

CWE WEAKNESS IDS MAPPED TO CODESONAR® 8.0 C# WARNING CLASSES

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INTRODUCTION

The Common Weakness Enumeration (CWE™) is a list of software weakness types. Creating the list is a community initiative aimed at creating specific and succinct definitions for each common weakness type.

Every CodeSonar 8.0 warning report includes the numbers of any CWE weakness IDs that are closely mapped to the warning's class. (The close mapping for a warning class is the set of categories—including CWE weakness IDs—that most closely match the class, if any).

You can configure CodeSonar to enable and disable warning classes mapped to specific CWE weakness IDs, or use build presets to enable all warning classes that are closely mapped to any CWE weakness IDs. In addition, you can use the CodeSonar search function to find warnings related to specific CWE weakness IDs.

CodeSonar 8.0 is using CWE v4.12, released June 29, 2023.

For more information on Common Weakness Enumeration:

<https://cwe.mitre.org/data/index.html>

The remainder of this document comprises two tables:

- A table showing the close mapping between CodeSonar C and C++ warning classes and CWE weakness IDs.
- A table showing the broad mapping between CodeSonar C and C++ warning classes and CWE weakness IDs. The broad CWE mapping for a CodeSonar warning class combines CWE weakness IDs from four sources:
 1. The close CWE mapping for the class.
 2. Other CWE weakness IDs that are related to the class in a meaningful way, but not eligible for the close mapping.
 3. For all CWE weakness IDs from sources 1 and 2, all *ancestors* in the CWE hierarchy.
 4. For all CWE weakness IDs from sources 1 and 2, all *descendants* in the CWE hierarchy.
 A separate document, [CWE Weakness IDs Mapped to CodeSonar® Java Warning Classes](#), lists the CodeSonar Java warning classes that are closely and broadly mapped to CWE weakness IDs.

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CWE CLOSE MAPPING: C# (CODESONAR V8.0)

The following table lists the CodeSonar C# warning classes that are closely mapped to CWE weakness IDs.

Category ID	Category Name	CodeSonar Class Name
CWE:20	Improper Input Validation	Disabled Input Validation (C#)
CWE:22	Improper Limitation of a Pathname to a Restricted Directory ('Path Traversal')	Tainted Path (C#)
CWE:74	Improper Neutralization of Special Elements in Output Used by a Downstream Component ('Injection')	DLL Injection (C#) DOS Injection (C#) Tainted Control (C#) Tainted Hardware Device Property (C#) Tainted Network Address (C#) Tainted Resource (C#) Tainted URL (C#) Tainted XAML (C#) Tainted XML (C#)
CWE:78	Improper Neutralization of Special Elements used in an OS Command ('OS Command Injection')	Command Injection (C#)
CWE:79	Improper Neutralization of Input During Web Page Generation ('Cross-site Scripting')	Cross Site Scripting (C#) Cross Site Scripting In Error Message Web Page (C#)
CWE: 81	Improper Neutralization of Script in an Error Message Web Page	Cross Site Scripting (C#)
CWE:89	Improper Neutralization of Special Elements used in an SQL Command ('SQL Injection')	SQL Injection (C#)
CWE:90	Improper Neutralization of Special Elements used in an LDAP Query ('LDAP Injection')	Tainted LDAP Attribute (C#) Tainted LDAP Filter (C#)
CWE:94	Improper Control of Generation of Code ('Code Injection')	Code Injection (C#) Cross Site Scripting In Error Message Web Page (C#)
CWE:95	Improper Neutralization of Directives in Dynamically Evaluated Code ('Eval Injection')	Tainted Expression Evaluation (C#)
CWE:113	Improper Neutralization of CRLF Sequences in HTTP Headers (HTTP Request/Response Splitting')	Tainted HTTP Response (C#)
CWE:114	Process Control	DLL Injection (C#)
CWE:117	Improper Output Neutralization for Logs	Tainted Log (C#)
CWE:134	Use of Externally-Controlled Format String	Format String Injection (Java)
CWE:190	Integer Overflow or Wraparound	Cast: int Computation to long (C#)
CWE:192	Integer Coercion Error	Cast: Integer to Floating Point (C#)
CWE:197	Numeric Truncation Error	Approximate e Constant (C#) Approximate pi Constant (C#)
CWE:252	Unchecked Return Value	Call Might Return Null (C#) Ignored Return Value (C#) Ignored Return Value for Pure Function (C#)
CWE:259	Use of Hard-coded Password	Hardcoded Password (C#)
CWE:287	Improper Authentication	Hostname in Condition (C#) Missing Authentication Annotation (C#)
CWE:319	Cleartext Transmission of Sensitive Information	Tainted Message (C#)
CWE:321	Use of Hard-coded Cryptographic Key	Hardcoded Cryptographic Key (C#)
CWE:325	Missing Cryptographic Step	Missing Required Cryptographic Step (C#)
CWE:326	Inadequate Encryption Strength	Insecure Key Derivation (C#)



