
<JSTORM>



JSTORM
<http://www.jstorm.pe.kr>

Document Information

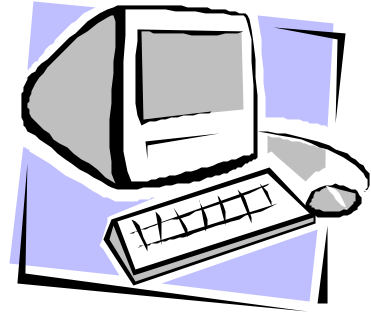
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Abstract	
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1995 가 가 . HTML

가

DHTML XML HTML

가 (SandBox)

가 가

Win32 . JDK 1.1 AWT가 Win32

JDK 1.0 AWT가 MFC

JIT JFC API가

API 가

JDK 1.0

가

가

JDK 1.1

가

Win32 API 가 PC

JDK 1.1 가

. (

10 “ ” .
4.x , 4.x .

(Packaging)

JAR , CAB
JAR CAB CA(Certificate Authority)

VeriSign . VeriSign (<http://www.verisign.com>) 가

RSA

Intranet Certificate Server

JDK 1.1

가

가

~~///~~ (Packaging)

~~///~~

~~///~~ (Signing)

~~///~~

~~///~~ HTML

jar JAR . jar
PKZIP . cabarc

CAB . MSZIP . JAR

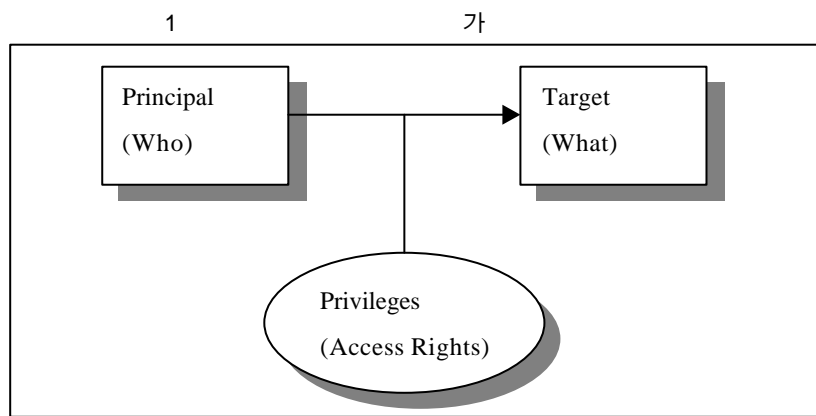
가 JAR

CAB

Active-X
 JPM(Java Package Manager) 가 . JPM
 . dubuild
 JPM .
 .

Authenticode X.509 v3 Object Signing
 PKCS #7
 signtool signcode

“Capabilities Based Model”



1 가
 Principal Target
 Principal Target
 Privileges
 Principal CA가 codebase가
 prefs.js principal codebase가 가

```
user_pref("signed.applets.codebase_principal_support", true);
```

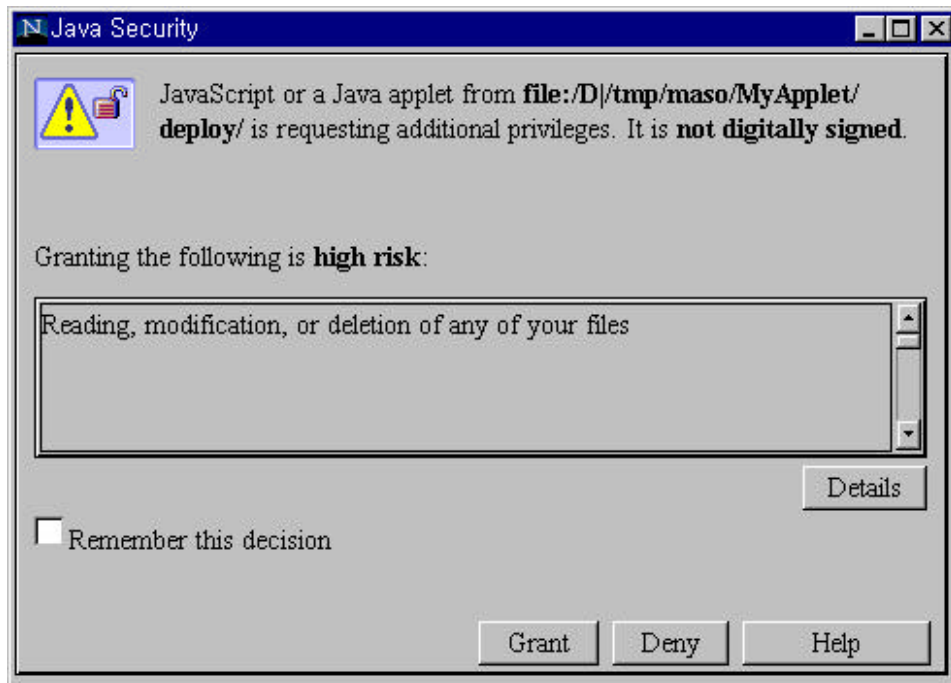
prefs.js

Target (Privileges)

Granting 가 . Granting 가 . Enabling Enabling

2

2



Enabling 가

Capabilities API . API

Trust Based Model (Zone) 가 (Static Model)

