support syncing to a specific folder within a GIT repository without pulling in all the data in that repository.

Microsoft Team Foundation Server (TFS)

To configure the current workspace to use TFS for managing the codebase, perform the following steps.

E,

Task

To configure the current workspace to use TFS, do the following:

- 1. On the Workspace Settings General tab, select TFS in the Application dropdown.
- **2.** Click on the **Software Configuration Management** tab, and the **Software Configuration Management** screen appears. On this screen, you can enter your TFS configuration options.

General Software Configura	tion Management	Detection	Source Code Options	Rescan Options	Automated Analysis	
						SCM Configuration H
TFS URL					http:// <server>:-</server>	<port>/<collection>/<project< td=""></project<></collection></port>
TFS Username						
TFS Password						
TFS Update To	Latest Changeset					
SCM Destination Folder					Browse	
olders to Scan					Browse	
					Туре	
					Remove	
Excluded File Patterns	**\\$tf ***_jsp.java **\.git **\hq		• • •			

3. The following options are available for TFS:

Option	Description
TFS URL	Enter the repository URL in the following format: http:// <server>:<port>/<tfsroot>/<collection>/<project></project></collection></tfsroot></port></server>
TFS Username/ Password	Enter the username/password to create an authenticated connection to the TFS repository.
TFS Update To	 Select the update to directive and provide the criteria if necessary. The following options are available: Latest Changelist Specific Changelist Label
SCM Destination Folder	Select the folder into which the codebase should be copied on the scan server. You can create new subdirectories if necessary via the browse dialog.
Folders to Scan	Select the folders to scan within the SCM Destination Folder. You can create new subdirectories if necessary via the browse dialog.

Option	Description
Excluded File Patterns	Define any file patters that are to be excluded from the scan.

4. To sync to a specific folder in a project rather than to the whole project, add the folder to the URL:

http://<server>:<port>/<tfsroot>/<collection>/<project>/<subdirectory>/<folder_1>

In this example, only folder 1 will be synced and scanned.

Project Copy Settings

As part of the project copy configuration, if an SCM application has been configured for any of the source workspaces, the target workspace in the new project also must be configured for the same SCM application. The user is presented with input fields for each target workspace where the source workspace has an SCM application configured.

📁 Project Copy			
General Options Custom	n Copy Options Workspace Options		
Pre-Copy Options	Compare Source and Target File Paths (only files that are marked as reviewed, tagged, or associated with groups will be compared)		
Workspace #1	Workspace Name		
	Source: tfs_test Target:		
	Workspace Software Configuration Management Settings		
	SCM Configuration He		
	Source:		
	TFS URL: http://127.0.0.1:8080/tfs/DefaultCollection/ePortal-1.3		
	TFS Username: palamida		
	TFS Sync To: Latest Revision		
	SCM Destination Folder: C:\Cleanroom\tfs_repo\		
	Target:		
	• TFS URL:		
	• TFS Username:		
	TFS Password: Use Existing Password		
	TFS Sync To: Latest Changeset		
	SCM Destination Folder: Browse Type		
	Workspace Folders to Scan		
	Source: C:\Cleanroom\tfs_repo\ Target: Browse Type		
	Copy Project Cancel		

Depending on which SCM application was configured in the source workspace, the set of input fields will vary. Refer to the Workspace Settings section for detailed explanation of each input field.

19

Performing Backup and Recovery

To prevent permanent data loss, it is recommended that you perform regular backups of the configuration files, workspaces, and central database associated with FlexNet Code Insight. This section explains how to perform a complete backup of the system:

- Terminology
- Performing the Backup
- Performing the Restore

Terminology

The **<CODE_INSIGHT_ROOT_DIR>** refers to the directory in which FlexNet Code Insight has been installed.

The **<CODE_INSIGHT_USER_HOME>** refers to the **\$user.home/.codeinsight/config/** directory, which contains client logs and Detector client properties used by FlexNet Code Insight.

Performing the Backup

To perform a backup, perform the following steps.

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To perform a backup, do the following:

- 1. The FlexNet Code Insight Core and all Scan Engine servers must be stopped to perform the backup.
 - See Administration: Starting & Stopping Servers for details on stopping the servers.
 - If you have a multi-scan server environment, perform these steps for each scan server.
- 2. Copy or tar/zip the **<CODE_INSIGHT_USER_HOME>** directory.
 - This directory contains the client logs and Detector client properties used by FlexNet Code Insight.