CWE:327	Use of a Broken or Risky Cryptographic Algorithm	Cryptographic Algorithm with Risky Default Cipher (C#) Cryptographic Algorithm with Weak Cipher (C#) Deprecated Cryptography Provider (C#) Risky Cipher Algorithm (C#) Risky Cipher Field (C#) Risky Cryptographic Algorithm (C#) Risky Cryptographic Field (C#) Unsafe Base64 Encoding (C#)
CWE:328	Use of Weak Hash	Weak Hash Algorithm (C#) Weak Hash Algorithm Field (C#)
CWE:330	Use of Insufficiently Random Values	Hardcoded Random Seed (C#) Insecure Random Number Generator (C#) Legacy Random Generator (C#)
CWE:336	Same Seed in Pseudo-Random Number Generator (PRNG)	Use of Same Seed (C#)
CWE:338	Use of Cryptographically Weak Pseudo-Random Number Generator (PRNG)	Weak Cryptographic Value (C#)
CWE:390	Detection of Error Condition Without Action	Empty Exception Handler (C#)
CWE:395	Use of NullPointerException Catch to Detect NULL Pointer Dereference	Inappropriate Exception Handler (C#)
CWE:396	Declaration of Catch for Generic Exception	Generic Exception Handler (C#)
CWE:397	Declaration of Throws for Generic Exception	Broad Throws Clause (C#)
CWE:400	Uncontrolled Resource Consumption	Closeable Not Stored (C#)
CWE:412	Unrestricted Externally Accessible Lock	Synchronization on Interned String (C#)
CWE:413	Improper Resource Locking	Impossible Client Side Locking (C#) Synchronization on static (C#)
CWE:440	Expected Behavior Violation	toString on Array (C#)
CWE:456	Missing Initialization of a Variable	Field Never Written (C#) Lambda Parameter may be null (Java) Null Pointer Dereference (C#)
CWE:470	Use of Externally-Controlled Input to Select Classes or Code ('Unsafe Reflection')	Reflection Injection (C#)
CWE:476	NULL Pointer Dereference	Actual Parameter Element may be null (C#) Field Element may be null (deep) (C#) Field may be null (deep) (C#) Null Parameter Dereference (C#) Null Pointer Dereference (C#) Null Pointer Dereference (deep) (C#) Return Value may Contain null Element (C#) Return Value may be null (C#) Return null Array (C#) Unchecked Parameter Dereference (C#) Unchecked Parameter Dereference (deep) (C#) Unchecked Parameter Element Dereference (deep) (C#) null Passed to Method (deep) (C#) Method Should Not Return null (C#)
CWE:480	Use of Incorrect Operator	Bitwise AND on Boolean Constant (C#) Bitwise OR on Boolean Constant (C#) Inefficient Bitwise AND (C#) Inefficient Bitwise OR (C#) Should Use == Instead of equals() (C#)



