RBS-2019-006

UNETsystem SecureSession ActiveX Control
Multiple Methods Handling Buffer Overflows
Vulnerable Program Details

Details for tested products and versions:

Vendor: UNETsystem
Product: SecureSession ActiveX Control (SecuiSFNCOMIE.dll)
Version: 4.5.5.11

NOTE: Other versions than the one listed above are likely affected.

Credits

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Impact

The SecureSession ActiveX control (SecuiSFNCOMIE.dll) contains multiple buffer overflows that may allow an attacker to compromise a user’s system.

Vulnerability Details

Multiple Methods Heap Buffer Overflow

The ActiveX control provides three methods, EncipherHS2(), DecipherHS2(), and GenerateHS2(), which are defined as follows:

```c
[id(0x0000001c), helpstring("method EncipherHS2")]
BSTR EncipherHS2(
    [in] BSTR bstrSource,
    [in] BSTR bstrHS,
    [in] BSTR bstrSession);

[id(0x0000001d), helpstring("method DecipherHS2")]
BSTR DecipherHS2(
    [in] BSTR bstrSource,
    [in] BSTR bstrHS,
    [in] BSTR bstrSession);

[id(0x0000001b), helpstring("method GenerateHS2")]
int GenerateHS2(
    [in] BSTR bstrEncAlgo,
```
The argument of particular interest to this vulnerability is "bstrSession".

When either of these three methods are called, the corresponding functions in SecuSFCOMIE.dll eventually call a function to process the two last arguments passed to the methods. The function first checks that "http" is present in the string supplied as the "bstrHS" argument (or "bstrURL" for the GenerateHS2() method).

The length of the URL is then checked to ensure that it's not longer than 1024 characters.

If the check succeeds, the supplied "bstrHS" / "bstrURL" and "bstrSession" arguments are copied to an object on the heap via calls to strcpy().
As no bounds checks were performed for the “bstrSession” argument, this may lead to a heap-based buffer overflow.

**DestroySession2() Method Stack Buffer Overflow**

The DestroySession2() method accepts a single argument and is defined as follows:

```c
[id(0x0000000d), helpstring("method DestroySession2")]
int DestroySession2([in] BSTR bstrHSURL);
```

When the method is called, the corresponding function in SecuiSFNCOMIE.dll performs various inconsequential processing before eventually copying the supplied “bstrHSURL” argument to a 1024 byte stack buffer via a strcpy() call.

As no bounds checks are performed this may lead to a stack-based buffer overflow.

**CheckExistKey() Method Stack Buffer Overflow**

The CheckExistKey() method accepts a single argument and is defined as follows:

```c
[id(0x0000000c), helpstring("method CheckExistKey")]
int CheckExistKey([in] BSTR bstrHSURL);
```

When the method is called, the corresponding function in SecuiSFNCOMIE.dll performs various inconsequential processing before eventually copying the supplied “bstrHSURL” argument to a 1024 byte stack buffer via a strcpy() call.
As no bounds checks are performed this may lead to a stack-based buffer overflow.

**Solution**

The vendor has deprecated the ActiveX control, and KrCERT/CC plans to set the kill-bit.

**References**

RBS: RBS-2019-006¹
VulnDB: 202018, 202019, 202020

**Timeline**

2019-01-28 Vulnerabilities discovered.
2019-02-01 Vulnerabilities reported to KrCERT/CC.
2019-04-04 Alerts published to VulnDB customers.
2019-05-21 Publication of this vulnerability report.

About Risk Based Security

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