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# Gestione delle Vulnerabilità

*Release 3.3.9.p3*

**Link.it**

**13 gen 2023**



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Le potenziali vulnerabilità sono gestite nel progetto GovWay in accordo a processi rigorosi e documentati. La segnalazione di una potenziale vulnerabilità può avvenire tramite diverse fonti:

- l'analisi delle librerie terza parte, descritta nella sezione `releaseProcessGovWay_thirdPartyDynamicAnalysis_ci`, rileva una vulnerabilità tramite il tool [OWASP Dependency-Check](#);
- i test di sicurezza, descritti nella sezione `releaseProcessGovWay_dynamicAnalysis_security`, rilevano un nuovo problema o una regressione;
- dagli utenti di GovWay tramite l'apertura di un [GovWay Issue](#).

Qualunque sia la provenienza, la segnalazione viene immediatamente analizzata al fine di verificare:

- se si tratta di un falso positivo e in tal case registrarlo come tale: *Falsi Positivi*;
- se si tratta di una vulnerabilità con un effettivo impatto sul software GovWay; in tal caso viene registrato un nuovo avviso di sicurezza ed avviato il processo di risoluzione, così come descritto nella sezione *Avvisi di Sicurezza*.



Avvisi di Sicurezza

Le vulnerabilità sono classificate per severità rispetto al CVSS 3.1 scoring system sintetizzato dalla tabella riportata nella figura Fig. 2.1.

Severity	Base Score Range
None	0.0
Low	0.1-3.9
Medium	4.0-6.9
High	7.0-8.9
Critical	9.0-10.0

Fig. 2.1: CVSS 3.1 scoring system

Tempi di Risoluzione

Le tempistiche di risoluzione delle vulnerabilità sono classificate rispetto alla loro severità e garantite per le versioni Enterprise del prodotto. Per la versione community i fix saranno applicati sulle prime versioni in rilascio. In caso di vulnerabilità molto impattanti saranno prodotte patch version immediate anche per le versioni community.

I tempi sono calcolati rispetto alla data di identificazione dell’impatto della vulnerabilità sul prodotto (true positive).

Tabella 2.1: Avvisi di Sicurezza: tempi di risoluzione

Severità (CSSS Score)	Tempistica	Fix Version
Critical (9.0-10.0)	10 giorni	Patch version
High (7.0-8.9)	20 giorni	Patch version

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Tabella 2.1 – continua dalla pagina precedente

Severità (CSSS Score)	Tempistica	Fix Version
Medium (4.0 - 6.9)	45 giorni	Patch o Minor version
Low (3.9 or below)	n.d.	A discrezione del progetto

**Elenco degli Avvisi**

Gli avvisi vengono classificati per anno di registrazione:

- *Avvisi di Sicurezza 2022*
- *Avvisi di Sicurezza 2021*

## 2.1 Avvisi di Sicurezza 2022

- *CVE-2022-46364*
- *CVE-2022-41915*
- *CVE-2021-37533*
- *CVE-2022-40150*
- *CVE-2022-[40152-40156]*
- *CVE-2022-31692*
- *CVE-2022-34169*
- *CVE-2021-44832*

### 2.1.1 CVE-2022-46364

Data: 2022-12-14

Severity: High

CVSS Score: 7.5 (CVSS:3.1/AV:N/AC:L/PR:N/UI:N/S:U/C:N/I:N/A:H)

Riferimenti: <https://nvd.nist.gov/vuln/detail/CVE-2022-46364>

Libreria: org.apache.cxf:cxf-core >= 3.5.0, < 3.5.5

**Descrizione**

A SSRF vulnerability in parsing the href attribute of XOP:Include in MTOM requests in versions of Apache CXF before 3.5.5 and 3.4.10 allows an attacker to perform SSRF style attacks on webservices that take at least one parameter of any type.