CWE:481	Assigning instead of Comparing	Assignment in Conditional (C#)
CWE:486	Comparison of Classes by Name	Comparison to Class Names (C#)
CWE:489	Active Debug Code	Class Enables Debug Features (C#) Debug Call (C#) Method Enables Debug Features (C#)
CWE:491	Public cloneable() Method Without Final ('Object Hijack')	clone Non-cloneable (C#) clone Subclass of Non-clonable (C#) clone not final (C#)
CWE:501	Trust Boundary Violation	Tainted Bundle (C#) Tainted Session (C#)
CWE:522	Insufficiently Protected Credentials	Password in Property File (C#)
CWE:547	"Use of Hard-coded, Security-relevant Constants"	Hardcoded Filename (C#)
CWE:547 CWE:550	"Use of Hard-coded, Security-relevant Constants" Server-generated Error Message Containing Sensitive Information	Hardcoded IP Address (C#)
CWE:547 CWE:550 CWE:561	"Use of Hard-coded, Security-relevant Constants" Server-generated Error Message Containing Sensitive Information Dead Code	Exception Information Disclosure (C#) Unreachable Instruction (C#) Unused Class (C#) Unused Method (C#)
CWE:563	Assignment to Variable without Use	Unnecessary Field (C#) Unused Value: Actual Parameter (C#) Unused Value: Variable (C#) Unused Value: Write to Parameter (C#)
CWE:567	Unsynchronized Access to Shared Data in a Multithreaded Context	Missing synchronized Statement (C#) Unguarded Field (C#) Unguarded Parameter (C#) Useless volatile Modifier (C#)
CWE:570	Expression is Always False	Impossible reference comparison (Java) Instanceof Always False (C#) Redundant Condition (C#) equals Always Fails (C#)
CWE:571	Expression is Always True	Instanceof Always True (C#)
CWE:572	Call to Thread run() instead of start()	Synchronous Call to Thread Body (C#)
CWE:573	Improper Following of Specification by Caller	Missing Call to super (C#)
CWE:581	Object Model Violation: Just One of Equals and Hashcode Defined	Defines equals but not hashCode (C#) Defines hashCode but not equals (C#)
CWE:582	"Array Declared Public, Final, and Static"	Mutable Public Static Final Array (C#)
CWE:585	Empty Synchronized Block	Useless Synchronization (C#)
CWE:595	Comparison of Object References Instead of Object Contents	equals on Array (C#)
CWE:601	URL Redirection to Untrusted Site ('Open Redirect')	Tainted URL (C#) Open Redirect (C#)
CWE:607	Public Static Final Field References Mutable Object	Mutable Constant Field (C#) Mutable Enumeration (C#) Mutable Public Static Final Array (C#)
CWE:609	Double-Checked Locking	Double-Checked Locking (C#)
CWE:611	Improper Restriction of XML External Entity Reference	Insecure XSLT Execution (C#) Possible XML External Entity Reference (C#)
CWE:613	Insufficient Session Expiration	Unsafe Session Expiration Time (C#)
CWE:614	Sensitive Cookie in HTTPS Session Without 'Secure' Attribute	Insecure Cookie (C#)



CWE:624	Executable Regular Expression Error	Tainted Regular Expression (C#)
CWE:628	Function Call with Incorrectly Specified Arguments	Method Names Differ Only in Case (C#)
CWE:643	Improper Neutralization of Data within XPath Expressions ('XPath Injection')	Tainted Xpath (C#)
CWE:662	Improper Synchronization	Useless volatile Modifier (C#)
CWE:665	Improper Initialization	Useless Assignment (C#) Useless Assignment to Default (C#)
CWE:674	Uncontrolled Recursion	Potential Infinite Recursion (C#)
CWE:676	Use of Potentially Dangerous Function	Method Disables Security Setting (C#)
CWE:682	Incorrect Calculation	Abs on random (C#)
CWE:686	Function Call With Incorrect Argument Type	Non-overriding Method Signature (C#)
CWE:697	Incorrect Comparison	Asymmetric compareTo (C#) compareTo without equals (C#) compareTo/equals mismatch (C#)
CWE:698	Execution After Redirect (EAR)	Execution After Redirect (C#)
CWE:704	Incorrect Type Conversion or Cast	Risky Class Cast (C#) Risky array store (C#)
CWE:710	Improper Adherence to Coding Standards	Naming Style Violation (C#)
CWE:749	Exposed Dangerous Method or Function	Security Annotation Conflict (C#)
CWE:757	Selection of Less-Secure Algorithm During Negotiation ('Algorithm Downgrade')	Deprecated Transfer Protocol (C#)
CWE:768	Incorrect Short Circuit Evaluation	Bitwise AND on Boolean (C#) Bitwise OR on Boolean (C#)
CWE:789	Memory Allocation with Excessive Size Value	Tainted Allocation Size (C#)
CWE:820	Missing Synchronization	Unguarded Method (C#)
CWE:833	Deadlock	Blocking in Critical Section (C#)
CWE:909	Missing Initialization of Resource	Empty zip File Archived (C#)
CWE:913	Improper Control of Dynamically-Managed Code Resources	Deserializable Class (C#) Nonserializable Field (C#) Nonserializable Field Element (C#) Nonserializable Outer Class (C#)
CWE:915	Improperly Controlled Modification of Dynamically-Determined Object Attributes	Reflection Modifies Member Accessibility (C#)
CWE:916	Use of Password Hash With Insufficient Computational Effort	Inadequate Salt (C#)
CWE:922	Insecure Storage of Sensitive Information	Certificate Added to Root Store (C#)
CWE:1023	Incomplete Comparison with Missing Factors	Missing Equals Override (C#)
CWE:1024	Comparison of Incompatible Type	== Always Fails Because Types Always Different (C#)
CWE:1071	Empty Code Block	Empty Branch Statement (C#)
CWE:1076	Insufficient Adherence to Expected Conventions	compareTo in Non-Comparable Class (C#) equals Parameter Should Be Object (C#)
CWE:1077	Floating Point Comparison with Incorrect Operator	Floating Point Equality (C#)
CWE:1097	Persistent Storable Data Element without Associated Comparison Control Element	Non-Object compareTo Parameter (C#)
CWE:1126	Declaration of Variable with Unnecessarily Wide Scope	Unnecessary Field (C#)
CWE:1164	Irrelevant Code	Unused Object (C#) Field Never Read (C#) Useless Class Cast (C#) Static Field Assigned Non-Static (C#)



