

APNs Certificate Creation & Renewal on Windows Computers

Description

The following guide provides the steps to create and renew an APNs certificate using Windows.

APNs Topic

▲ An APNs certificate has a unique topic, in the form of a hexadecimal string, and belongs to the Apple ID used to create the certificate. When renewing, the topic must match to ensure devices continue to communicate with the server. As such, not only must the same Apple ID be used when renewing an APNs certificate, but the current certificate must also be selected for renewal.

APNs Expiry

▲ Apple Mobile Device Management (MDM) requires an Apple Push Notification service (APNs) certificate; renewable yearly. If APNs certificates are allowed to expire, all MDM communication will be lost, until renewed.

Information

Requirements

- An appropriate copy of [OpenSSL](#), which must be downloaded and installed.

Note, that the light version does not include the necessary configuration files.



CMD Commands

The cmd.exe application should be opened with 'Run as an Administrator' for all commands in this KB

Step-By-Step Guide

- [Creating the Certificate Signing Request \(CSR\)](#)
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Creating the Certificate Signing Request (CSR)

1. Open cmd.exe as an Administrator
2. Create a CSR. Enter the following command, which will result in two new files on the Desktop: request.csr and privateKey.key:

```
"C:\Program Files\OpenSSL-Win64\bin\openssl.exe" req -out "%USERPROFILE%\Desktop\request.csr" -new -newkey  
rsa:2048 -nodes -keyout "%USERPROFILE%\Desktop\privateKey.key" -config "C:\Program Files\OpenSSL-  
Win64\bin\cnf\openssl.cnf"
```



Certificate Private Key names are visible from openssl commands and the Common Name is used to set the Private Key name. Supplying the Apple ID and Server as the Common Name, ensures the Apple ID used to generate the certificate will be stored for future reference.

```
Administrator: Command Prompt
C:\WINDOWS\system32>"C:\Program Files\OpenSSL-Win64\bin\openssl.exe" req -out "%USERPROFILE%\Desktop\request.csr" -new -newkey
rsa:2048 -nodes -keyout "%USERPROFILE%\Desktop\privateKey.key" -config "C:\Program Files\OpenSSL-Win64\bin\cnf\openssl.cnf"
Generating a RSA private key
.....+++++
writing new private key to 'C:\Users\Administrator\Desktop\privateKey.key'
-----
You are about to be asked to enter information that will be incorporated
into your certificate request.
What you are about to enter is what is called a Distinguished Name or a DN.
There are quite a few fields but you can leave some blank
For some fields there will be a default value,
If you enter '.', the field will be left blank.
-----
Country Name (2 letter code) [AU]:US
State or Province Name (full name) [Some-State]:Indiana
Locality Name (eg, city) []:Fishers
Organization Name (eg, company) [Internet Widgits Pty Ltd]:Demo
Organizational Unit Name (eg, section) []:Demo
Common Name (e.g. server FQDN or YOUR name) []:AppleID: demo@filewave.com, Server: mdm.filewave.com
Email Address []:demo@filewave.com

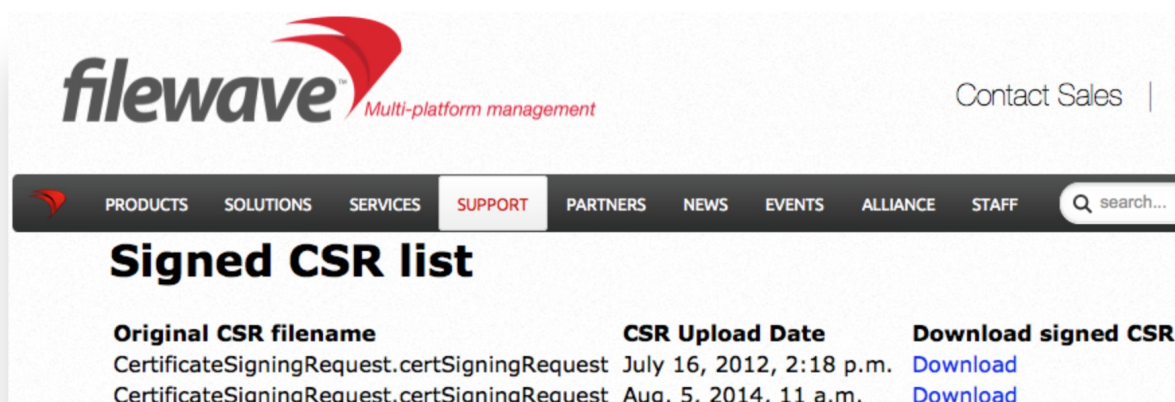
Please enter the following 'extra' attributes
to be sent with your certificate request
A challenge password []:
An optional company name []:

C:\WINDOWS\system32>
```

