Apple Inc.
Certification Authority
Certification Practice Statement
Developer ID

Version 1.1
Effective Date: June 10, 2013
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1. Introduction

This Certification Practice Statement (“CPS”) describes the practices employed by the Developer ID Subordinate Certification Authority (“Developer ID Sub-CA,” or “the Sub-CA”) in issuing and managing digital certificates and related services. These practices, and the structure of this document, are designed to align to the requirements defined in the Apple Certificate Policy (“CP”). Where the CP defines policies that all applicable Apple Sub-CA’s are required to follow, this CPS provides more detailed information about the practices employed by the Developer ID Sub-CA relating to certificate lifecycle services, such as issuance, management, revocation, renewal, and rekeying, as well as details relating to other business, legal, and technical matters specific to the Developer ID Sub-CA, collectively referred to as the Developer ID Public Key Infrastructure (“Developer ID PKI”).

Apple Inc. (“Apple”) established the Apple Root Certification Authority (“Apple Root CA”) and the Apple PKI in support of the generation, issuance, distribution, revocation, administration and management of public/private cryptographic keys that are contained in CA-signed X.509 Certificates. The Apple PKI is intended to support internal and external Apple cryptographic requirements, where authentication of an organization or individual presenting a digitally signed or encrypted object to a Relying Party is of benefit to participants in the Apple PKI.

1.1. Trademarks

Apple, Mac, OS X, and iOS, are trademarks of Apple Inc., in the United States and other countries.

1.2. Table of acronyms

Please refer to the CP for a table of acronyms used within this document.

1.3. Definitions

For the purposes of this CPS:

- “Subscriber” means a Developer or Developer’s Agent who utilizes a Certificate from the Developer ID Sub-CA.
- “Developer” means an individual or organization that has registered with Apple in the Mac Developer Program and has received a Developer Identification Certificate (defined below).
- “Developer’s Agent”, or “Agent” means a person authorized to act for and execute responsibilities for a company (principal) when dealing with third parties. An Agent can enter into binding agreements on the principal’s behalf and is responsible for any liability for the principal if the agent causes harm while carrying out his or her duties. The principal is responsible for the acts of the agent, and the agent’s acts are like those of the principal.
- “Product” means a Developer application intended for use on an Apple platform.

Please refer to the CP for all other definitions used within this document.
2. General business practices

This section establishes and sets forth the general business practices of the Developer ID Sub-CA.

2.1. Identification

The practices set forth in this CPS apply exclusively to the Developer ID Sub-CA. This CPS is structured similarly to the CP, disclosing details of the practices employed by the Developer ID Sub-CA that address the more general requirements defined in the CP. This document assumes the reader is familiar with the general concepts of digital signatures, certificates, and public-key infrastructure. If the reader is new to Public Key Infrastructure concepts, the reader may choose to consult the introduction and overview of the WebTrust Program for Certification Authorities, a guide published by the American Institute of Certified Public Accountants (AICPA) and freely available for download from their web site, www.aicpa.org. The guide contains an overview of PKI, including an orientation on key concepts such as digital signatures, asymmetric key pairs, certification authorities, registration authorities, policy and practice statements, and business issues and considerations.

For the purposes of this CPS, the term Apple PKI refers collectively to Apple PKI Service Providers and End Entities. Apple PKI Service Providers consist of (1) Apple Certification Authorities ("CAs"), including the Apple Root CA and the Developer ID Sub-CA, and their related management teams that generate, issue, distribute, revoke and manage cryptographic keys and Certificates, (2) Apple Registration Authorities ("Apple RA"), and (3) the Apple CA Policy Authority ("Apple PA," or "PA"). End Entities are Subscribers of Certificates.

The Developer ID Sub-CA issues and administers Certificates in accordance with policies in the Apple CP document.

2.2. Community and applicability

This CPS is applicable to the following certificates issued by the Developer ID Sub-CA:

- Developer ID Installer Package Signing Certificates
- Developer ID Application Code Signing Certificates
- Developer ID Application and Kernel Extension Code Signing Certificates

Certificates used exclusively for functions internal to Apple Products and/or Apple processes are not included within the scope of this CPS.

