

# How to Request User Certificate

## 사용자 인증서 신청 방법

# KISTI Certification Authority

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## Introduction

Welcome to KISTI Certification Authority web site.

KISTI Certification Authority is operated by the Grid Technology Research Team of KISTI (Korea Institute of Science and Technology Information).

The authority satisfies requirements from APGrid PMA.

Certificate issues by the KISTI Grid CA are compatible with the Globus Toolkit middleware.

The public key cryptography is the basis of grid security architecture.

Certification Authority(CA) is a mandatory component of public key infrastructure(PKI).

Please read "[Overview of the Grid Security Infrastructure](#)" from Globus site.

Global Science experimental Data hub Center  
National Institute of Supercomputing and Networking  
Korea Institute of Science and Technology Information  
245 Daehak-ro, Yuseong-gu 3414 Daejeon, Republic of Korea



4. Please send an notification e-mail to [kisti-grid-ca@kisti.re.kr](mailto:kisti-grid-ca@kisti.re.kr) after sending a FAX.
5. KISTI CA staff will respond immediately when we receive your request form.
6. KISTI CA will send an Web Access Client Certificate(WACC) to your e-mail, if everything is okay.  
Install this certificate in your web browser to access to the on-line certificate request service web site.  
Your PIN number is the password for your WACC.  
Read the following instruction to install the web access certificate(WACC) in your browser.

[How to Install Web Access Client Certificate in the Browser](#)

## **Step 2. Request a Grid Certificate from KISTI CA**

- If you are applying for a **user certificate**:

Click [User Certificate Request](#)



[How to Request User Certificate \(Korean\)](#)



[How to Request User Certificate \(English\)](#)

- If you are applying for a **host/service certificate**:

Click [Host/Service Certificate Request](#)



[How to Request Host Certificate \(Korean\)](#)



[How to Request Host Certificate \(English\)](#)

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## Instruction for requesting an User Certificate

By requesting a certificate, you indicate that you accept the [Certificate Policy and Certificate Practice Statement](#) and that you agree to the Subscriber Obligation (Section 1.3.3) specified in the document.

### Step 1. Enroll KISTI CA

Before requesting user certificate from KISTI CA, you are required to enroll KISTI CA.

### Step 2. On-line Certificate Request

[Click here to request user certificate in the Online Request Service.](#)

If you don't have a WACC in your browser, the access to the web page is not permitted.

\* NOW This function **SUPPORT ALL KIND OF BROWSERS** such as *Google Chrome, Edge, FireFox and Safari, etc.* IE(*Internet Explorer*) mode of Edge no longer necessary.

\*\* [DO NOT FORGET!] After uploading your CSR, you can **download PIN-protected ZIP file** of your private key file (file name is like "#csrid\_privateKey.zip") from the result page.

\*\*\* The ZIP file contains sensitive information and is encrypted for security. You'll find the **PIN number in the email** "[KISTI CA] User registration completed".

You can UNZIP the private key zip file using the command below:

```
# unzip -P PIN_NUMBER /path/to/csrid_privateKey.zip
```

It is crucial to back up your privatekey.pem file in a secure location. If you want to protect it with a password, use the following command:

```
# openssl rsa -aes256 -in your_private_key.pem -out your_private_key_with_password.pem  
(For maximum security, we strongly recommend using a passphrase of at least 12 characters.)
```

**Please read these instructions carefully before proceeding.**

### Step 3. Download and Import Certificate

Once your certificate is issued, we'll publish it on the [Issued Certificates](#) and send out a confirmation to inform your certificate is ready. You can simply download your certificate via the link provided in the e-mail and import it into your browser.

### 인증서 선택

pki.gridcenter.or.kr:443에 대해 인증을 받으려면 인증서를 선택하세요.

대상	발행기관	일련번호
[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]
shna@kisti.re.kr	pki.gridcenter.or.kr	0198

인증서 정보

확인

취소

- Select your WACC (Web Access Control Certificate) issued when you register.
- 사용자 등록 시 발급받은 WACC를 선택하세요

# KISTI Certification Authority

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- Request Certificate (v3.0)
- My CSR List (v3.0)
- My CERT List (v3.0)
- KISTI CA Home

## Request Certificate

### KISTI CA (v3.0)

- If you are applying for a **user certificate**, [User Certificate Request](#)

\* NOW This function SUPPORT ALL KIND OF BROWSERS such as *Google Chrome, Edge, FireFox and Safari, etc.*  
*IE(Internet Explorer) mode of Edge no longer necessary.*

\*\* [DO NOT FORGET!] After uploading your CSR, you can download your private key file (csrid\_privateKey.pem) from  
the result page.