Sign the CSR

CSR requests must be signed before uploading to Apple. FileWave has a portal for this process, which requires an active FileWave account.

1. Navigate to https://csr.filewave.com/list_csr and login.
2. Upload the previously created CSR.
3. 'Download signed CSR' should list this uploaded and now signed CSR.
4. Download this newly signed CSR, ready for upload to Apple in the next section. Again consider where this certificate is stored.



Upload the signed FileWave CSR to Apple

Creating a Certificate

1. Navigate to: <https://identity.apple.com/pushcert/> and log in with an Apple ID.

✓ This Apple ID will own the certificate and is required for every renewal. Do not use a personal Apple ID, to avoid complications if that person were to leave the business or institution.

1. Click 'Create'.
2. 'Accept' Apple's 'Terms of Use'.

Apple Push Certificates Portal

Create a New Push Certificate

Upload your Certificate Signing Request signed by your third-party server vendor to create a new push certificate.

Notes

Vendor-Signed Certificate Signing Request

no file selected

Cancel

Upload

Renewing a Certificate

1. Navigate to: <https://identity.apple.com/pushcert/> and log in with the Apple ID used to initially create the certificate.
2. Confirm the Certificate to renew.
3. Select 'Renew'.

To confirm the certificate, compare the Subject DN (Topic) and current certificate.

Clicking the 'i' button will show the certificate details, including the Topic:

Apple Push Certificates

Serial Number : b4555371ea21ea2
Subject DN : C=GB, CN=APSP:bb78e23d-9b51-4d83-ef5d-dd92a43b0930, UID=com.apple.mgmt.External.bb78e23d-9b51-4d83-ef5d-dd92a43b0930
Notes :

Cancel Update Note

Service	Vendor	Expiration Date	Status	Actions
Mobile Device Management	FileWave (Europe) GmbH	Jan 6, 2021	Active	<i>i</i> Renew Download Revoke

Topic

Info

Ensure this matches with the 'Current Certificate' in FileWave Admin > Preferences > Mobile > Apple Push Notification Certificate:

FileWave Admin Preferences

General Organization Info Mobile Google LDAP Kiosk VPP & DEP Inventory Mail Education Imaging Editor Proxies Software Update

MDM Server

Server Address: Port: ☒ Generate new key on Save

Shared Key:

Apple Android/Chromebooks macOS

Apple Push Notification Certificate

Current Certificate: ☒

Expiration Date: 06 January 2021 09:34:08

Serial Number: b4:55:55:37:1e:a2:1e:a2

APN Certificate/Key:

Device un-enrollment

☐ Remove MDM profile for devices removed from FileWave model

Devices removed from FileWave will require a new enrollment to be managed ; it may be required to wipe the device to start enrollment again, depending on device restrictions.

☐ Ignore status notifications

Topic

If the 'Topics' do not match do not continue. If the correct certificate is not in the list on Apple's website, this is the wrong Apple ID. If this guide was followed in creating the original certificate, the previously used Apple ID will be viewable from the certificate "Private Key".