		Useless null Test (C#) Useless null Test of Field (C#) Useless null Test of Parameter (C#) Redundant Call for String Argument (C#) Unused Field (C#)
CWE:1176	Inefficient CPU Computation	Single-use Random Number Generator (C#)
CWE:1204	Generation of Weak Initialization Vector (IV)	Weak Initialization Vector Field (C#) Weak Initialization Vector Value (C#)
CWE:1339	Insufficient Precision or Accuracy of a Real Number	Approximate e Constant (C#) Approximate pi Constant (C#)
CWE:1390	Weak Authentication	Anonymous LDAP Authentication (C#)
CWE:1391	Use of Weak Credentials	Do not hard-code encryption key (C#)



CWE IDS BROADLY MAPPED TO ONE OR MORE CODESONAR C# WARNING CLASSES(CODESONAR V8.0)

The following table lists the CWE IDs that are broadly mapped to one or more CodeSonar C# warning classes.

CWE:19	CWE:20	CWE:22	CWE:73	CWE:74
CWE:77	CWE:78	CWE:79	CWE:81	CWE:89
CWE:90	CWE:91	CWE:93	CWE:94	CWE:95
CWE:113	CWE:114	CWE:116	CWE:117	CWE:133
CWE:134	CWE:136	CWE:137	CWE:189	CWE:190
CWE:192	CWE:197	CWE:199	CWE:200	CWE:209
CWE:221	CWE:227	CWE:252	CWE:253	CWE:254
CWE:255	CWE:259	CWE:265	CWE:284	CWE:287
CWE:310	CWE:311	CWE:319	CWE:320	CWE:321
CWE:325	CWE:326	CWE:327	CWE:328	CWE:330
CWE:335	CWE:336	CWE:338	CWE:344	CWE:361
CWE:388	CWE:389	CWE:390	CWE:392	CWE:395
CWE:396	CWE:397	CWE:398	CWE:399	CWE:400
CWE:404	CWE:405	CWE:411	CWE:412	CWE:413
CWE:435	CWE:436	CWE:438	CWE:440	CWE:456
CWE:465	CWE:470	CWE:471	CWE:476	CWE:477
CWE:480	CWE:481	CWE:485	CWE:486	CWE:489
CWE:491	CWE:501	CWE:522	CWE:547	CWE:550
CWE:557	CWE:561	CWE:563	CWE:567	CWE:569
CWE:570	CWE:571	CWE:572	CWE:573	CWE:581
CWE:582	CWE:585	CWE:595	CWE:597	CWE:601
CWE:607	CWE:609	CWE:610	CWE:611	CWE:613
CWE:614	CWE:624	CWE:628	CWE:629	CWE:635
CWE:642	CWE:643	CWE:657	CWE:662	CWE:664
CWE:665	CWE:666	CWE:667	CWE:668	CWE:670
CWE:671	CWE:672	CWE:674	CWE:676	CWE:681
CWE:682	CWE:684	CWE:686	CWE:690	CWE:691
CWE:693	CWE:697	CWE:698	CWE:699	CWE:700
CWE:703	CWE:704	CWE:705	CWE:706	CWE:707
CWE:710	CWE:711	CWE:712	CWE:713	CWE:714
CWE:715	CWE:717	CWE:718	CWE:719	CWE:720
CWE:722	CWE:723	CWE:724	CWE:725	CWE:726
CWE:727	CWE:728	CWE:729	CWE:730	CWE:731
CWE:734	CWE:735	CWE:736	CWE:737	CWE:738
CWE:739	CWE:740	CWE:741	CWE:742	CWE:743
CWE:744	CWE:745	CWE:746	CWE:747	CWE:748
CWE:749	CWE:750	CWE:751	CWE:752	CWE:753
CWE:754	CWE:755	CWE:757	CWE:768	CWE:770
CWE:771	CWE:772	CWE:789	CWE:798	CWE:800
CWE:801	CWE:802	CWE:803	CWE:808	CWE:809
CWE:810	CWE:811	CWE:812	CWE:813	CWE:815
CWE:816	CWE:818	CWE:819	CWE:820	CWE:821
CWE:833	CWE:834	CWE:840	CWE:844	CWE:845
CWE:846	CWE:847	CWE:848	CWE:849	CWE:850
CWE:851	CWE:852	CWE:853	CWE:854	CWE:855
CWE:857	CWE:858	CWE:859	CWE:861	CWE:864
CWE:865	CWE:866	CWE:867	CWE:868	CWE:871
CWE:872	CWE:873	CWE:874	CWE:875	CWE:876
CWE:877	CWE:878	CWE:879	CWE:880	CWE:882
CWE:883	CWE:884	CWE:885	CWE:886	CWE:887
CWE:888	CWE:889	CWE:890	CWE:892	CWE:893
CWE:894	CWE:895	CWE:896	CWE:897	CWE:898
CWE:899	CWE:900	CWE:902	CWE:903	CWE:905
CWE:906	CWE:907	CWE:909	CWE:913	CWE:915
CWE:916	CWE:922	CWE:928	CWE:929	CWE:930
CWE:931	CWE:932	CWE:933	CWE:934	CWE:938
CWE:943	CWE:944	CWE:947	CWE:950	CWE:951
CWE:957	CWE:958	CWE:959	CWE:960	CWE:961
CWE:962	CWE:963	CWE:966	CWE:971	CWE:975
CWE:977	CWE:978	CWE:980	CWE:981	CWE:982
CWE:983	CWE:984	CWE:985	CWE:986	CWE:987



