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## Open-Xchange Security Advisory 2022-07-21

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*From:* Martin Heiland via Fulldisclosure <fulldisclosure () seclists org>

*Date:* Thu, 21 Jul 2022 11:04:12 +0200 (CEST)

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Dear subscribers,

we're sharing our latest advisory with you and like to thank everyone who contributed in finding and solving those vulnerabilities. Feel free to join our bug bounty programs for OX AppSuite, Dovecot and PowerDNS at HackerOne.

Yours sincerely,  
Martin Heiland, Open-Xchange GmbH

Product: OX App Suite  
Vendor: OX Software GmbH

Internal reference: DOCS-4106  
Vulnerability type: OS Command Injection (CWE-78)  
Vulnerable version: 7.10.6 and earlier  
Vulnerable component: documentconverter  
Report confidence: Confirmed  
Solution status: Fixed by Vendor  
Fixed version: 7.8.4-rev13, 7.10.3-rev6, 7.10.4-rev6, 7.10.5-rev5, 7.10.6-rev3  
Vendor notification: 2022-01-10  
Solution date: 2022-01-13  
Public disclosure: 2022-07-21  
CVE reference: CVE-2022-23100  
CVSS: 8.2 (CVSS:3.1/AV:A/AC:H/PR:N/UI:N/S:C/C:H/I:H/A:L)

### Vulnerability Details:

OX Documentconverter has a Remote Code Execution flaw that allows authenticated OX App Suite users to run commands on the instance which runs OX Documentconverter if they have the ability to perform document conversions, for example of E-Mail attachments or OX Drive content.

### Risk:

Attackers can inject arbitrary operating-system level commands via OX App Suite API and/or OX Documentconverter API. Commands are executed on the instance running OX Documentconverter, based on "open-xchange"

user privileges. This can be used to modify or exfiltrate configuration files as well as adversely affect the instances availability by excessive resource usage. By default the vulnerable Documentconverter API is not publicly accessible, however this might be worked around by abusing other weaknesses, configuration flaws or social engineering.

Steps to reproduce:

1. Create a forged Documentconverter API call that embeds escape characters and a system command
2. Inject the malicious API call via App Suite as a proxy or other means

Solution:

We reduced available API parameters to a limited set of enumerations, rather than accepting API input.

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Internal reference: MWB-1350  
Vulnerability type: Cross-Site Scripting (CWE-80)  
Vulnerable version: 7.10.6 and earlier  
Vulnerable component: backend  
Report confidence: Confirmed  
Solution status: Fixed by Vendor  
Fixed version: 7.8.4-rev78, 7.10.3-rev38, 7.10.4-rev31, 7.10.5-rev37, 7.10.6-rev9  
Vendor notification: 2021-11-30  
Solution date: 2022-02-15  
Public disclosure: 2022-07-21  
CVE reference: CVE-2022-23099  
CVSS: 3.5 (CVSS:3.1/AV:N/AC:L/PR:L/UI:R/S:U/C:L/I:N/A:N)

Vulnerability Details:

Existing sanitization and filtering mechanisms for HTML files can be bypassed by forcing block-wise read. Using this technique, the recognition procedure misses to detect tags and attributes that span multiple blocks.

Risk:

Malicious script code can be executed within a users context. This can lead to session hijacking or triggering unwanted actions via the web interface (e.g. redirecting to a third-party site). To exploit this an attacker would require the victim to follow a hyperlink.

Steps to reproduce:

1. As attacker, create a HTML malicious code-snippet which masks tags (e.g. <script>) by block boundaries
2. Upload the code snippet to drive and create a sharing link
3. Sent that link to a victim and make it follow it

Solution:

We now check for possible HTML content through overlapping reads from data streams.

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Internal reference: MWB-1366  
Vulnerability type: n/a

Vulnerable version: 7.10.6 and earlier  
Vulnerable component: middleware  
Report confidence: Confirmed  
Solution status: Fixed by Vendor  
Fixed version: 7.8.4-rev78, 7.10.3-rev38, 7.10.4-rev31, 7.10.5-rev38, 7.10.6-rev9  
Vendor notification: 2021-12-10  
Solution date: 2022-02-15  
Public disclosure: 2022-07-21  
CVE reference: CVE-2021-42550  
CVSS: n/a

**Vulnerability Details:**

In the wake of the CVE-2021-44228 (Log4Shell) issue, a similar potential vulnerability at the Logback library has been identified (LOGBACK-1591, CVE-2021-42550). At its default configuration, OX App Suite is not susceptible to this vulnerability and there are no scenarios that require to deploy a vulnerable configuration.

**Risk:**

We provide this update strictly as a precaution to mitigate the possibility of a vulnerability. Exploiting CVE-2021-42550 at this point would require privileged access to alter system configuration.

**Steps to reproduce:**

1. n/a

**Solution:**

We provided a component update to Logback 1.2.8 and slf4j 1.7.32.

