

## Talos Vulnerability Report

TALOS-2020-1207

### OpenClinic GA web portal multiple SQL injection vulnerabilities in the 'getAssets.jsp' page

APRIL 13, 2021

#### CVE NUMBER

CVE-2020-27233, CVE-2020-27234, CVE-2020-27235, CVE-2020-27236, CVE-2020-27237, CVE-2020-27238, CVE-2020-27239, CVE-2020-27240, CVE-2020-27241

#### Summary

Multiple exploitable SQL injection vulnerabilities exists in 'getAssets.jsp' page of OpenClinic GA 5.173.3. A specially crafted HTTP request can lead to SQL injection. An attacker can make an authenticated HTTP request to trigger this vulnerability.

#### Tested Versions

OpenClinic GA 5.173.3

#### Product URLs

<https://sourceforge.net/projects/open-clinic/>

#### CVSSv3 Score

6.4 - CVSS:3.0/AV:N/AC:L/PR:L/UI:N/S:C/C:L/I:L/A:N

#### CWE

CWE-89 - Improper Neutralization of Special Elements used in an SQL Command ('SQL Injection')

#### Details

OpenClinic GA is an open source fully integrated hospital management solution.

Multiple SQL injections exist in the due to a lack of filtering applied in the 'getAssets.jsp' source file and underlying 'be.Asset.Asset.java' Java class when input parameters are used to create Asset object as seen below:

```
Asset findObject = new Asset();
findObject.code = sCode;
findObject.nomenclature = sNomenclatureCode;
findObject.description = sDescription;
findObject.serialnumber = sSerialnumber;
findObject.comment9 = sAssetStatus;
findObject.supplierUid = sSupplierUID;
findObject.serviceuid = sServiceUid;
findObject.comment15=sCompNomenclatureCode;
findObject.comment16=sComponentStatus;

if(sPurchasePeriodBegin.length() > 0){
    findObject.purchasePeriodBegin = ScreenHelper.parseDate(sPurchasePeriodBegin);
}

if(sPurchasePeriodEnd.length() > 0){
    findObject.purchasePeriodEnd = ScreenHelper.parseDate(sPurchasePeriodEnd);
}

List assets = Asset.getList(findObject);
String sReturn = "";
```

After above object is construct the SQL query is created and, eventually, executed as seen below:

```
[...]
if (findItem.code.length() > 0) {
    sSql = sSql + " AND (OC_ASSET_CODE = '" + findItem.code + "' or OC_ASSET_SERVERID||'.'||OC_ASSET_OBJECTID = '" + findItem.code + "')";
}
if (ScreenHelper.checkString(findItem.description).length() > 0) {
    sSql = sSql + " AND OC_ASSET_DESCRIPTION LIKE '%" + findItem.description + "%'";
}
if (ScreenHelper.checkString(findItem.serviceuid).length() > 0) {
    sSql = sSql + " AND OC_ASSET_SERVICE LIKE '" + findItem.serviceuid + "%'";
}
if (ScreenHelper.checkString(findItem.serialnumber).length() > 0) {
    sSql = sSql + " AND OC_ASSET_SERIAL LIKE '%" + findItem.serialnumber + "%'";
}
if (ScreenHelper.checkString(findItem.assetType).length() > 0) {
    sSql = sSql + " AND OC_ASSET_TYPE = '" + findItem.assetType + "'";
}
if (ScreenHelper.checkString(findItem.comment9).length() > 0) {
    sSql = sSql + " AND OC_ASSET_COMMENT9 = '" + findItem.comment9 + "'";
}
if (ScreenHelper.checkString(findItem.nomenclature).length() > 0) {
    sSql = sSql + " AND OC_ASSET_NOMENCLATURE LIKE '" + findItem.nomenclature + "%'";
}
if (ScreenHelper.checkString(findItem.nomenclature).length() > 0) {
    sSql = sSql + " AND OC_ASSET_NOMENCLATURE LIKE '" + findItem.nomenclature + "%'";
}
if (ScreenHelper.checkString(findItem.comment15).length() > 0) {
    sSql = sSql + " AND OC_ASSET_COMMENT15 LIKE '%" + findItem.comment15 + "%'";
}
if (ScreenHelper.checkString(findItem.comment16).length() > 0) {
    sSql = sSql + " AND EXISTS (select * from OC_ASSETCOMPONENTS where OC_COMPONENT_ASSETUID=OC_ASSET_SERVERID||'.'||OC_ASSET_OBJECTID and
OC_COMPONENT_NOMENCLATURE like '" + (ScreenHelper.checkString(findItem.comment15).length() == 0 ? "%" : findItem.comment15) + "' and
OC_COMPONENT_STATUS='" + findItem.comment16 + "')";
}
if (ScreenHelper.checkString(findItem.supplierUid).length() > 0) {
    sSql = sSql + " AND OC_ASSET_SUPPLIERUID like '%" + findItem.supplierUid + "%'";
}
[...]
```