2.3. Contact details

The CA’s Certificate Policies are administered by the Apple CA Policy Authority. The contact information for this CPS is:

Apple CA Policy Authority
C/O General Counsel
Apple Inc.
1 Infinite Loop
Cupertino, CA 95014

(408) 996-1010
policy_authority@apple.com
2.4. Apportionment of liability

A Subscriber agreement is incorporated in the Mac Developer Program License Agreement. There is not an applicable Relying Party agreement for Developer ID Sub-CA Certificates as the relying parties are internal to Apple. Except as provided herein, parties external to Apple are expressly prohibited from placing reliance on any aspects of the Developer ID PKI.

2.4.1. Warranties to Subscribers and Relying Parties

The Developer ID Sub-CA does not warrant the use of any Certificate to any Subscriber or Relying Party.

2.4.2. CA disclaimers of warranties

To the extent permitted by applicable law, subscriber agreements disclaim warranties from Apple, including any warranty of merchantability or fitness for a particular purpose.

2.4.3. CA limitations of liability

To the extent permitted by applicable law, subscriber agreements shall limit liability on the part of Apple and shall exclude liability for indirect, special, incidental, and consequential damages.

2.4.4. Subscriber warranties

Subscriber agreements shall require Subscribers to warrant that:

- They will take no action to interfere with the normal operation of a Developer ID Sub-CA Certificate or products that rely on such certificates;
- They are solely responsible for preventing any unauthorized person from having access to the Subscriber’s private key stored on any device for which the Subscriber is developing software for Apple platforms; and
- The Developer ID Sub-CA Certificates are being used exclusively for authorized and legal purposes.

2.4.5. Private key compromise

Apple reserves the right to revoke any Certificates, without notice, if it believes the Subscriber’s private key has been compromised, or upon request from the Subscriber.

2.4.6. Subscriber and Relying Party liability

Subscribers and Relying Parties will hold Apple harmless from any and all liabilities, losses, actions, damages or claims (including all reasonable expenses, costs, and attorneys fees) arising out of or relating to their use of any digital Certificate.

2.5. Financial responsibility

This section sets forth policies as requirements on the Developer ID Sub-CA related to indemnification by Relying Parties and disclosure of fiduciary relationships in relying party agreements.
2.5.1. **Indemnification by Subscribers and Relying Parties**

Any subscriber or relying party agreement may, at Apple’s discretion, include an indemnification clause by Subscribers and/or Relying Parties.

2.5.2. **Fiduciary relationships**

There is no fiduciary relationship between Apple and Subscribers and/or Relying Parties.

2.6. **Interpretation and enforcement**

Interpretation and enforcement of any subscriber or relying party agreement is governed by the terms and conditions in the Mac Developer Program License Agreement.

2.6.1. **Governing law**

Governing law is set forth in the Mac Developer Program License Agreement.

2.6.2. **Severability, survival, merger, notice**

Severability, survival, merger and notice if applicable, is governed by the terms and conditions in the Mac Developer Program License Agreement.

2.6.3. **Dispute resolution procedures**

Dispute resolution procedures are set forth in the Mac Developer Program License Agreement.

2.7. **Fees**

This section sets forth policies associated with any fees charged to Subscribers for certification authority services for each type of Certificate.

2.7.1. **Certificate issuance or renewal fees**

No fees are charged for this service. Digital certificates are available at no additional cost to members of the Mac Developer Program. Certificates are valid for their specified duration unless otherwise revoked.

2.7.2. **Certificate access fees**

No fees are charged for this service.

2.7.3. **Revocation or status information access fees**

No fees are charged for this service.

2.7.4. **Fees for other services**

No other fees are charged for CA services.

2.7.5. **Refund policy**

Not applicable.
2.8. Publication and Repository

The Developer ID Sub-CA operates a private repository which is not publicly accessible.

2.8.1. Publication of CA information

The latest version of this CPS for the Developer ID Sub-CA can be found at http://www.apple.com/certificateauthority.

2.8.2. Frequency of publication

Public key Certificates issued by the Developer ID Sub-CA are made available to Subscribers via the Apple Developer website upon issuance. Certificate status is made available via the Online Certificate Status Protocol ("OCSP"). Refer to the Authority Information Access ("AIA") extensions in the Certificates for the status information method used.