Click 'Choose File' and browse to the signed FileWave CSR from the previous section.

Click 'Upload' and Apple will return a 'Confirmation'.

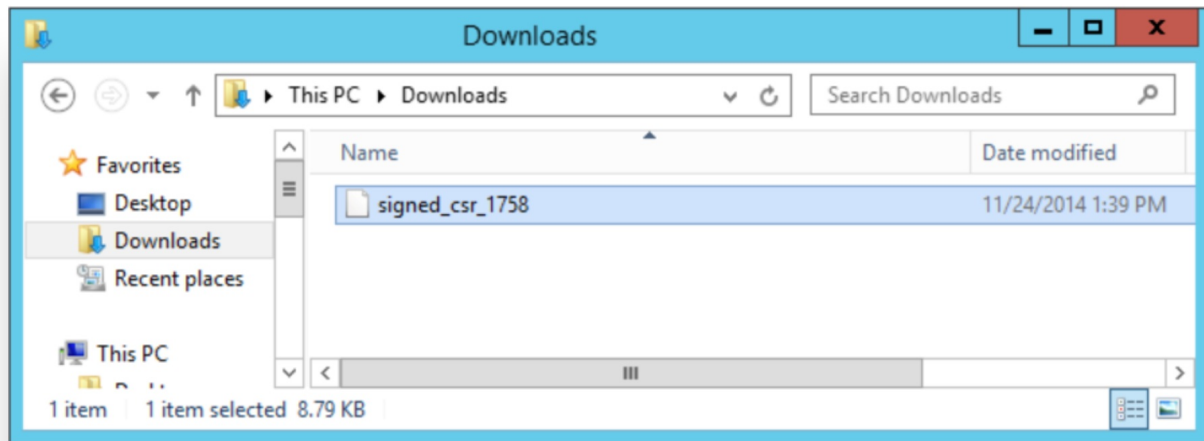
Confirmation



You have successfully created a new push certificate with the following information:

Service	Mobile Device Management
Vendor	FileWave (Europe) <u>GmbH</u>
Expiration Date	Jan 6, 2021

Click 'Download' and save the ".pem" file. Again consider where this certificate is stored.



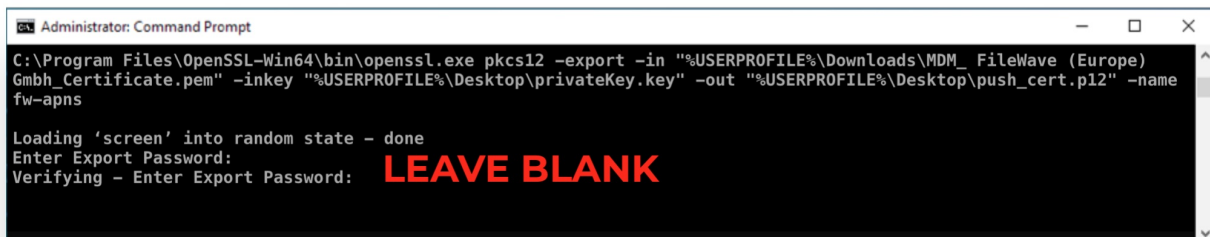
Create a ".p12" from the Signed CSR

1. Open cmd.exe as an Administrator
2. Create a ".p12". Entering the following command will create the ".p12" on the Desktop:

```
"C:\Program Files\OpenSSL-Win64\bin\openssl.exe" pkcs12 -export -in "%USERPROFILE%\Downloads\MDM_ FileWave (Europe) Gmbh_Certificate.pem" -inkey "%USERPROFILE%\Desktop\privateKey.key" -out "%USERPROFILE%\Desktop\push_cert.p12" -name fw-apns
```

- 1. If the output errors in creating the .p12 certificate file, replace the %USERPROFILE% location by pathing out the exact file location instead.