- If you are applying for a **host/service certificate**, [Host Certificate Request](#)

# KISTI Certification Authority

- Home
- Request Certificate (v3.0)
- My CSR List (v3.0)
- My CERT List (v3.0)
- KISTI CA Home

## Request User Certificate

### User Certificate Information:

\* You don't have any valid user certificate. You can proceed Step 1 and 2.

**Step 1.** Check the following form, and click the 'Generate CSR' button.

KISTI CA server will create a CSR, which will be shown in the CSR text area of the step 2.

\* NOW This function SUPPORT ALL KIND OF BROWSERS such as *Google Chrome, Edge, FireFox and Safari, etc.*

\*\* IE(Internet Explorer) mode of Edge no longer necessary.

Country: KR

Organization: KISTI

Organization: KISTI

Common Name: 60115390 causer GSDC

**Generate CSR**

**Step 2.** Upload CSR

**[Important]** You can download private key(pem) from the CSR upload result page.

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Country: KR

Organization: KISTI

Organization: KISTI

Common Name: 60115390 causer GSDC

```
-----BEGIN CERTIFICATE REQUEST-----  
MIICKTCAXKCAQAwTDELMkGA1UEBhMCS1IxDjAMBgNVBAoMBUtJU1RJMQ4wDAYD  
VQQKDAVL SVNUSTEdMsGA1UEAwuUNjAxMTUzOTAgY2F1c2VyIEdTREMwggiMA0G  
CSqGSIB3DQEBAQUAA4IBDwAwggEKAoIBAQDnYcERuplg5Eey0KfXRQuxO08Dclv  
SLe113Pp5DFxO+pFltuwh0BWzENkIOjpAJXYzm7lhhUByy3NrCnHy4Kv14nyIlkp  
SIj+5vgwMBOGvOvY4GEYi7ZR4UEdx EhWfO9uQ2XFRI1Bu05/Yp0iGG6COX0JBxM  
911Y8e8GUwNmqnkGpNLu8hWktR2dU+8AFsSYrIjbCVTob5nm+FNq+4cut2CFvsv  
Flbkly9rozs8FdFCaXY25wRxlf6gltK53WFg6gqTKWqlSqx3S92sAlZBMWVuJLxF  
YQcfuz+OLHXK6vWAHadZsuuN9yWqyt+ZbOuTq+A5xOyx0kgkVsRZYAz1AgMBAAGg  
ADANBgkhkiG9w0BAQsFAAOCAQEAI1FKga2fy/octJdi11Usqwpt9OnTyYFV8IK  
4YigdLiEW0fSu9tV9sM15lpshOTspYkz/Els71dgu2LHAD/fPBbgrk6HDenLB  
KiM92Mb u2csxnpmOom9g/fD2mpCmjjkNWOjHBMIi3xZ08mHGDKntA4CoVZZiFoz  
VLwrxyoNEoOxDfw7cWeYA6QECLowZo8HgKeTOLOAexHZkm1689EOYv1Eis397LHH  
qt/XurkdyKM8YCj+7uXEHXvHg1MG3xgUM1ISFXOzy393CWHrxW+gAlJLtcGdZLs2  
Huw/4RF5QoI FjU5h5r9YtXU4LFWn/5xy1QipnBu8yjwtIVhiZg==  
-----END CERTIFICATE REQUEST-----
```

**Step 2.** Upload CSR

**[Important]** You can download private key(pem) from the CSR upload result page.

KISTI Certification Authority

## Request User Certificate

Your CSR has been requested to KISTI CA.

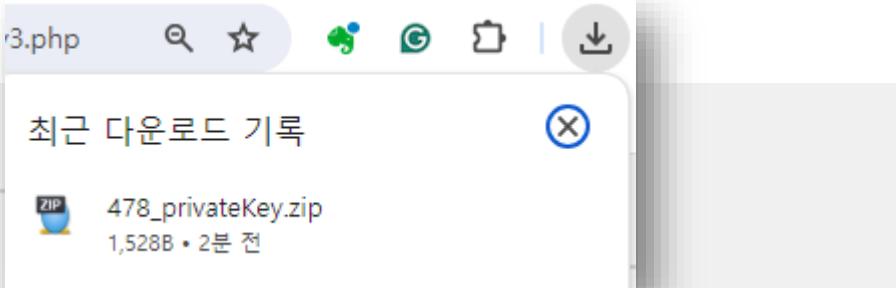
KISTI CA will review your CSR, before issuing your certificate.