2.8.3. Access controls

Subscribers shall have access to their Certificates through the Apple Developer website. There is no public repository of certificates. Certificate status information is publicly available through OCSP as described above. Apple has implemented logical and physical security measures to prevent unauthorized persons from adding, deleting, or modifying repository entries.

2.9. Compliance audit requirements

The Developer ID Sub-CA adopts wholly all policies under this section in the CP.

2.10. Conditions for applicability

This section sets forth practices related to the use of the Developer ID Sub-CA.

2.10.1. Permitted uses

The Developer ID Sub-CA will create keys, manage keys, issue Certificates, manage key life cycles, manage certificate life cycles, operate a private repository, and perform other functions to support distribution for the following types of Certificates:

- Developer ID Installer Package Certificates: This type of Certificate may be used by Developers authorized to sign a software installer package enabling it to be installed on OS X.
- Developer ID Application Code Signing Certificates: This type of Certificate may be used by Developers authorized to sign a software package enabling it to be run on OS X.
- Developer ID Application and Kernel Extension Code Signing Certificates: This type of Certificate may be used by Developers authorized to sign applications and/or kernel extensions enabling them to be run on OS X.

2.10.2. Limitations on use

The Developer ID Sub-CA will not allow its Certificates to be used to create a certification authority or to allow its private key to sign a Certificate issued by another certification authority.

Except for internal-use Certificates, the Developer ID Sub-CA Certificates shall not be used for any purpose that is not identified in this CPS § 2.10.1 as a permitted use.
2.11. Obligations
This section sets forth policies related to the obligations of the Developer ID Sub-CA.

2.11.1. General Developer ID Sub-CA obligations
The Developer ID Sub-CA shall:

• Conform its operations to the Apple CP and to this CPS as the same may be amended from time to time.
• Issue and publish Certificates in accordance with the Apple CP and this CPS.
• Revoke Certificates issued by the Developer ID Sub-CA, upon receipt of a valid request to revoke the Certificate from an authorized Subscriber. The validity of the request and the authorization of the person making the request will be determined by the Developer ID Sub-CA.
• Make certificate status information available via OCSP in accordance with the Apple CP. As applicable, the CA shall notify the subscriber that the certificate has been revoked.

2.11.2. Notification of issuance by Developer ID Sub-CA to Subscriber
Notification to Subscribers is deemed to have taken place when newly issued Certificates are made available via the Apple Developer website.

2.11.3. Notification of issuance by Developer ID Sub-CA to others
The Developer ID Sub-CA does not provide notification of issuance to parties other than the Subscriber.

2.11.4. Notification of revocation by Developer ID Sub-CA to Subscriber
Notification of revocation to a Subscriber is deemed to have taken place upon e-mail notification to the Subscriber.

2.11.5. Notification of revocation by Developer ID Sub-CA to others
The Developer ID Sub-CA does not provide notification of certificate revocation by email, except to the Subscriber. Certificate status information is publicly available through OCSP.

2.11.6. Registration Authority obligations
An external RA is not used. The Developer ID Sub-CA performs limited RA services to provide reasonable assurance that Certificates are only issued to members of the Mac Developer Program.

2.11.7. Subscriber obligations to Developer ID Sub-CA
Subscribers are obligated to:

• Safeguard their private key from compromise.
• Use their Certificates exclusively for legal purposes.
• Promptly request that the Developer ID Sub-CA revoke a Certificate if the Subscriber has reason to believe there has been a compromise of the Certificate’s associated private key, or for any of the reasons described in the Subscriber agreement. A request for revocation is initiated by sending an email to product-security@apple.com.

• Take no action to transfer their Certificate to any third party.

2.11.8. **Relying Party obligations to Developer ID Sub-CA**

There are no relying party obligations as the relying parties are internal to Apple.
3. Key life cycle management

This section sets forth practices related to the key life cycle management controls of the Developer ID Sub-CA.

3.1. Developer ID Sub-CA key generation

The Developer ID Sub-CA signing key generation occurs using a secure cryptographic device meeting the requirements as described in CP §3.2.