**GovWay**

Versione affette: <= 3.3.9.p3

Risoluzione: prima versione in rilascio



### 2.1.2 CVE-2022-41915

Data: 2022-12-14

Severity: Medium

CVSS Score: 6.5 (CVSS:3.1/AV:N/AC:L/PR:N/UI:N/S:U/C:L/I:L/A:N)

Riferimenti: <https://nvd.nist.gov/vuln/detail/CVE-2022-41915>

Libreria: io.netty.netty-codec < 4.1.86.Final

#### Descrizione

Netty project is an event-driven asynchronous network application framework. In versions prior to 4.1.86.Final, when calling *DefaultHttpHeaders.set* with an *\_iterator\_* of values, header value validation was not performed, allowing malicious header values in the iterator to perform HTTP Response Splitting. This issue has been patched in version 4.1.86.Final. Integrators can work around the issue by changing the *DefaultHttpHeaders.set(CharSequence, Iterator<?>)* call, into a *remove()* call, and call *add()* in a loop over the iterator of values.

#### GovWay

Versione affette: <= 3.3.9.p3

Risoluzione: prima versione in rilascio

### 2.1.3 CVE-2021-37533

Data: 2022-12-07

Severity: Medium

CVSS Score: 6.5 (CVSS:3.1/AV:N/AC:L/PR:N/UI:R/S:U/C:H/I:N/A:N)

Riferimenti: <https://nvd.nist.gov/vuln/detail/CVE-2021-37533>

Libreria: apache:commons\_net <= 3.8.0

#### Descrizione

Prior to Apache Commons Net 3.9.0, Net's FTP client trusts the host from PASV response by default. A malicious server can redirect the Commons Net code to use a different host, but the user has to connect to the malicious server in the first place. This may lead to leakage of information about services running on the private network of the client. The default in version 3.9.0 is now false to ignore such hosts, as cURL does. See <https://issues.apache.org/jira/browse/NET-711>.

#### GovWay

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**Nota:** GovWay non utilizza il codice che possiede la vulnerabilità.

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Versione affette: <= 3.3.9.p2

Risoluzione: 3.3.9.p3

## 2.1.4 CVE-2022-40150

Data: 2022-12-03

Severity: High

CVSS Score: 7.5 (CVSS:3.1/AV:N/AC:L/PR:N/UI:N/S:U/C:N/I:N/A:H)

Riferimenti: <https://nvd.nist.gov/vuln/detail/CVE-2022-40150>

Libreria: jettison\_project:jettison <= 1.5.1

### Descrizione

Those using Jettison to parse untrusted XML or JSON data may be vulnerable to Denial of Service attacks (DOS). If the parser is running on user supplied input, an attacker may supply content that causes the parser to crash by Out of memory. This effect may support a denial of service attack.

### GovWay

Versione affette: <= 3.3.9.p2

Risoluzione: 3.3.9.p3

## 2.1.5 CVE-2022-[40152-40156]

Data: 2022-10-28

Severity: High

CVSS Score: 7.5 (CVSS:3.1/AV:N/AC:L/PR:N/UI:N/S:U/C:N/I:N/A:H)

Riferimenti:

- <https://nvd.nist.gov/vuln/detail/CVE-2022-40152>
- <https://nvd.nist.gov/vuln/detail/CVE-2022-40153>
- <https://nvd.nist.gov/vuln/detail/CVE-2022-40154>
- <https://nvd.nist.gov/vuln/detail/CVE-2022-40155>
- <https://nvd.nist.gov/vuln/detail/CVE-2022-40156>

Libreria: com.fasterxml.woodstox:woodstox-core >= 6.0.0, < 6.4.0

### Descrizione

Those using Xstream to serialize XML data may be vulnerable to Denial of Service attacks (DOS). If the parser is running on user supplied input, an attacker may supply content that causes the parser to crash by stackoverflow. This effect may support a denial of service attack.