After KISTI CA issue your certificate, a notification e-mail will be sent to you.

**!Important!** You can not back to this page. Please DO NOT MISS to download your private key zip file!

**!Important!** The ZIP file contains sensitive information and is encrypted for security. You'll find the PIN number in the email "[KISTI CA] User registration completed".

**Private Key** **Download**

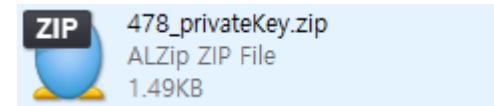
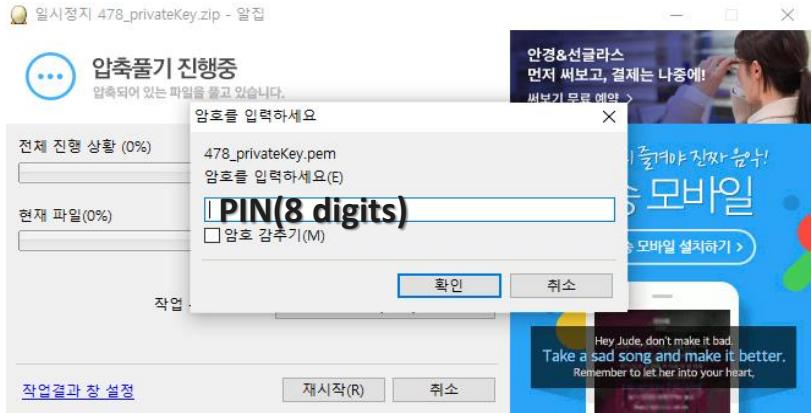


A screenshot of a web browser window showing a download dialog. The dialog is titled "최근 다운로드 기록" (Recent Downloads) and lists a file named "478\_privateKey.zip" which is a ZIP file (indicated by the blue folder icon). The file size is 1,528B and it was downloaded 2 minutes ago. The browser interface includes a search bar, a star icon, and other standard toolbar icons.

# 개인키 압축 풀기

## Extract Private Key

### Window



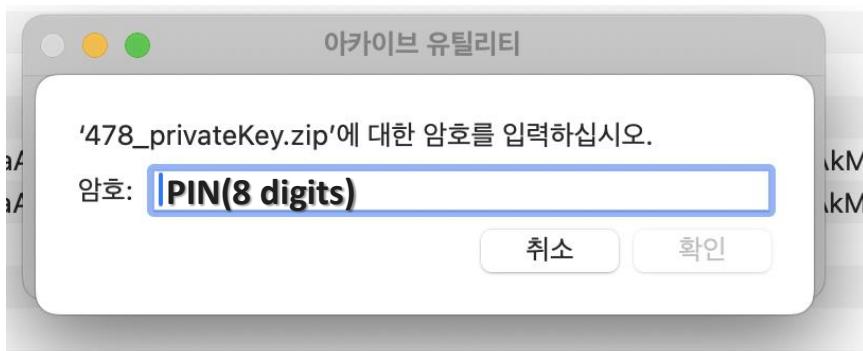
PIN(8 digits)