The Developer ID Sub-CA shall sign Certificates that may be used to associate a particular Developer with a particular software application intended for use on an Apple product.

The Developer ID Sub-CA private key will cease to be used, and be replaced at the end of a designated period, up to a maximum of eight (8) years, or when a compromise is known or suspected.

3.2. Developer ID Sub-CA private key protection

3.2.1. Developer ID Sub-CA private key storage

Each Developer ID Sub-CA private key is stored in a Hardware Security Module (HSM) that is tamper resistant and certified at a minimum level of FIPS 140-1 Level 4.

3.2.2. Developer ID Sub-CA private key control

There is a separation of physical and logical access to each Developer ID Sub-CA private key, and a minimum of two individuals is required for physical access to the HSM where the Sub-CA’s private keys are stored. The private key is stored in encrypted key fragments with split knowledge and ownership and $m$ of $n$ fragments are required for private key recovery.

3.2.3. Developer ID Sub-CA key escrow

The Developer ID Sub-CA private key shall not be placed in escrow.

3.2.4. Developer ID Sub-CA key backup

Developer ID Sub-CA private keys are backed up for recovery purposes. Backups are stored in a secured environment, and $m$ of $n$ key fragments are required for logical recovery.

3.2.5. Developer ID Sub-CA key archival

The Developer ID Sub-CA shall archive any necessary keys for a period of time sufficient to support the responsibilities of the Developer ID Sub-CA.

3.3. Developer ID Sub-CA-provided Subscriber key management

The Developer ID Sub-CA does not provide Subscriber key management services.

3.4. Developer ID Sub-CA public key distribution

The Developer ID Sub-CA public key will be contained in an X.509 Certificate that may be provided to Subscribers as necessary to support the Developer ID PKI.
3.5. Developer ID Sub-CA key changeover

When a new private key is required, a new Developer ID Sub-CA signing key pair will be generated and all subsequently issued certificates are signed with the new private signing key. The corresponding new Developer ID Sub-CA public key Certificate may be provided to Subscribers as necessary to support the Developer ID PKI.
4. Certificate life cycle management

This section sets forth practices related to the certificate life cycle management controls of the Developer ID Sub-CA.

4.1. Certificate Suspension

The Developer ID Sub-CA does not support suspension of certificates.

4.2. Certificate registration

The issuance of a Certificate is contingent upon the requesting Subscriber being an eligible member of the Mac Developer Program. The Apple Developer website verifies that the account is one that is eligible for the issuance of Developer ID certificates and that, if applicable, Mac Developer subscription payments are current.

Eligible Subscribers create a Certificate Signing Request ("CSR") using a corresponding private/public key pair generated on the client computer. Subscribers then upload completed CSRs to the Apple Developer website.

Upon receipt, the CSR is processed by the Apple Developer website for validity. Once the CSR is validated and a Certificate is issued by the Developer ID Sub-CA, the Subscriber is notified that the Certificate is available for download on the client computer.

The name associated with an individual Developer Identification Certificate is either the individual Subscriber’s name or the Subscriber’s organization name as applicable.

4.3. External RA requirements

An external Registration Authority is not utilized by the Developer ID Sub-CA.

4.4. Certificate renewal

When a Certificate expires the Subscriber will return to the Apple Developer website and submit a new CSR. This is the same process used at initial Certificate issuance.

4.5. Certificate rekey

The Developer ID Sub-CA does not rekey certificates. Compromised keys result in completely new key sets and certificates being issued.

4.6. Certificate issuance

Certificates are issued to the ISO 9594/X.509 standard, Certificates are signed using the Developer ID Sub-CA signing key.

4.7. Certificate acceptance

Once the Developer ID Sub-CA generates a Certificate, developers will be able to download the Certificate from the Apple Developer website.

4.8. Certificate distribution

Certificates will be distributed to the Developer via the Apple Developer website or web services.
4.9. Certificate revocation

The Subscriber may initiate a revocation request by sending an email to product-security@apple.com. The request for revocation will then be evaluated by Apple.

Certificates may be revoked by the Developer ID Sub-CA for the reasons described in the Subscriber agreement.

4.10. Certificate suspension

Certificate suspension is not supported. Instead, Subscribers are required to revoke their current Certificates and request new ones.

