



# SEEDS FILE CONVERSION

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# Seeds file conversion

[Token](#)

## 1. Overview

In this how-to, we will demonstrate the possible ways to convert token seed files from different formats into WebADM inventory format, allowing you to use third-party hardware tokens with RCDevs security solutions. We will also demonstrate how to re-use software tokens already registered on end-users devices with RCDevs solutions.

## 2. Seeds Files Format supported by WebADM

### 2.1 Un-encrypted Inventory

This is the format of an unencrypted RCDevs inventory file which can be imported in WebADM without any conversion:

```
# CSV import file for RCDevs WebADM
# Generated on April 9, 2019, 4:13 pm

Type, Reference, Description, Data
"OTP Token", "5292530833003", "RCDevs RC200-T6",
"TokenKey=tdxn5faLI0joNLIjLrIMjUxaZXc=,TokenType=VE9UUA==,TokenState=MA==,OTPLength=Ng==,
```

As you can see, it is CSV file with four entries for each token:

- > Type: Referring to the object type (TOTP, HOTP, OCRA or YUBIKEY)
- > Reference: The serial number of the Token
- > Description: Brief description of the object
- > Data: Configuration data for the token

This information can be seen in [WebADM](#) > [Databases](#) > [Inventoried Devices](#) like this:

As you can see from the above inventory example, the Data field contains multiple items that you need to adjust according to the properties of your tokens.

### Note

All of the entries below must be base64 encoded to be imported into WebADM.

The `Data` field contents in RCDevs inventory files are the following:

- > `TokenKey`: Token secret key value.
- > `TokenType`: TOTP (time-based), HOTP (event-based), OCRA or YUBIKEY according to your token type.
- > `TokenState`: This is the time offset value for TOTP and counter value for HOTP tokens. Set to 0 by default. If you are not able to provide the actual value, a Token resynchronization may be required.
- > `OTPLength`: 6, 8 or 10. This setting depends on your OTP length generated by your tokens.
- > `TOTPTimeStep`: 30 or 60 seconds. Useful for TOTP Token. Must match the TOTP Time Step setting of your OpenOTP server.

## 2.2 Encrypted Inventory

In case you have purchased RCDevs hardware tokens and are using Enterprise Edition of OpenOTP you will receive an encrypted inventory file. To protect the token secrets, the encrypted inventory file can only be imported and decrypted by WebADM running with the correct associated license file. Without the proper enterprise license, you will not be able to import it in WebADM.

An RCDevs encrypted seeds file looks like:

Inventory Import File for RCDevs WebADM  
Generated on June 20, 2019, 12:55 pm  
Encrypted for use with <CUSTOMER> customer license  
MD5: 68bc02730eefba1216570d8f38a4e7bd

```
-----BEGIN RCDEVS INVENTORY DATA-----  
MCW7jYTpRgP9g0Z5N+Y2+7DobUzK2buPg9yVeIhAH+LwDwLQwLZVUamK+164mGx  
yckzsWlNYX97kN2CylwZxw/qm+Y172v9GwGbQKNRmPaLMQVt3K7X/zLYtDW1lo  
oKSDN2iNovPPTH5RjDLuCbC3qXvWkTktQN7GqrMjN0yZyAXzT6klJoleNUBVMrV6  
MCRdPp44Zbefnwhq50gH0dF9g2XgIZGogmAbBuJkRlbl5QzGvj5Y30oHR74TzprF  
nJ0lutexlFfKch0G0gtLjmX/GBpme4E8k/z+uaZq8BjfSxDxAoXB2mRqfkzYeZXY  
Rg/hSuKmvQrg051hx4cQfPlRootYsXMudXJ4vvKQTC1h5gCJ6g8yeCR3okFhpYnk  
1q7EAiaM24qo2MXq6Hg6iDwxdXuSYK0uuX9nHGngu1aFfK449Z7TrnrqDAenvyCI  
kLFGZ9zgHqsmHEz4syV66PF1rjt3qiaU41AobSK0KPz2MRMLBZ8RSr6zAUcBIimj  
UexglHUKtNDvkGG5mJnNztBukrg6f79gsZNUDipb0VIjpyCXT4JkIeg/pKe44qEI  
lMgRqqi+cCDoSwidWXfacdr7Vn/RTL01katNTwP5nzluMdkCzPTfA5kJv0lQyB9y  
mIRf2XoKcB8gM210hgQKQ9FIIdNMHBp9733iK4R3Ya2+Q/T82P5mtdHuYhPWRkFH  
mkCy8YJ448Fi+71qwN1HrdDiK+/Xg2261DOX/dQ1AwNSuNLB5RdSDwHa0A0iq3ps  
SFcK+vhK0n/OyLZpP5z0HEYS94EIKAVNQF+YFwGcRZE0ki4lySPDtgknnETZireb  
hXy60sqfHb3R3IZJxFLRU7TUqbkdxlJnx+QckJiYsDwK6JKwUn0BgBkNIJ91WwLz  
BYZimc+W0GS7iLbe1TqgCN/epZQhg3gqmtYUelHPamW9a37sq48cyFG/EB0P2G/r  
FSq5Tjz+gjqYFpyAhD0VWj09/gFqBp8QuBLg5kzoupgT3boGsogy0CDe8u0eVTKP  
F3HRH8j57cTr0oRHggo9y2alNykz7NdCYtc71N6IzhQNfEixU0MvctllwTV/dy  
0JtU+fTE7cbrPmBvg4+8elCMEeEd2QwZdTqBuSM60EI/2XenGB2K/R70MUeNtSM  
k/qo0S1ker0UIIvywAl4WBqbQG9pvd926I2vp/gHkhR52l9KK2f2pB+qi09Y2KNh  
GUdes6mNTrKBZ58kES3ZH8JCgaEiPuJbo0I8rRdtzuv0yLXxaGYIgdsoyCv/ba9  
aB75XuNSXwsd26jIIdc01txPRjx5idp3W9Pyskmfju03n2SZDlpjM6gybe+Axfs  
K43uzVHEk6n0mrqb+1uXwjih3T81t81t7HmqL0yzaIF07WS6QgzniQNo3mTdlGzY  
RXUtiB0pRBarbIVeFM5Uz07z+tjzyhGETPG/hX00ESvBB9zRlNSZzRQkH0kDGy5C  
wi06sF5JJvPo9M+3/UghpiII845nGKMIjd2QC5ot0ZwzQQdVzgb+WLqavqNRdHDd  
p2x2rns+GLX6187ncvUDmckukB/ANCScggz3iedbco1DdnNQNCv2KMQM6LHovcNZ  
VVUraZ7QuVafuGHYBZzCDUku7v0/zwvMu7hPnuS1GVf0Xm68EApu0AeajYA615Es  
s1S2YkMEa1ALimHoV6T4ND26Sw0D+GxaW6q33qBJEvWSecy0x1biUbCEl3kAjSoT  
0g7SA82Wo0a6NH+qJBWdY0IfID1JZu8ctJGf77iZ523WpHtcqjmNfUM8Xq0DMVjV  
8g3gC0bYgIphITp70Sa4scloVhmJE723Rxt7I1kCH+dcjioWBuj1/S/0h97IEXsj  
PVQQhux/BmxMwqM5IihG68k/Va00PuWJUg5+UEHD5yx2md6riJmio228p8X6Zsvh  
v2A/PnXaA7z8F9BiRFMcyTHzNQWnjTodi52Htnf0L0Km1gCIHftBE0vGVLs5Fn0x  
nVupskBe/QE6E8u0XQ65Ue3qIG5iWG6cu+igHCtDPV7m0C7KX0TXCneI6k7qbNPQ  
Smoc/4N627k5aR5Em/LEzcdH8vmCyde+UeaA0m5hPBEDSaDAeeolFRFrFVdu00F6  
IdnBVTUjwjBoInBJ71QIjZHse6zwlw1/RBpLpR1k9v1Jf1+ZPQAogxu5vXkSBVxb  
-----END RCDEVS INVENTORY DATA-----
```

No conversion or data extraction is possible with this kind of inventory file. If your objective is to use the RCDevs Tokens with another solution than WebADM, you should contact the RCDevs sales team and ask for Token seeds in standard PSKC format.

### 3. Seeds Files Conversions for Hardware Token import

To use hardware Tokens from another provider, you have to convert the seeds file from your provider to the format supported by

WebADM. The format is described in part [2.1 Un-encrypted inventory](#). Once the file is adjusted, then you can [import your new inventory file](#) into WebADM database.

### 3.1 Deepnetsecurity Tokens (SafeID/Mini) conversion into WebADM Inventory

This is an example of Deepnet Security inventory file:

```
<data>
<header>
<manufacturerCode>DN</manufacturerCode>
<productCode>ST</productCode>
<encode>HEX</encode>
<encrypt>AES256</encrypt>
</header>
<tokens>
<token>
<serial>12345678</serial>
<seed>1A2B2395A3B45D11AFBADC510FE860035C4ED6925B12064B3B02D6FB99C5519A</seed>
</token>
</tokens>
</data>
```

In this case, the secret is

`1A2B2395A3B45D11AFBADC510FE860035C4ED6925B12064B3B02D6FB99C5519A` in Hexadecimal format (this means that you have to convert first the value from Hexadecimal to Base64 to be managed by WebADM).

> **HEXADECIMAL** = 1A2B2395A3B45D11AFBADC510FE860035C4ED6925B12064B3B02D6FB99C5519A

Converted to:

> **Base64** = Gisjla00XRGvutxRD+hgA1xO1pJbEgZLOWLW+5nFUZo=

The `Serial` value must be used as `Reference` value after conversion for WebADM. This value is used for Hardware Token assignation and **should not be converted**.

After conversion, the seed file looks like this:

```
Type, Reference, Description, Data
```

```
"OTP Token", "12345678", "SafeID/Mini",
```

```
"TokenKey=Gisjla00XRGvutxRD+hgA1x01pJbEgZL0wLW+5nFUZo=,TokenType=VE9UUA==,TokenState=MA==
```

I can now import that file into my WebADM inventory database.

```
»
```

```
»
```

```
»
```

I can assign this token to a user using the Token Reference. Have a look on the following documentation for [Hardware Token Assignment](#).