### Linux

```
# unzip -P PIN_NUMBER /path/to/csrid_privateKey.zip
```

### MAC



-----BEGIN PRIVATE KEY-----  
Ruplg5EeyihhUBv3N  
EFRI18w05jbCVTo5n  
TKWqLsqx3  
S92sALZBMWvuJLxFYQcFuz+OLHXK6vWAHadZsuumN9y/wqyt+zB0uTq+A5x0yx0kgk  
VsRZA1z1AgMBAECggEAx4MVvkjHmzCEAbz1v8GJsE5upTsMQFeubaHbbw5wKFX  
8oP0ick64Nm0yVLGvitor7t/QFjs4RuX0hMr9KY1xaFq3hkL4vdwuG1FVygMA  
ZFUzh3vEtgYC6D03HKST/XHq1gdQrbz/PhwBmipy06Lpf0mByQTYACBZKaB0b  
vTv9E28SWnuj4JDyIys+MqszdhK08uSQtXB0ree3l0Rrqu3d7tLHcKJyOjh1mV  
OUN7pmzhybjzYly0A7RF03AhrNnFVKI211kHR+Zk9nfXjgJrmmN6XncigTc0cnlV0  
yYZ3q9NzpqWNgNpLcG50opVBA7zgVT4D90vB7NIkXQK8gQD50AShoxqed9DNNhTc  
zdwUtr9oTGuRMjgRF08pfvMSy0ufZep5dW+OB8c9Z5TQdqjXXoYw+tcKzLk9zcB5  
Zw012qbFT/wXupAG2i/k89fjInhUmUvrJyuiwGnye/oP3RxELQeUI4vQ+rmaBOHR  
MhejzxFQRpNzHBWB8/H30SVBZwKbQDtrX0+QtHo4bzNk6ELGRLABDconI+ic0j  
b4BFpvbhzhv+jXNV1P36kDhJ66BDNaI+xHSG02xg30qYAbvlr45AUnK0oP6aUMDD  
0s2TLhl3Gd7R82hanH0/sM4bSatSLiy+TL5hZCtxXUyeIJPMahC88VOPUUejDsR8  
bphoJHA5QwkGfeEwASPVgg0SNV8qf92ZA79oxRYGkPn37zeoTgNdJae30HCuxI  
J5A4aa+L5hfjzj7opMdRfa6nbMgd7uhVYlb9+jgaAU/0X71Y5El/YLPb90jJgb  
J7KT1xTu2s+VxdwcFMzrYjBc7tHksWfxMuCSXBLq9zU4dTzOJ4B0Dz+taoGATXM3  
WM6VaAEpcT4mQGORYteEWuDMz/xxpUw@Y5paNuRar6z0HdsLh1NS/ikc3sbCx  
GBBnH1LQldtW8KHyEnVlnyRt2utL8KyhFAF7JmswBDoDmRMs1ZLY/Rlpj  
xgDKV0q76Ntczkr6LZqxnuXDafmHbsDQPjdlCgYBR5FbPsfoTc4D0tbN0oW1y  
hTca9s1Y5hzaYzWWRP8jnMcEgt3GDLc+cIEVPxEkQ7IXifBoOny7UTJ1ffjnV  
r84vbG+SPCeNp3RLtsDssjLSqkf9wRqjmgX8rCF6Tyb6LdQiuhz/bGr7IRCGNt0  
-----END PRIVATE KEY-----

## 인증서 다운로드

## Download User Certificate

[KISTI Certification Authority \(gridcenter.or.kr\)](http://gridcenter.or.kr)

## **Issued Certificates List**

Issuer subject: C=KR, O=KISTI, CN=KISTI Certification Authority

Serial No.	Serial No. (hex)	Type	Download		Sum
			pem	crt	
4523	11ab	person	<a href="#">pem</a>	<a href="#">crt</a>	(C:\KB\O_KISTI\O_KISTI\SN=4523.p12)
4522	11aa	host	<a href="#">pem</a>	<a href="#">crt</a>	N=1
4521	11a9	person	<a href="#">pem</a>	<a href="#">crt</a>	N=1
4520	11a8	host	<a href="#">pem</a>	<a href="#">crt</a>	N=1
4519	11a7	host	<a href="#">pem</a>	<a href="#">crt</a>	InPrivate 창에서 링크 열기 N=1
4518	11a6	host	<a href="#">pem</a>	<a href="#">crt</a>	분할 화면 창에서 링크 열기 N=1
4517	11a5	host	<a href="#">pem</a>	<a href="#">crt</a>	N=1
4516	11a4	host	<a href="#">pem</a>	<a href="#">crt</a>	(으)로 링크 저장 N=1
4515	11a3	host	<a href="#">pem</a>	<a href="#">crt</a>	링크 복사 N=1
4514	11a2	host	<a href="#">pem</a>	<a href="#">crt</a>	N=1