#### CVE-2020-27233 - SQLInjection in the supplierUID parameter

The supplierUID parameter in the getAssets.jsp page is vulnerable to unauthenticated SQL injection. The following request would trigger the vulnerability:

```
GET /openclinic/assets/ajax/asset/getAssets.jsp?
ts=1603998759824&code=&nomenclature=&compnomenclature=y&description=&showinactive=false&serviceuid=&serialnumber=&assetStatus=&componentStat
us=&supplierUID=<SQLINJECTION>&purchasePeriodBegin=&skip=0&purchasePeriodEnd= HTTP/1.1
Host: [IP]:10080
Accept: text/javascript, text/html, application/xml, text/xml, */*
X-Prototype-Version: 1.7.3
X-Requested-With: XMLHttpRequest
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/86.0.4240.111 Safari/537.36
Referer: http://[IP]:10080/openclinic/main.do?Page=assets/manage_assets.jsp&ts=1603998735385
Accept-Encoding: gzip, deflate
Accept-Language: en-GB,en-US;q=0.9,en;q=0.8
Connection: close
```

#### CVE-2020-27234 - SQLInjection in the serviceuid parameter

The serviceuid parameter in the getAssets.jsp page is vulnerable to unauthenticated SQL injection. The following request would trigger the vulnerability:

```
GET /openclinic/assets/ajax/asset/getAssets.jsp?
ts=1603998759824&code=&nomenclature=&compnomenclature=y&description=&showinactive=false&serviceuid=
<SQLINJECTION>&serialnumber=&assetStatus=&componentStatus=&supplierUID=&purchasePeriodBegin=&skip=0&purchasePeriodEnd= HTTP/1.1
Host: [IP]:10080
Accept: text/javascript, text/html, application/xml, text/xml, */*
X-Prototype-Version: 1.7.3
X-Requested-With: XMLHttpRequest
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/86.0.4240.111 Safari/537.36
Referer: http://[IP]:10080/openclinic/main.do?Page=assets/manage_assets.jsp&ts=1603998735385
Accept-Encoding: gzip, deflate
Accept-Language: en-GB,en-US;q=0.9,en;q=0.8
Connection: close
```

#### CVE-2020-27235 - SQLInjection in the description parameter

The description parameter in getAssets.jsp page is vulnerable to unauthenticated SQL injection. The following request would trigger the vulnerability:

```
GET /openclinic/assets/ajax/asset/getAssets.jsp?ts=1603998759824&code=&nomenclature=&compnomenclature=y&description=
<SQLINJECTION>&showinactive=false&serviceuid=cli.gen&serialnumber=&assetStatus=&componentStatus=&supplierUID=&purchasePeriodBegin=&skip=0&pu
rchasePeriodEnd= HTTP/1.1
Host: [IP]:10080
Accept: text/javascript, text/html, application/xml, text/xml, */*
X-Prototype-Version: 1.7.3
X-Requested-With: XMLHttpRequest
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/86.0.4240.111 Safari/537.36
Referer: http://[IP]:10080/openclinic/main.do?Page=assets/manage_assets.jsp&ts=1603998735385
Accept-Encoding: gzip, deflate
Accept-Language: en-GB,en-US;q=0.9,en;q=0.8
Connection: close
```

#### CVE-2020-27236 - SQLInjection in the compnomenclature parameter

The compnomenclature parameter in the getAssets.jsp page is vulnerable to unauthenticated SQL injection. The following request would trigger the vulnerability:

```
GET /openclinic/assets/ajax/asset/getAssets.jsp?ts=1603998759824&code=&nomenclature=&compnomenclature=
<SQLINJECTION>&description=&showinactive=false&serviceuid=cli.gen&serialnumber=&assetStatus=&componentStatus=&supplierUID=&purchasePeriodBe
gin=&skip=&purchasePeriodEnd= HTTP/1.1
Host: [IP]:10080
Accept: text/javascript, text/html, application/xml, text/xml, */*
X-Prototype-Version: 1.7.3
X-Requested-With: XMLHttpRequest
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/86.0.4240.111 Safari/537.36
Referer: http://[IP]:10080/openclinic/main.do?Page=assets/manage_assets.jsp&ts=1603998735385
Accept-Encoding: gzip, deflate
Accept-Language: en-GB,en-US;q=0.9,en;q=0.8
Connection: close
```

#### CVE-2020-27237 - SQLInjection in the nomenclature parameter

The nomenclature parameter in the getAssets.jsp page is vulnerable to unauthenticated SQL injection. The following request would trigger the vulnerability:

```
GET /openclinic/assets/ajax/asset/getAssets.jsp?ts=1603998759824&code=&nomenclature=
<SQLINJECTION>&compnomenclature=&description=&showinactive=false&serviceuid=cli.gen&serialnumber=&assetStatus=&componentStatus=&supplierUID=
&purchasePeriodBegin=&skip=&purchasePeriodEnd= HTTP/1.1
Host: [IP]:10080
Accept: text/javascript, text/html, application/xml, text/xml, */*
X-Prototype-Version: 1.7.3
X-Requested-With: XMLHttpRequest
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/86.0.4240.111 Safari/537.36
Referer: http://[IP]:10080/openclinic/main.do?Page=assets/manage_assets.jsp&ts=1603998735385
Accept-Encoding: gzip, deflate
Accept-Language: en-GB,en-US;q=0.9,en;q=0.8
Connection: close
```