1. Leave the 'Export Password' blank



1. Certificate details may be checked:

Common Name and Topic

- 1. The name of the Private Key will show the value defined as the "Common Name" from the creation of the CSR. Where recommendation was followed, this should list the Apple ID and Server name. Additionally the name of the Certificate is the same as the Topic.

```
"C:\Program Files\OpenSSL-Win64\bin\openssl.exe" pkcs12 -info -in C:\Users\Administrator\Desktop\push_cert.p12
```

Note, below image has been edited to remove some details and highlight the two key items of interest.

```
Administrator Command Prompt
Microsoft Windows [Version 10.0.18363.836]
(c) 2019 Microsoft Corporation. All rights reserved.

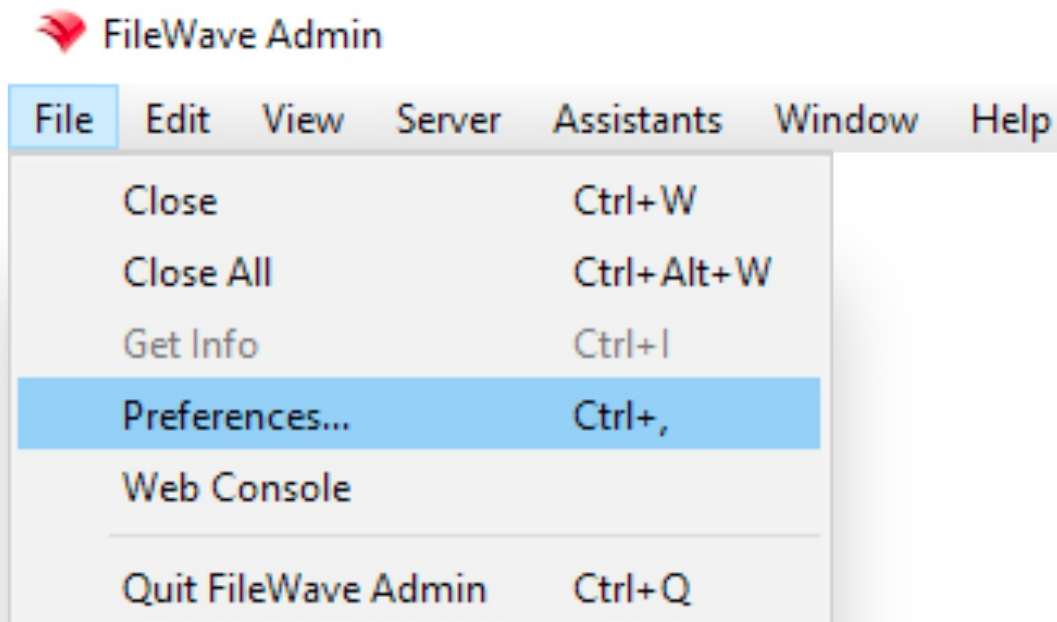
C:\WINDOWS\system32>"C:\Program Files\OpenSSL-Win64\bin\openssl.exe" pkcs12 -info -in C:\Users\Administrator\Desktop\push_cert.p12
Enter Import Password:
MAC: sha1, Iteration 1
MAC length: 20, salt length: 8
PKCS7 Encrypted data: pbeWithSHA1And40BitRC2-CBC, Iteration 2048
Certificate bag
Bag Attributes
    friendlyName: APSP:bb78e23d-9b51-4d83-ef5d-dd92a43b0930
PKCS7 Data
Shrouded Keybag: pbeWithSHA1And3-KeyTripleDES-CBC, Iteration 2048
Bag Attributes
    friendlyName: AppleID: demo@filewave.com, Server: mdm.filewave.com
```