4.11. Certificate status

The Developer ID Sub-CA utilizes Online Certificate Status Protocol (OCSP) to provide information whether a certificate has been revoked. Refer to the Authority Information Access (“AIA”) extensions in the Certificates for the status information method used.

4.11.1. OCSP usage

Subscribers may use OCSP to determine the status of a particular Certificate. Revoked Certificates remain marked as “revoked” for the certificate lifetime. A delegate leaf Certificate is used to sign all OCSP responses. This leaf is signed by the Developer ID Sub-CA’s private key.

OCSP status requests must contain at a minimum the certificate serial number to receive a valid response. Once an OCSP request has been validated there will be a signed response back to the requestor indicating the status of the Certificate and showing the request was successful. Failed OCSP requests will generate a failure status back to the requestor.

4.12. Certificate profile

Certificates issued by the Developer ID Sub-CA shall conform to the X.509 version 3 Certificate format, and shall contain the following elements:

<table>
<thead>
<tr>
<th>Field/Attribute</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issuer DN</td>
<td>C = US, O = Apple Inc., OU = Apple Certification Authority, CN = Developer ID Certification Authority</td>
</tr>
<tr>
<td>CRL Distribution Points and/or Certificate Authority Information Access</td>
<td>URL of the location where a Relying Party can check the status of a certificate.</td>
</tr>
</tbody>
</table>

Individual Developer ID Sub-CA certificate profiles also contain the following:

4.12.1. Installer Package Signing Certificates

<table>
<thead>
<tr>
<th>Field/Attribute</th>
<th>Critical</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signature Algorithm</td>
<td>N/A</td>
<td>SHA-2 with RSA Encryption</td>
</tr>
</tbody>
</table>
### Key Usage
- **Key Usage:** Yes
- **Digital Signature:**

<table>
<thead>
<tr>
<th>Extended Key Usage</th>
<th>Yes</th>
<th>Apple Custom EKU (1.2.840.113635.100.4.13)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Custom Extensions</td>
<td>Yes</td>
<td>Apple Custom Extension (1.2.840.113635.100.6.1.14)</td>
</tr>
<tr>
<td>Basic Constraints</td>
<td>Yes</td>
<td>Certification Authority = No</td>
</tr>
<tr>
<td>Certificate Policy</td>
<td>No</td>
<td>Apple Certificate Policy (1.2.840.113635.100.5.1)</td>
</tr>
</tbody>
</table>

#### 4.12.2. Application Code Signing Certificates

<table>
<thead>
<tr>
<th>Field/Attribute</th>
<th>Critical</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signature Algorithm</td>
<td>N/A</td>
<td>SHA-2 with RSA Encryption</td>
</tr>
<tr>
<td>Key Usage</td>
<td>Yes</td>
<td>Digital Signature</td>
</tr>
<tr>
<td>Extended Key Usage</td>
<td>Yes</td>
<td>Code Signing (1.3.6.1.5.5.7.3.3)</td>
</tr>
<tr>
<td>Custom Extensions</td>
<td>Yes</td>
<td>Apple Custom Extension (1.2.840.113635.100.6.1.13)</td>
</tr>
<tr>
<td>Basic Constraints</td>
<td>Yes</td>
<td>Certification Authority = No</td>
</tr>
<tr>
<td>Certificate Policy</td>
<td>No</td>
<td>Apple Certificate Policy (1.2.840.113635.100.5.1)</td>
</tr>
</tbody>
</table>

#### 4.12.3. Application and Kernel Extension Code signing Certificates

<table>
<thead>
<tr>
<th>Field/Attribute</th>
<th>Critical</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signature Algorithm</td>
<td>N/A</td>
<td>SHA-2 with RSA Encryption</td>
</tr>
<tr>
<td>Key Usage</td>
<td>Yes</td>
<td>Digital Signature</td>
</tr>
<tr>
<td>Extended Key Usage</td>
<td>Yes</td>
<td>Code Signing (1.3.6.1.5.5.7.3.3)</td>
</tr>
<tr>
<td>Custom Extensions</td>
<td>Yes</td>
<td>Apple Custom Extension (1.2.840.113635.100.6.1.13)</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>Apple Custom Extension (1.2.840.113635.100.6.1.18)</td>
</tr>
<tr>
<td>Basic Constraints</td>
<td>Yes</td>
<td>Certification Authority = No</td>
</tr>
<tr>
<td>Certificate Policy</td>
<td>No</td>
<td>Apple Certificate Policy (1.2.840.113635.100.5.1)</td>
</tr>
</tbody>
</table>
4.13. Integrated circuit cards

Not applicable.
5. Environmental controls

This section sets forth practices related to the environmental controls of the Developer ID Sub-CA.