- If you have a multi-scan server environment, perform these steps for each scan server.
- 3. Copy or tar/zip the <CODE_INSIGHT_ROOT_DIR> directory.
 - This directory contains all the components of the FlexNet Code Insight system.
 - If you have a multi-scan server environment, perform these steps for each scan server.
- 4. Copy or tar/zip the workspaces directory.
 - The workspaces directory is defined in the <CODE_INSIGHT_USER_HOME>/scanEngine/ scanEngine.properties file. Search for the workspaceBaseDirPath parameter. Typically, this would be located in <CODE_INSIGHT_ROOT_DIR>/workspaces.
 - This is only necessary if the workspaces directory has been defined outside of the <CODE_INSIGHT_ROOT_DIR>.
 - This directory contains all of the workspace data and metadata.
 - If you have a multi-scan server environment, perform these steps for each scan server.
- Take a complete database dump of the central database configured in the <CODE_INSIGHT_USER_HOME>/ core/core.db.properties file.
 - For MySQL, you can use one of the following:

Utility	URL
mysqldump program	http://dev.mysql.com/doc/refman/5.7/en/mysqldump.html
MySQL Backup utility	http://dev.mysql.com/doc/refman/5.7/en/mysqldump.html

• For Oracle, refer to the following for detailed instructions:

http://www.orafaq.com/wiki/Oracle_database_Backup_and_Recovery_FAQ

- 6. When the backup is completed, start the FlexNet Code Insight servers.
 - See the Administration: Starting & Stopping Servers section of this guide for details on starting the servers.
 - If you have a multi-scan server environment, perform these steps for each scan server.

Performing the Restore

To perform a restore, use the following steps.

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To perform a restore, do the following:

- 1. The FlexNet Code Insight Core and all Scan Engine servers must be stopped to perform the restore.
 - See the Administration: Starting & Stopping Servers section of this guide for details on stopping the servers.
 - If you have a multi-scan server environment, perform these steps for each scan server.

- Delete the current content of the <CODE_INSIGHT_USER_HOME> directory, and extract the <CODE_INSIGHT_USER_HOME> backup to this location.
 - If you have a multi-scan server environment, do this for each scan server.
- Delete the current content of the <CODE_INSIGHT_ROOT_DIR> directory, and extract the <CODE_INSIGHT_ROOT_DIR> backup to this location.
 - If you have a multi-scan server environment, perform these steps for each scan server.
- 4. Delete the current content of the workspaces directory, and extract the backup to this location.
 - This is only necessary if the workspaces directory has been defined outside of the <CODE_INSIGHT_ROOT_DIR>.
 - If you have a multi-scan server environment, perform these steps for each scan server.
- 5. Restore the complete database dump to the central database.
 - For MySQL, you can use one of the following:

Utility	URL
mysqlimport program	http://dev.mysql.com/doc/refman/5.7/en/mysqlimport.html
MySQL Administrator Client Restore utility	http://dev.mysql.com/doc/refman/5.7/en/mysqldump.html

- For Oracle, refer to http://www.orafaq.com/wiki/Oracle_database_Backup_and_Recovery_FAQ for detailed instructions.
- 6. Once the restore is completed, you may start the FlexNet Code Insight servers.
 - See Administration: Starting & Stopping Servers for details on starting the servers.
 - If you have a multi-scan server environment, perform these steps for each scan server.

Chapter 19 Performing Backup and Recovery

Performing the Restore

Frequently Asked Questions

This section lists the following frequently asked questions about FlexNet Code Insight installation:

- Can I use the installer to update an existing installation of FlexNet Code Insight?
- If an installation was canceled or did not complete successfully, can I re-run the installer with the same root directory and database schema?
- Can I install into a directory that does not exist?
- Can I input a domain name or "localhost" instead of an IP address for the Core, Scan and s?
- What can I do if the GUI installer doesn't allow me to install to a drive other than C:\?
- How can I see which scripts were run by the installer and which tables were created?
- What is the Scan Root Directory?
- What should I do if my maximum memory is not listed?
- What if I make a mistake?
- Can I configure multiple Scan Servers using the Installer?

Can I use the installer to update an existing installation of FlexNet Code Insight?

No, running the Installer on an existing installation will overwrite existing project and workspace data.

If an installation was canceled or did not complete successfully, can I re-run the installer with the same root directory and database schema?

Yes, you may run the Installer again using the same information. If prompted to overwrite existing files, click **Yes to All**.

Can I install into a directory that does not exist?

Yes, you may install into a directory that does not exist. The directory will be created after you have gone through all the prompts for setting up the product

Can I input a domain name or "localhost" instead of an IP address for the Core, Scan and s?

Yes, you may use a domain name or localhost as long as the DNS point settings have been configured for the IP address and your machine can resolve the name.

What can I do if the GUI installer doesn't allow me to install to a drive other than C:\?

Click **Choose**. In the folder edit box, type the drive letter (such as D:\) and click **Enter**. Use the mouse to select the directory to install into and click **OK**.

How can I see which scripts were run by the installer and which tables were created?

You may check the <CODE_INSIGHT_ROOT_DIR>/logs directory for more information about each script that was executed during the installation.

What is the Scan Root Directory?

The Scan Root Directory is the root of the server file system. You may use this property to control which files and directories users have access to. It can be specified during the Installer session or at a later time by editing the scanEngine.properties file.

What should I do if my maximum memory is not listed?

Choose the option that is closest to the actual memory on your machine.

What if I make a mistake?

In the Windows GUI, you may press the **back** button to fix any user-input errors until you get the product is being installed (Installation page).

In the Console, exit the Installer by pressing CTRL-C and run it again.

Can I configure multiple Scan Servers using the Installer?

Yes, you may use the Installer to configure multiple scan servers by running "Install Set 2 – Core" on the core server and running "Install Set 3 – Scanner" on each scan server. When you are done, manually edit core.properties to list every scan server.