Topic

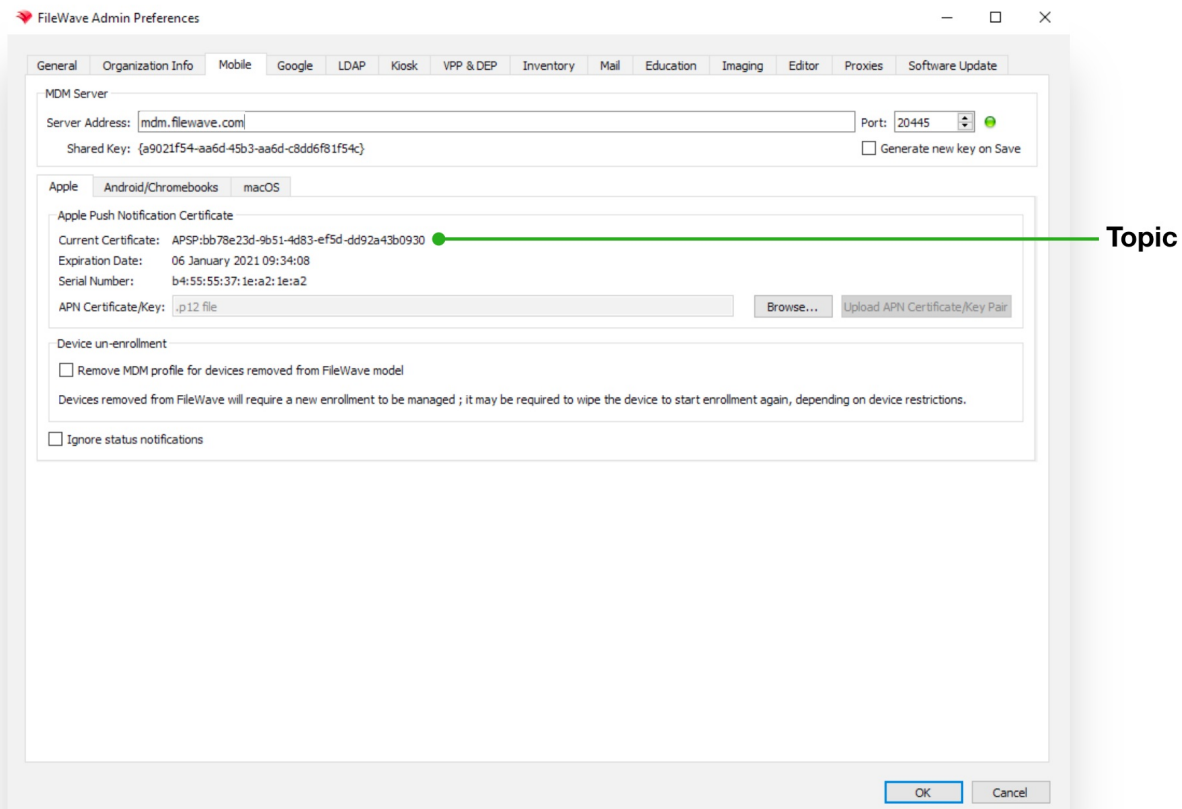
Common Name

Uploading the Certificate into FileWave

1. Launch the FileWave Admin and login to the FileWave server.
2. Open the FileWave Admin Preferences.



1. Select the 'Mobile' tab.
2. Click 'Browse' and navigate to the saved ".p12" APNs certificate.
3. Select the exported ".p12" certificate.
4. Click 'Upload APN Certificate/Key Pair'.
5. The topic should match the previous topic.



1. That is it! FileWave may now manage Apple devices using Apple's Push Notification Service.

✓ APNs certificates require yearly renewals. Through FileWave Admin > Dashboard > Alert Settings, automated emails may be configured. Consider adding 'APN for MDM'. Note this requires the Email preferences in Admin to be configured.

Related Articles

[APNs Certificate Creation and Renewal on macOS](#)

🔄Revision #10

★Created 12 July 2023 15:08:22 by Andrew Kloosterhuis

✍Updated 10 December 2024 14:05:26 by Josh Levitsky