### GovWay

Versione affette: <= 3.3.8

Risoluzione: 3.3.9

## 2.1.6 CVE-2022-31692

Data: 2022-10-29

Severity: Critical

CVSS Score: 9.8 (CVSS:3.1/AV:N/AC:L/PR:N/UI:N/S:U/C:H/I:H/A:H)

Riferimenti: <https://nvd.nist.gov/vuln/detail/CVE-2022-31692>

Libreria: org.springframework.security:spring-security-core >= 5.7.0, < 5.7.5

### Descrizione

Spring Security, versions 5.7 prior to 5.7.5 and 5.6 prior to 5.6.9 could be susceptible to authorization rules bypass via forward or include dispatcher types. Specifically, an application is vulnerable when all of the following are true: The application expects that Spring Security applies security to forward and include dispatcher types. The application uses the AuthorizationFilter either manually or via the authorizeHttpRequests() method. The application configures the FilterChainProxy to apply to forward and/or include requests (e.g. spring.security.filter.dispatcher-types = request, error, async, forward, include). The application may forward or include the request to a higher privilege-secured endpoint. The application configures Spring Security to apply to every dispatcher type via authorizeHttpRequests().shouldFilterAllDispatcherTypes(true)

### GovWay

Versioni affette: <= 3.3.8

Risoluzione: 3.3.9

## 2.1.7 CVE-2022-34169

Data: 2022-10-27

Severity: High

CVSS Score: 7.5 (CVSS:3.1/AV:N/AC:L/PR:N/UI:N/S:U/C:N/I:H/A:N)

Riferimenti: <https://nvd.nist.gov/vuln/detail/CVE-2022-34169>

Libreria: xalan:xalan <= 2.7.2

### Descrizione

The Apache Xalan Java XSLT library is vulnerable to an integer truncation issue when processing malicious XSLT stylesheets. This can be used to corrupt Java class files generated by the internal XSLTC compiler and execute arbitrary Java bytecode. The Apache Xalan Java project is dormant and in the process of being retired. No future releases of Apache Xalan Java to address this issue are expected. Note: Java runtimes (such as OpenJDK) include repackaged copies of Xalan.

A fix for this issue was published in September 2022 as part of an anticipated 2.7.3 release.

### GovWay

Versioni affette: <= 3.3.8

Risoluzione: 3.3.9

## 2.1.8 CVE-2021-44832

Data: 2022-01-04

Severity: Medium

CVSS Score: 6.6 (CVSS:3.1/AV:N/AC:H/PR:H/UI:N/S:U/C:H/I:H/A:H)

Riferimenti: <https://nvd.nist.gov/vuln/detail/CVE-2021-44832>

Libreria: org.apache.logging.log4j:log4j-core <= 2.17.0

### Descrizione

Apache Log4j2 versions 2.0-beta7 through 2.17.0 (excluding security fix releases 2.3.2 and 2.12.4) are vulnerable to a remote code execution (RCE) attack when a configuration uses a JDBC Appender with a JNDI LDAP data source URI when an attacker has control of the target LDAP server. This issue is fixed by limiting JNDI data source names to the java protocol in Log4j2 versions 2.17.1, 2.12.4, and 2.3.2.

### GovWay

Versioni affette: <= 3.3.5.p2

Risoluzione: 3.3.6

## 2.2 Avvisi di Sicurezza 2021

- *CVE-2021-45105*
- *CVE-2021-45046*
- *CVE-2021-44228*

### 2.2.1 CVE-2021-45105

Data: 2021-12-20

Severity: Medium

CVSS Score: 5.9 (CVSS:3.1/AV:N/AC:H/PR:N/UI:N/S:U/C:N/I:N/A:H)

Riferimenti: <https://nvd.nist.gov/vuln/detail/CVE-2021-45105>

Libreria: org.apache.logging.log4j:log4j-core <= 2.16.0

### Descrizione

Apache Log4j2 versions 2.0-alpha1 through 2.16.0 (excluding 2.12.3 and 2.3.1) did not protect from uncontrolled recursion from self-referential lookups. This allows an attacker with control over Thread Context Map data to cause a denial of service when a crafted string is interpreted. This issue was fixed in Log4j 2.17.0, 2.12.3, and 2.3.1.