-----BEGIN CERTIFICATE-----



-----END CERTIFICATE-----

-----BEGIN CERTIFICATE-----

MIIITTCCCAJQ9AwIBAgIUCd8sWdQyJkRjUz  
DjAMBgNVBAoTBUTJU1RJMSYwJAYDVQQ  
dGhvcmlDeTAeFwOyNDAzMTEwMjE0MjN  
BAYTAKtSMQ4wDAYDVQQKDAVLSVNUSTEOMAwGA1UECgwFS01TVEkxHDAAbGvNVBAMM  
EzQ0ODEwNDczIElseIWvbIBZZ#8wg9E1MA0GCSqGSIb3DQEBAQUAA4IBDwAwggEK  
AoIBAQDguaBKCeCPyALhC+Jq842sNWHeUwsHJVV+hIJPoEkEwPqFZG3xM6Mf31Xz  
8srp0InZGgGrghVZ/d6dL1try+80xV1fMzsBXDer6Z9gQ6ap8hVRsgqjNM6qvY6  
PZ3MhbWBv/Eqyh2vJW1ZLKab3MDS1QBJ/QTgxTxVuAzcmEVAKObRGo8Zk3W+iEtK  
sdFvGn#0qaq9Bz/8Gt9rm13Ly0/PDIzdpexD06JFdgnlwOvd7qDZ44CB4ctCtzVhz  
xkK4Kn#5WEr8usd61tk20Mq26yvbZZZAXkBj8ku13E7/#U90EiGDG5+K26HNTZbe  
6XBF+BgaFj/6XCqMUSV99N/hkT7wAgMBAAQjggFBM11BdJAMBgNVHRMBAf8EAjAA  
MA4GA1UdDwEB/wQEAwIB8DATBgNVHSUEDDAKBggRByEFBQcDAjAdBgNVHQ4EFgQU  
ehUVT+MzT1SB8DFLp/r2vaDcPEAwdQYDVROjBG4wbIAUjI1/9gnmh2SK4uI8/8I  
AYnbRm6hSaRHMEuXczAJBgNVBAYTAKtSMQ4wDAYDVQQKEwVLSVNUSTEmMCQGA1UE  
AxMdSO1TVEkgQ2VydG1ma#NhdG1vb1BBdXRob3JpdHmCCQDOBPWrF1uboDA/BgNV  
HR8EODA2MDSgMqAwhi5odHRw018vV2EuZ3JpZGM1bnRIci5vc15rc19DUkwva21z  
dGktY2Et djMuV3JsMEEGA1UdEgQ6MD1BGWtpc3RpL#dyaw#QtY2FAa21zdGkucmUu  
a3KGG2h0dHA6Ly9jYSSncmlkvY2VudGVyLm9yLmtyLzAnBgNVHSAE1D4eMA4GDCsG  
AQQB72EBAgEDADAMBgoqhkiG90wFAg1BMA0GCSqGSIb3DQEBCwUA41CAQBihrMp  
ugJt01xfqU4t+zVjGX58VA1Fm7V/gZCBvbq6sUGnVtPBUF+hIVzXjxMjBnRB1uo8  
TAJ+j+Lm971A1IDs/HS2mRnp1rJp7r/21ZTDR1rtQsxjy7JGx1gSe8c6h6HuTuK4  
SJt5+zToZoBe2+71bgCDucBmc6vv+1qbTT2/BsXSCqanh9hFA111kmRncCsm#Pke  
b1t2/CN#m/NVwp0CGLw3#MEA5i13L#o+121npfp8CQCDCs#WxsxAKTcfv5AhyhF1  
tShPjtCQXrwRuEo9CmdRAb1s8V01B3VJscP#Arcs8r9MzD#6gdog27a3ONXXQbVT  
CEcw7nnRHGzmVANP1NZLokSV4n9Fd7QceKQ17Cck1ZTD2kmcK0aoBQ41D5fSfBc5  
vnbdwfLnXD9A8LPXARy3o#IMXz93Vp3LT3zJ8NdLcUPC+jZ0XhHmg7oedaRFTzcb  
060u1qw4uAXpE5yN7LVbpTd2D8+UNycF039n7iZXLd3g/41p9c2L/Ar5J/fbjss#K  
9TXe/RhbLwjVsZJyXaQefhdny10XAFCG50P3gqZTzDRCEJzgB1SzzK4CMb0hevx01  
qRHfvK4Et8hjEQ2AztBNQF01emXKwQ1BN3vDUZC1J1aAJqPoXaUnlsq3DR/ne404  
-----END CERTIFICATE-----

## Set password for private key

### 개인키 비밀번호 설정

```
# openssl rsa -aes256 -in your_private_key.pem -out your_private_key_with_password.pem
```

## Convert format of certificate between der and pem

### der – pem 간 인증서 포맷 변환하기

```
# openssl x509 -inform der -in your_certificate.der -out your_certificate.pem
```

```
# openssl x509 -outform der -in your_certificate.pem -out your_certificate.der
```

## Combine your private key (privateKey.pem) and certificate (cert.pem) into a PKCS#12 (PFX) file.

### 개인키(privateKey.pem)와 인증서(cert.pem)를 pfx 포맷으로 합치기

```
# openssl pkcs12 -export -out output.pfx -inkey privateKey.pem -in your_certificate.pem
```

For Globus Toolkit,  
you can copy `your_certificate.pem` and `your_private_key.pem` in `~/globus` directory.