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Internal reference: OXUIB-1172  
Vulnerability type: Cross-Site Scripting (CWE-80)  
Vulnerable version: 7.10.5 and earlier  
Vulnerable component: frontend  
Report confidence: Confirmed  
Solution status: Fixed by Vendor  
Fixed version: 7.8.4-rev69, 7.10.3-rev31, 7.10.4-rev28, 7.10.5-rev30  
Vendor notification: 2021-11-30  
Solution date: 2022-02-15  
Public disclosure: 2022-07-21  
CVE reference: CVE-2022-23101  
CVSS: 4.3 (CVSS:3.1/AV:N/AC:L/PR:N/UI:R/S:U/C:L/I:N/A:N)

**Vulnerability Details:**

Deep-links within E-Mail (e.g. links to Drive files) are not checked for malicious use of the appHandler function (see CVE-2021-38374) and may therefore be used to inject references to malicious code.

**Risk:**

Malicious script code can be executed within a users context. This can lead to session hijacking or triggering unwanted actions via the web interface (e.g. redirecting to a third-party site). To exploit this an attacker would require to forge App Suite specific mails and force the victim to follow a hyperlink.

**Steps to reproduce:**

1. As an attacker, create a malicious E-Mail that uses App Suite "Deep-links" as mail header and embed a call to the AppLoader component
2. Deliver the mail and make the victim open the link

Proof of concept:

X-Open-Xchange-Share-URL:

<https://example.com/#!/&app=%2e./%2e./%2e./%2e./%2e./%2e./appsuite/drive/script.js?cut=&id=123>

Solution:

We now check for a enumeration of valid applications for deep-links as well.

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Internal reference: DOCS-4161

Vulnerability type: OS Command Injection (CWE-78)

Vulnerable version: 7.10.6 and earlier

Vulnerable component: documentconverter

Report confidence: Confirmed

Solution status: Fixed by Vendor

Fixed version: 7.8.4-rev14, 7.10.3-rev7, 7.10.4-rev7, 7.10.5-rev6, 7.10.6-rev3

Vendor notification: 2022-01-24

Solution date: 2022-02-15

Public disclosure: 2022-07-21

CVE reference: CVE-2022-24405

CVSS: 7.3 (CVSS:3.1/AV:A/AC:H/PR:H/UI:N/S:C/C:H/I:H/A:N)

Vulnerability Details:

The compatibility layer of documentconverter API processes serialized Java classes when using remote cache calls. This can be exploited to inject malicious code that is being executed in the context of the documentconverter component.

Risk:

Attackers can inject arbitrary operating-system level commands via the OX Documentconverter API. Commands are executed on the instance running OX Documentconverter, based on "open-xchange" user privileges. This can be used to modify or exfiltrate configuration files as well as adversely affect the instances availability by excessive resource usage. By default the vulnerable OX Documentconverter API is not publicly accessible and we are not aware that this could have been exploited without privileged network or system access.

Steps to reproduce:

1. Create a malicious Java class and serialize it
2. Use the OX Documentconverter API to inject this class as a reference/hash to remote caches

Solution:

We now apply input sanitization to this API call and restrict it to strings. We also implemented a set of additional hardening procedures for other API calls which work in a similar way.

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Internal reference: DOCS-4120

Vulnerability type: Server-Side Request Forgery (CWE-918)

Vulnerable version: 7.10.6 and earlier

Vulnerable component: documentconverter-api

Report confidence: Confirmed  
Solution status: Fixed by Vendor  
Fixed version: 7.8.4-rev10, 7.10.3-rev5, 7.10.4-rev6, 7.10.5-rev6, 7.10.6-rev3  
Vendor notification: 2022-01-10  
Solution date: 2022-02-15  
Public disclosure: 2022-07-21  
CVE reference: CVE-2022-24406  
CVSS: 6.4 (CVSS:3.1/AV:N/AC:L/PR:L/UI:N/S:C/C:L/I:L/A:N)

#### Vulnerability Details:

By creating collisions of HTTP multipart-formdata boundaries it is possible to alter the API request parameters between OX App Suite and OX Documentconverter. Legitimate multipart-formdata boundaries are created based on a timestamp with millisecond resolution. This allows attackers to predict the next boundary and attempt to overwrite its content. The most practical way to exploit this is sending a large number of formdata parts, each with a unique boundary based on a future point in time.

#### Risk:

Attackers can modify parameters of internal API calls to OX Documentconverter and by that circumvent network trust boundaries. In effect, a server-side request forgery attack is possible, for example to exploit DOCS-4106 (CVE-2022-23100) with limited privileges using OX App Suite API as a "proxy".

#### Steps to reproduce:

1. Create a HTTP request with multipart-formdata boundaries representing timestamps in the near future
2. Add internal API parameters to those multipart-formdata sections and use them as requests to OX App Suite API

#### Solution:

We modified the algorithm to create multipart-formdata boundaries in a way that they are no longer predictable. We also restricted the number of multipart-formdata parts to a sensible amount and issue an Exception if a client exceeds it.

**Attachment:** [signature.asc](#)

*Description:*

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