5.1. CPS administration

Apple has designated a management group called the Policy Authority (PA) with final authority and responsibility for specifying and approving the Developer ID Sub-CA’s CPS.

This authorized body has performed an assessment to evaluate business risks and determine the security requirements and operational procedures to be included in the CPS for the following:

- Key life cycle management controls
- Certificate life cycle management controls
- CA environmental controls

The Developer ID Sub-CA makes available its public CPS to all Subscribers and Relying Parties, including any revisions that occur from time to time.

Any changes to the Developer ID Sub-CA’s CPS, along with the effective date of the changes, shall be reviewed by the PA, and posted in a timely manner.

5.2. CA termination

As set forth in this section, any decision to terminate the Developer ID Sub-CA shall be approved by a member of the Apple Executive Team prior to the effective date of termination.

At the time of termination, Apple will develop a termination plan addressing the following:

- Provision of notice to related parties affected by the termination,
- Revocation of certificates issued by the Sub-CA,
- Preservation of the Sub-CA’s archives and records

5.3. Confidentiality

The Developer ID Sub-CA shall keep the following information confidential at all times:

- All private signing and client authentication keys
- Security and annual audits and security parameters
- Personal or non-public information about Developer ID Sub-CA Subscribers
- Security mechanisms

Except as required to support the WebTrust audit performed by an independent external audit firm, confidential information should not be released to third parties unless required by law or requested by a court with jurisdiction over the CA. The information will be kept confidential even after the termination of the CA.

The following information shall not be considered confidential:

- Information included in Certificates
- The Developer ID Sub-CA public Certificate
• Information contained in the CA’s CPS and CP documents
• Any Certificate status or Certificate revocation reason code

5.4. Intellectual property rights
Certificates issued by the Developer ID Sub-CA, information provided via the OCSP, the CPS and the CP are the property of Apple.

5.5. Physical security
Physical protection is achieved through the creation of clearly defined security perimeters with appropriate physical barriers to entry around the business premises and Developer ID Sub-CA facilities. Details of the physical security policies and procedures are in appropriate internal security documents.

Equipment is located or protected to reduce the risks from environmental threats and hazards, including but not limited to power and air conditioning, disruption or failure, water exposure, fire, telecommunications disruption or failure and opportunities for unauthorized access.

Media maintained securely within the Developer ID Sub-CA facilities and is subject to the same degree of protection as the CA hardware.

At end of life, cryptographic devices are physically destroyed or zeroized in accordance to manufacturers’ guidance prior to disposal.

5.6. Business continuity management
The Developer ID Sub-CA has business continuity plans to maintain or restore the Developer ID Sub-CA’s business operations in a timely manner following interruption or failure of critical business processes.

5.7. Event logging

5.7.1. Archiving
The Developer ID Sub-CA archives event journal data on a periodic basis.

A risk assessment has been performed to determine the appropriate length of time for retention of archived event journals.

The Developer ID Sub-CA maintains archived event journals at a secure off-site location for a predetermined period.

5.7.2. Event journal reviews
Current or archived event journals may only be retrieved by authorized individuals and only for valid business or security reasons.

Event journals are reviewed periodically.

The review of current and archived event journals includes the identification and follow-up of exceptional, unauthorized, or suspicious activity.
6. Revision history

<table>
<thead>
<tr>
<th>Issue Number</th>
<th>Issue Date</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>02/16/2012</td>
<td>Initial release.</td>
</tr>
<tr>
<td>1.1</td>
<td>06/10/2013</td>
<td>Updates to reflect the addition of the Application and Kernel Extension Code Signing Certificate Profile.</td>
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