The Token may require resynchronization to be used correctly. Have a look on part [Resync Hardware or Software Tokens](#) to perform the token resynchronization.

## 3.2 PSKC Files conversion into WebADM Inventory

If you already have a standard PSKC file from your Token provider, then you can use the following script on your WebADM instance to convert your PSKC file into a WebADM inventory file:

```
[root@webadm ~]# /opt/webadm/websrvs/openotp/bin/pskc2inv  
WebADM Inventory converter for OATH PSKC files  
Usage: pskc2inv <pskc-file> <inventory-file> [<decryption-key>]
```

Here is an example of PSKC seeds file who can be provided by RCDevs (PSKC format is only provided by RCDevs if asked by the customer):

```
[root@webadm bin]# cat pskc.csv
```

```

<?xml version="1.0" encoding="UTF-8"?>
<!--
OATH PSKC import file for RCDevs WebADM
Generated on April 9, 2019, 4:13 pm
-->

<KeyContainer Version="1.0" xmlns="urn:ietf:params:xml:ns:keyprov:pskc"
xmlns:ds="http://www.w3.org/2000/09/xmldsig#"
xmlns:xenc="http://www.w3.org/2001/04/xmenc#">
<KeyPackage>
  <DeviceInfo>
    <SerialNo>5292530833003</SerialNo>
    <Model>RCDevs RC200-T6</Model>
  </DeviceInfo>
  <Key Algorithm="urn:ietf:params:xml:ns:keyprov:pskc:totp" Id="5292530833003">
    <AlgorithmParameters>
      <ResponseFormat Length="6" Encoding="DECIMAL"/>
    </AlgorithmParameters>
    <Data>
      <Secret>
        <PlainValue>tdxn5faLI0joNLIjLrIMjUxaZXc=</PlainValue>
      </Secret>
      <Time>
        <PlainValue>0</PlainValue>
      </Time>
      <TimeInterval>
        <PlainValue>30</PlainValue>
      </TimeInterval>
    </Data>
  </Key>
</KeyPackage>
</KeyContainer>

```

To convert it into a WebADM inventory file, I use the pskc2inv script like below:

```

[root@webadm bin]# ./pskc2inv pskc.csv webadm_inv.csv
Successfully converted 1 PSKC tokens.
[root@webadm bin]#

```

The new WebADM inventory file has been created and can be imported through WebADM admin GUI.

```
[root@webadm bin]# cat webadm_inv.csv
# OpenOTP Inventory export for OATH PSKC
# Generated by OpenOTP on January 3, 2020 10:03 am

"Type", "Reference", "Description", "Data"
"OTP Token", "5292530833003", "RCDevs RC200-T6",
"TokenType=VE9UUA==,TokenKey=tdxn5faLI0joNLIjLrIMjUxaZXc=,OTPLength=Ng==,TOTPTimeStep=Mz/
```

### 3.3 Safenet/Gemalto Seeds File conversion into WebADM Inventory

RCDevs also provides a script to convert Safenet seeds file into a WebADM inventory file:

```
[root@webadm ~]# /opt/webadm/websrvs/openotp/bin/safenet2inv
WebADM Inventory converter for SafeNet files
Usage: safenet2inv <safenet-file> <inventory-file> <token-type>
Token type can be TOTP or HOTP
```

## 4. Software Tokens Migration from another Solution to WebADM

If you already have software Tokens registered on end-user devices, the token can be re-used with WebADM and OpenOTP if you still have the secret keys of the registered tokens. This can be done by Manual Token Registration on a user account through WebADM Admin GUI, API or Self-Services.

For Manual Token Registration through WebADM GUI, go to **WebADM GUI** > **<USER\_ACCOUNT>** > **MFA Authentication Server** > **Register/Unregister OTP Tokens** > **I use another Token (Manual Registration)** and provide information regarding your token.

This is the API method and description which can be used to do the same thing:

For example, I can re-use my Token registered on my Google Authenticator if I know the following information regarding my Token:

- > Token Type: TOTP, HOTP or OCRA.
- > Key Algorithm: SHA1, SHA256, SHA512. (SHA1 by default)
- > Key Format: Hexadecimal, Base32, Base64
- > Secret Key: The secret key of your current Token.

The secret key size depends on the chosen key algorithm. By default, the size of the accepted keys have the following length:

- > SHA1 - 20 bytes
- > SHA256 - 32 bytes
- > SHA512 - 64 bytes

To allow non-standard key sizes, the SHA1 algorithm is assumed for all other key sizes in the WebADM.

## 5. Resynchronize Hardware or Software Tokens

To resynchronize a Token, the Token must be assigned to a user account. Once the Token is assigned to a user, click on that user account through WebADM GUI > **Application Actions** > **MFA Authentication Server** > **Resynchronize Tokens** . Enter the current OTP provided by the Token and click the **Resync** button.

»

You should have a message like below if the synchronization process worked:

»

Event-based tokens can be resynchronized either by providing the counter value or by generating two sequential OTP's and providing them in the resynchronization page.

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