CWE:989	CWE:990	CWE:991	CWE:992	CWE:994
CWE:997	CWE:998	CWE:1000	CWE:1001	CWE:1002
CWE:1003	CWE:1005	CWE:1006	CWE:1008	CWE:1009
CWE:1010	CWE:1011	CWE:1012	CWE:1013	CWE:1015
CWE:1016	CWE:1018	CWE:1019	CWE:1020	CWE:1023
CWE:1024	CWE:1025	CWE:1026	CWE:1027	CWE:1028
CWE:1029	CWE:1030	CWE:1031	CWE:1032	CWE:1033
CWE:1071	CWE:1076	CWE:1077	CWE:1078	CWE:1097
CWE:1126	CWE:1128	CWE:1129	CWE:1130	CWE:1131
CWE:1133	CWE:1134	CWE:1135	CWE:1136	CWE:1137
CWE:1139	CWE:1140	CWE:1141	CWE:1142	CWE:1143
CWE:1144	CWE:1145	CWE:1147	CWE:1148	CWE:1152
CWE:1154	CWE:1157	CWE:1158	CWE:1159	CWE:1161
CWE:1162	CWE:1163	CWE:1164	CWE:1165	CWE:1166
CWE:1167	CWE:1169	CWE:1170	CWE:1171	CWE:1176
CWE:1177	CWE:1178	CWE:1179	CWE:1180	CWE:1181
CWE:1182	CWE:1186	CWE:1194	CWE:1200	CWE:1204
CWE:1205	CWE:1207	CWE:1208	CWE:1210	CWE:1213
CWE:1217	CWE:1219	CWE:1228	CWE:1305	CWE:1306
CWE:1307	CWE:1308	CWE:1309	CWE:1337	CWE:1339
CWE:1340	CWE:1344	CWE:1345	CWE:1346	CWE:1347
CWE:1348	CWE:1349	CWE:1350	CWE:1353	CWE:1354
CWE:1355	CWE:1358	CWE:1359	CWE:1360	CWE:1361
CWE:1362	CWE:1363	CWE:1364	CWE:1366	CWE:1368
CWE:1369	CWE:1370	CWE:1371	CWE:1372	CWE:1375
CWE:1382	CWE:1383	CWE:1387	CWE:1390	CWE:1391
CWE:1396	CWE:1397	CWE:1398	CWE:1399	CWE:1400
CWE:1401	CWE:1402	CWE:1403	CWE:1404	CWE:1405
CWE:1406	CWE:1407	CWE:1408	CWE:1409	CWE:1410
CWE:1412	CWE:1413	CWE:1414	CWE:1415	CWE:1416
CWE:1417	CWE:1418	CWE:1425		