### GovWay

Versioni affette: <= 3.3.5.p2

Risoluzione: 3.3.6

## 2.2.2 CVE-2021-45046

Data: 2021-12-11

Severity: Critical

CVSS Score: 9.0 (CVSS:3.1/AV:N/AC:H/PR:N/UI:N/S:C/C:H/I:H/A:H)

Riferimenti: <https://nvd.nist.gov/vuln/detail/CVE-2021-45046>

Libreria: org.apache.logging.log4j:log4j-core <= 2.15.0

### Descrizione

It was found that the fix to address CVE-2021-44228 in Apache Log4j 2.15.0 was incomplete in certain non-default configurations. This could allow attackers with control over Thread Context Map (MDC) input data when the logging configuration uses a non-default Pattern Layout with either a Context Lookup (for example, `$$${ctx:loginId}`) or a Thread Context Map pattern (`%X`, `%mdc`, or `%MDC`) to craft malicious input data using a JNDI Lookup pattern resulting in an information leak and remote code execution in some environments and local code execution in all environments. Log4j 2.16.0 (Java 8) and 2.12.2 (Java 7) fix this issue by removing support for message lookup patterns and disabling JNDI functionality by default.

### GovWay

Versioni affette: <= 3.3.5.p1

Risoluzione: 3.3.5.p2

## 2.2.3 CVE-2021-44228

Data: 2021-12-07

Severity: Critical

CVSS Score: 10.0 (CVSS:3.1/AV:N/AC:L/PR:N/UI:N/S:C/C:H/I:H/A:H)

Riferimenti: <https://nvd.nist.gov/vuln/detail/CVE-2021-44228>

Libreria: org.apache.logging.log4j:log4j-core <= 2.14.1

### Descrizione

Apache Log4j 2.0-beta9 through 2.15.0 (excluding security releases 2.12.2, 2.12.3, and 2.3.1) JNDI features used in configuration, log messages, and parameters do not protect against attacker controlled LDAP and other JNDI related endpoints. An attacker who can control log messages or log message parameters can execute arbitrary code loaded from LDAP servers when message lookup substitution is enabled. From log4j 2.15.0, this behavior has been disabled by default. From version 2.16.0 (along with 2.12.2, 2.12.3, and 2.3.1), this functionality has been completely removed. Note that this vulnerability is specific to log4j-core and does not affect log4net, log4cxx, or other Apache Logging Services projects.

### GovWay

Versioni affette: <= 3.3.5

Risoluzione: 3.3.5.p1



- *CVE-2020-5408*
- *CVE-2022-0869*
- *CVE-2022-[38752,41854,1471,3064] CVE-2021-4235*
- *CVE-2017-10355*
- *CVE-2016-1000027*

### 3.1 CVE-2020-5408

Data: 2022-11-14

Severity: Medium

CVSS Score: 6.5 (CVSS:3.1/AV:N/AC:L/PR:N/UI:R/S:C/C:L/I:L/A:N)

Riferimenti: <https://nvd.nist.gov/vuln/detail/CVE-2020-5408>

Libreria: org.springframework.security:spring-security-crypto <= 5.3.2

#### Descrizione

Spring Security versions 5.3.x prior to 5.3.2, 5.2.x prior to 5.2.4, 5.1.x prior to 5.1.10, 5.0.x prior to 5.0.16 and 4.2.x prior to 4.2.16 use a fixed null initialization vector with CBC Mode in the implementation of the queryable text encryptor. A malicious user with access to the data that has been encrypted using such an encryptor may be able to derive the unencrypted values using a dictionary attack.

#### Falso Positivo per GovWay

La versione utilizzata in GovWay è superiore alla “5.3.2” quindi la segnalazione è considerabile un falso positivo.