#### CVE-2020-27238 - SQLInjection in the code parameter

The code parameter in the getAssets.jsp page is vulnerable to unauthenticated SQL injection. The following request would trigger the vulnerability:

```
GET /openclinic/assets/ajax/asset/getAssets.jsp?ts=1603998759824&code=
<SQLINJECTION>&nomenclature=&compnomenclature=&description=&showinactive=false&serviceuid=cli.gen&serialnumber=&assetStatus=&compnentStatus=
&supplierUID=&purchasePeriodBegin=&skip=&purchasePeriodEnd= HTTP/1.1
Host: [IP]:10080
Accept: text/javascript, text/html, application/xml, text/xml, */*
X-Prototype-Version: 1.7.3
X-Requested-With: XMLHttpRequest
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/86.0.4240.111 Safari/537.36
Referer: http://[IP]:10080/openclinic/main.do?Page=assets/manage_assets.jsp&ts=1603998735385
Accept-Encoding: gzip, deflate
Accept-Language: en-GB,en-US;q=0.9,en;q=0.8
Connection: close
```

#### CVE-2020-27239 - SQLInjection in the assetStatus parameter

The assetStatus parameter in the getAssets.jsp page is vulnerable to unauthenticated SQL injection. The following request would trigger the vulnerability:

```
GET /openclinic/assets/ajax/asset/getAssets.jsp?
ts=1603998759824&code=&nomenclature=&compnomenclature=&description=&showinactive=false&serviceuid=cli.gen&serialnumber=&assetStatus=
<SQLINJECTION>&componentStatus=&supplierUID=&purchasePeriodBegin=&skip=&purchasePeriodEnd= HTTP/1.1
Host: [IP]:10080
Accept: text/javascript, text/html, application/xml, text/xml, */*
X-Prototype-Version: 1.7.3
X-Requested-With: XMLHttpRequest
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/86.0.4240.111 Safari/537.36
Referer: http://[IP]:10080/openclinic/main.do?Page=assets/manage_assets.jsp&ts=1603998735385
Accept-Encoding: gzip, deflate
Accept-Language: en-GB,en-US;q=0.9,en;q=0.8
Connection: close
```

#### CVE-2020-27240 - SQLInjection in the componentStatus parameter

The componentStatus parameter in the getAssets.jsp page is vulnerable to unauthenticated SQL injection. The following request would trigger the vulnerability:

```
GET /openclinic/assets/ajax/asset/getAssets.jsp?
ts=1603998759824&code=&nomenclature=&compnomenclature=&description=&showinactive=false&serviceuid=cli.gen&serialnumber=&assetStatus=
<SQLINJECTION>&componentStatus=&supplierUID=&purchasePeriodBegin=&skip=&purchasePeriodEnd= HTTP/1.1
Host: [IP]:10080
Accept: text/javascript, text/html, application/xml, text/xml, */*
X-Prototype-Version: 1.7.3
X-Requested-With: XMLHttpRequest
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/86.0.4240.111 Safari/537.36
Referer: http://[IP]:10080/openclinic/main.do?Page=assets/manage_assets.jsp&ts=1603998735385
Accept-Encoding: gzip, deflate
Accept-Language: en-GB,en-US;q=0.9,en;q=0.8
Connection: close
```

#### CVE-2020-27241 - SQLInjection in the serialnumber parameter

The serialnumber parameter in the getAssets.jsp page is vulnerable to unauthenticated SQL injection. The following request would trigger the vulnerability:

```
GET /openclinic/assets/ajax/asset/getAssets.jsp?
ts=1603998759824&code=&nomenclature=&compnomenclature=y&description=&showinactive=false&serviceuid=&serialnumber=
<SQLINJECTION>&assetStatus=&componentStatus=&supplierUID=&purchasePeriodBegin=&skip=0&purchasePeriodEnd= HTTP/1.1
Host: [IP]:10080
Accept: text/javascript, text/html, application/xml, text/xml, */*
X-Prototype-Version: 1.7.3
X-Requested-With: XMLHttpRequest
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/86.0.4240.111 Safari/537.36
Referer: http://[IP]:10080/openclinic/main.do?Page=assets/manage_assets.jsp&ts=1603998735385
Accept-Encoding: gzip, deflate
Accept-Language: en-GB,en-US;q=0.9,en;q=0.8
Connection: close
```

#### Timeline

2020-11-19 - Initial contact  
2020-12-07 - 2nd contact; copy of advisories issued and vendor acknowledged receipt  
2021-02-01 - 60 day follow up; no response  
2021-03-09 - 90 day follow up; no response  
2021-04-13 - Final notice

#### CREDIT

Discovered by Yuri Kramarz of Cisco Talos.

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VULNERABILITY REPORTS

PREVIOUS REPORT

NEXT REPORT

TALOS-2020-1208

TALOS-2020-1206