

# Signing 4D apps best practices

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[https://github.com/madamov/4dmethod\\_signing](https://github.com/madamov/4dmethod_signing)



# Signing on macOS

- Create separate Apple Developer ID
- \$99 per year, unlimited number of apps and signatures
- Take a note of your Apple ID, password and Team ID
- Xcode must be installed



# Signing on macOS

- Login to <https://developer.apple.com/> and create your certificate (for apps distributed outside of Mac App Store generate Developer ID Application type of certificate)
- Download certificate and install it in keychain on your computer
- Take a note of certificate name
- When you are asked for certificate password, use your Apple ID password



# Signing on macOS

- We can let 4D sign the application for us
- It will sign all the items that needs to be signed within app bundle
- If you do not let 4D sign, it will sign using ad hoc certificate, but you can re-sign with your certificate later



# Signing on macOS Workflow

- Sign app bundle
- Create dmg file (you can create zip also)
- Submit dmg for notarization (requires AppleID, Team ID and app specific password created at <https://account.apple.com/account/manage>)
- If accepted, staple notarization ticket



# Signing on macOS Workflow

- Sign app bundle

```
codesign \  
  --force \  
  --deep \  
  --options runtime \  
  --sign "Developer ID Application: Your Name (TEAMID)" \  
  MyApp.app
```



# Signing on macOS Workflow

- Create DMG

```
hdiutil create -volname "MyAppVolume" -format UDBZ  
-srcfolder MyApp.app MyApp.dmg
```



# Signing on macOS Workflow

- Submit for notarization

```
xcrun notarytool submit "MyApp.dmg" \  
  --apple-id "$APPLE_ID" \  
  --password "$APP_SPECIFIC_PASSWORD" \  
  --team-id "$TEAM_ID" \  
  --wait
```



# Signing on macOS Workflow

- Staple

```
xcrun stapler staple "MyApp.dmg"
```



# Signing on macOS Workflow

- You can do notarization and stapling manually, or you can buy DMG Canvas and it will do it for you
- <https://www.araelium.com/dmgcanvas>



# Signing on macOS

- <https://www.raelium.com/dmgcanvas>
- <https://www.mothersruin.com/software/Apparency/>
-



# Signing on Windows

- Create Azure account at <https://portal.azure.com/>
- After creating account, you will need to create Subscription Resource
- Within selected Subscription resource, add Microsoft.CodeSigning Resource provider
- Go back to home and click on "Artifact Signing Accounts" and create one
- Create Resource Group during account creation or choose existing one
- Choose account name, region and pricing tier



# Signing on Windows

- You can choose from two:

\$9.99 (5000 signatures) or \$99.99 per month (100000 signatures)

- After this you will need to verify your identity with Microsoft, only after that you will be able to create certificate profile which will then enable Azure to generate certificates for you.



portal.azure.com/my\_signing\_account

Microsoft Azure

Home > my\_signing\_account > my\_signing\_account | Certificate profiles

Artifact Signing account

Search

+ Create Refresh Delete

Search any field... Type: All Status: All

Name	Subject name	Profile type	Expiry date	Status
my_cert_profile	CN=Clear View Systems Ltd, O=Clear View Systems Ltd, L=North Vancouver, S=British Columbia, C=CA	Public Trust	16/01/2026	Active

Showing 1 - 1 of 1. Display count 15

Overview  
Activity log  
Access control (IAM)  
Tags  
Diagnose and solve problems  
Resource visualizer  
Settings  
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Certificate profiles  
Identify validations  
Monitoring  
Automation  
Help

portal.azure.com/certificates/containers/my\_signing\_account

Microsoft Azure

Home > Artifact Signing Account > my\_signing\_account

my\_signing\_account

Search

Settings

Search certificates by thumbprint 320A View

Name	Serial number	Status
my_cert_profile	38 [REDACTED]	Active

portal.azure.com/certificates/containers/my\_signing\_account

Microsoft Azure

Home > Artifact Signing Account > my\_signing\_account

Artifact Signing Accounts

Certificate profiles

+ Create Manage view Refresh Export to CSV

Yes, the certificate in this section is for business purposes. Do not use it for personal or non-business purposes. For more information, see the Azure portal documentation.