Dalle discussioni degli issues 287 e 284 del repository “OSSIndex” si possono comprendere i motivi della segnalazione: nelle versioni precedenti alla 6.x spring-security ha solamente deprecato l'utilizzo degli oggetti vulnerabili. Nel progetto GovWay comunque il metodo oggetto della vulnerabilità ( Encryptors#queryableText(CharSequence, CharSequence) ) non viene utilizzato.

Configuration File: [false-positive.xml](#)

## 3.2 CVE-2022-0869

Data: 2022-11-14

Severity: Medium

CVSS Score: 6.1 (CVSS:3.1/AV:N/AC:L/PR:N/UI:R/S:C/C:L/I:L/A:N)

Riferimenti: <https://nvd.nist.gov/vuln/detail/CVE-2022-0869>

Libreria: commons-discovery:commons-discovery 0.5

### Descrizione

Multiple Open Redirect in GitHub repository nitely/spirit prior to 0.12.3.

### Falso Positivo per GovWay

Non risultano vulnerabilità note relative alla libreria commons-discovery ([verifica effettuata tramite sonatype](#)).

Viene descritto come un falso positivo anche nell'issuer [Issue 4644](#) del plugin OWASP Dependency-Check.

Configuration File: [false-positive.xml](#)

## 3.3 CVE-2022-[38752,41854,1471,3064] CVE-2021-4235

Data: 2022-10-10

Severity: High/Medium

CVSS Score: 7.5, 6.5 (CVSS:3.1/AV:N/AC:L/PR:L/UI:N/S:U/C:N/I:N/A:H)

Riferimenti:

- <https://nvd.nist.gov/vuln/detail/CVE-2022-38752>
- <https://nvd.nist.gov/vuln/detail/CVE-2022-41854>
- <https://nvd.nist.gov/vuln/detail/CVE-2022-1471>
- <https://nvd.nist.gov/vuln/detail/CVE-2022-3064>
- <https://nvd.nist.gov/vuln/detail/CVE-2021-4235>

Libreria: org.yaml:snakeyaml 1.33

### Descrizione

- CVE-2022-38752: Using snakeYAML to parse untrusted YAML files may be vulnerable to Denial of Service attacks (DOS). If the parser is running on user supplied input, an attacker may supply content that causes the parser to crash by stack-overflow.
- CVE-2022-41854: Those using Snakeyaml to parse untrusted YAML files may be vulnerable to Denial of Service attacks (DOS). If the parser is running on user supplied input, an attacker may supply content that causes the parser to crash by stack overflow. This effect may support a denial of service attack.
- CVE-2022-1471: SnakeYaml's Constructor() class does not restrict types which can be instantiated during deserialization. Deserializing yaml content provided by an attacker can lead to remote code execution. We recommend using SnakeYaml's SafeConstructor when parsing untrusted content to restrict deserialization.



- CVE-2022-3064: Parsing malicious or large YAML documents can consume excessive amounts of CPU or memory.
- CVE-2021-4235: Due to unbounded alias chasing, a maliciously crafted YAML file can cause the system to consume significant system resources. If parsing user input, this may be used as a denial of service vector.

#### Falso Positivo per GovWay

Le vulnerabilità non sono sfruttabili su GovWay per effettuare attacchi poichè la libreria viene utilizzata solamente per la gestione delle interfacce yaml caricate sulla console dagli amministratori e non viene utilizzata per input forniti dinamicamente nelle richieste gestite dai componenti di runtime.

Configuration File: [false-positive.xml](#)

## 3.4 CVE-2017-10355

Data: 2022-08-14

Severity: Medium

CVSS Score: 5.3 (CVSS:3.1/AV:N/AC:L/PR:N/UI:N/S:U/C:N/I:N/A:L)

Riferimenti: <https://nvd.nist.gov/vuln/detail/CVE-2017-10355>

Libreria: xerces:xercesImpl 2.12.2

#### Descrizione

Vulnerability in the Java SE, Java SE Embedded, JRockit component of Oracle Java SE (subcomponent: Networking). Supported versions that are affected are Java SE: 6u161, 7u151, 8u144 and 9; Java SE Embedded: 8u144; JRockit: R28.3.15. Easily exploitable vulnerability allows unauthenticated attacker with network access via multiple protocols to compromise Java SE, Java SE Embedded, JRockit. Successful attacks of this vulnerability can result in unauthorized ability to cause a partial denial of service (partial DOS) of Java SE, Java SE Embedded, JRockit. Note: This vulnerability can be exploited through sandboxed Java Web Start applications and sandboxed Java applets. It can also be exploited by supplying data to APIs in the specified Component without using sandboxed Java Web Start applications or sandboxed Java applets, such as through a web service. CVSS 3.0 Base Score 5.3 (Availability impacts). CVSS Vector: (CVSS:3.0/AV:N/AC:L/PR:N/UI:N/S:U/C:N/I:N/A:L).

#### Falso Positivo per GovWay

La vulnerabilità “CVE-2017-10355” è oggetto di discussione e aperture di segnalazioni poichè non presente nel database [nvd.nist.gov](https://nvd.nist.gov) ma invece rilevata da Sonatype OSSIndex come si evince dalle discussioni degli issues [4614](#) e [316](#): «the intelligence that this CVE (still) applies to version 2.12.2 comes from the security analysts of Sonatype OSSINDEX, not from the NVD datastreams».

In particolare la vulnerabilità [sonatype-2017-0348](#) non ha poi una evidenza nel blog esistente (il link <https://blogs.securiteam.com/index.php/archives/3271> non esiste). Il contenuto del blog può essere recuperato esaminando l’issue [4614](#) nel quale sembra che la problematica rilevata fosse sul metodo `XMLEntityManager.setupCurrentEntity()` che non dispone di un meccanismo di timeout; il metodo non viene utilizzato su GovWay.

Nella discussione si fa inoltre riferimento alla vulnerabilità descritta in [SNYK-JAVA-XERCES-31497](#) che consentiva di attuare attacchi DOS. Nel progetto GovWay è comunque corretto considerarlo un falso positivo poichè la libreria viene utilizzata per espressioni xpath configurate solamente sulla console dagli amministratori e non fornite in input dinamicamente nelle richieste gestite dai componenti runtime. Infine su GovWay è disabilitato l’accesso a risorse esterne (`DTDs.enabled=false`).

Configuration File: [false-positive.xml](#)

## 3.5 CVE-2016-1000027

Data: 2022-08-10

Severity: Critical

CVSS Score: 9.8 (CVSS:3.1/AV:N/AC:L/PR:N/UI:N/S:U/C:H/I:H/A:H)

Riferimenti: <https://nvd.nist.gov/vuln/detail/CVE-2016-1000027>

Libreria: org.springframework:spring-web <= 5.3.16

### Descrizione

Pivotal Spring Framework through 5.3.16 suffers from a potential remote code execution (RCE) issue if used for Java deserialization of untrusted data. Depending on how the library is implemented within a product, this issue may or not occur, and authentication may be required. NOTE: the vendor's position is that untrusted data is not an intended use case. The product's behavior will not be changed because some users rely on deserialization of trusted data.

### Falso Positivo per GovWay

La versione della libreria utilizzata in GovWay è superiore alla "5.3.16" quindi la segnalazione è considerabile un falso positivo.

Dalle discussioni degli issues [4849](#) e [4558](#) del plugin OWASP Dependency-Check si possono comprendere i motivi della segnalazione: nelle versioni precedenti alla 6.x spring ha solamente deprecato l'utilizzo degli oggetti vulnerabili. Nel progetto GovWay comunque la classe oggetto della vulnerabilità (remoting-httpinvoker) non viene utilizzata.

Configuration File: [false-positive.xml](#)