Name	Type	Location	Subscription
my_signing_account	Artifact Signing Ac...	my_err_group	West US 2



Home > Artifact Signing Accounts > my\_signing\_account | Certificate profiles

# my\_cert\_profile

Refresh Revoke

**Subject:** CN=Clear View Systems Ltd, O=Clear View Systems Ltd, L=North Vancouver, S=British Columbia, C=CA

**Enhanced key usage:** 1.3.6.1.4.1.311.97.67131277.320582877.570969352.789676944

**Identity validation id:** 4c103f0a-4a2b-40d4-af60-78e6932870ab

Search certificates by thumbprint

Thumbprint	Serial number	Status	Created date	Expiry date
C83E530D16005A77750FAD487C757A8B0000	00000006E671	Active	13/01/2026	16/01/2026
06A00E477000000000000000000000000000	00006605A	Active	12/01/2026	15/01/2026
837478000000000000000000000000000000	00070D03	Active	11/01/2026	14/01/2026
B668CB200000000000000000000000000000	0007096B	Active	10/01/2026	13/01/2026
C11795000000000000000000000000000000	000650BA	Expired	09/01/2026	12/01/2026
7F3C3F000000000000000000000000000000	000649E7	Expired	08/01/2026	11/01/2026
42B92B000000000000000000000000000000	0006D3C2	Expired	07/01/2026	10/01/2026
AAF901000000000000000000000000000000	00063C76	Expired	06/01/2026	09/01/2026
018C9E000000000000000000000000000000	0006F7E1	Expired	05/01/2026	08/01/2026
BDCAB3000000000000000000000000000000	0006378F	Expired	04/01/2026	07/01/2026
124DC2000000000000000000000000000000	0006C255	Expired	03/01/2026	06/01/2026
C9162E000000000000000000000000000000	00062EC9	Expired	02/01/2026	05/01/2026
6C70B4000000000000000000000000000000	00006BA0D	Expired	01/01/2026	04/01/2026
7FE6E7000000000000000000000000000000	00062539	Expired	31/12/2025	03/01/2026
82687A000000000000000000000000000000	000061F75	Expired	30/12/2025	02/01/2026



# Signing on Windows

- Take note of Code Signing Account name, Certificate profile name and a region you selected during setup, you will need that later a lot in both manual and automatic signing.



# Signing on Windows

- Unlike macOS where you only need to install Xcode, signing on Windows requires installation of:
  - SignTool
  - .NET 8 Runtime
  - Artifact signing dlib
  - Azure CLI client (needed for authentication)
- Follow <https://learn.microsoft.com/en-us/azure/artifact-signing/how-to-signing-integrations>



# Signing on Windows

- Then you have to create JSON file:

```
{  
  
  "Endpoint": "<Artifact Signing account endpoint>",  
  
  "CodeSigningAccountName": "<Artifact Signing account name>",  
  
  "CertificateProfileName": "<Certificate profile name>",  
  
  "CorrelationId": "<Optional CorrelationId value>"  
}
```



# Signing on Windows Workflow

- Run PowerShell
- Authenticate using Azure CLI:  
`az login`
- This will open browser window to enter your Azure credentials



# Signing on Windows Workflow

- To sign we will use signtool.exe

```
.\signtool.exe sign /v /debug /fd SHA256 /tr "http://  
timestamp.acs.microsoft.com" /td SHA256 /dlib "C:  
\signme\microsoft.trusted.signing.client.1.0.86\bin\x64\Azure.Co  
deSigning.Dlib.dll" /dmdf "C:\signme\metadata.json" "C:  
\signme\signMe\signMe.exe"
```

- By specifying JSON file and location of Azure.CodeSigning.Dlib.dll signtool will know which certificate to use, it will know we are using Azure Trusted Signing



# Signing on Windows

- Good tutorials of setting all this up
- <https://www.alkanesolutions.co.uk/2024/12/28/a-step-by-step-guide-to-code-signing-using-azure-trusted-signing/>
- <https://www.hendrik-erz.de/post/code-signing-with-azure-trusted-signing-on-github-actions>