/

가 가 . , , , 가

```

CAB                                signcode                                CAB
(Signature)                         .                                  ,
, . ,                                가    가                                .
                                   .                                  .
                                   .                                  .
(Fully Trusted)                      .                                  .
                                   .                                  .
                                   .                                  CAB
                                   ? CAB                                가
                                   .                                  .
                                   .                                  .
. 1 CAB                               .
                                   .                                  .
                                   .                                  CAB
                                   1                                :

```

\CAB			

HTML

```

HTML                                HTML                                HTML
.                                  .                                  .
.                                  .                                  .
JAR                                .                                  .
.                                  .                                  .
<APPLET code="MyApplet" width=200 height=200
archive="MyAppletArchive.jar">
<PARAM NAME=... VALUE=...>
</APPLET>
.                                  .                                  .
APPLET   가    PARAM                cabase
CAB      .                                  .

<APPLET code=MyClass.class width=100 height=100>
  <PARAM NAME=cabase VALUE=MyAppletArchive.cab>
  <PARAM NAME=... VALUE=...>
</APPLET>
.                                  .                                  .
.                                  .                                  cab
base   useslibrarycodebase  useslibraryversion

```



```

<PARAM NAME=useslibrarycodebase VALUE="MyApplet.cab">
<PARAM NAME=useslibraryversion VALUE="1,1,2,3">

```

가 가

HTML

HTML

```

<APPLET code="MyApplet" width=200 height=200
archive="MyAppletArchive.jar">
<PARAM NAME=cabbase VALUE=MyAppletArchive.cab>
<PARAM NAME=useslibrarycodebase VALUE="MyApplet.cab">
<PARAM NAME=useslibraryversion VALUE="1,1,2,3">
<PARAM NAME=... VALUE=...>
</APPLET>

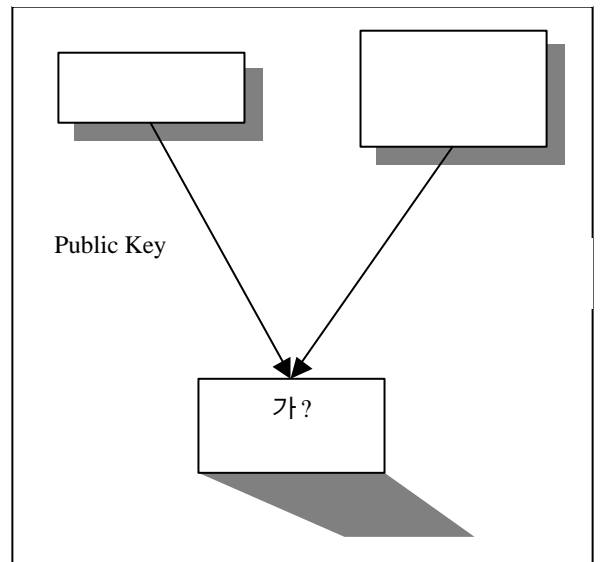
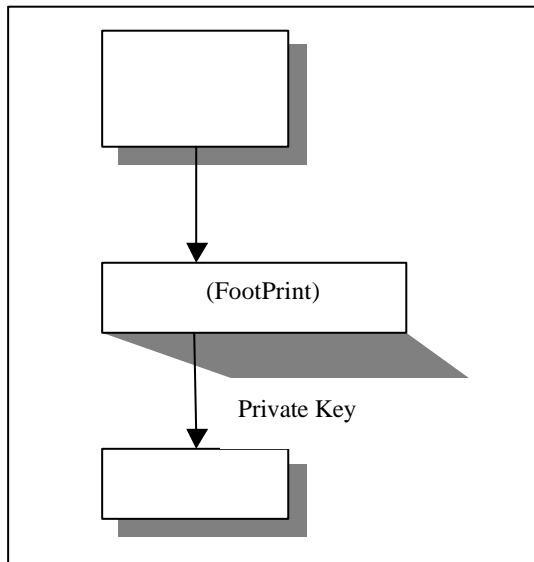
```

(Digital Signature)

Public/Private Key

3

4



3

FootPrint

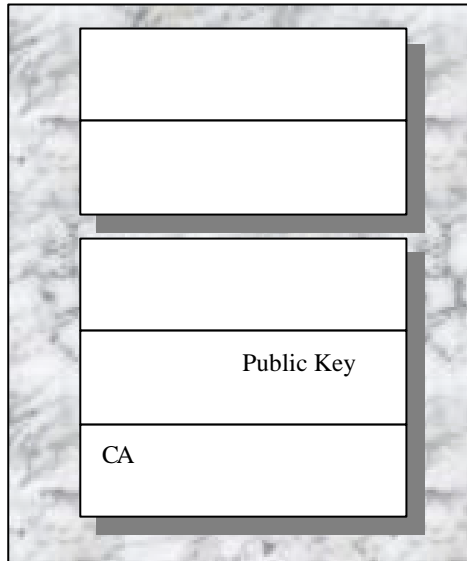
(MD5/SHA)

CA

Private Key

4 // 가
 Public Key
 (Certificate) ? 5

5 JAR



CA Public Key
 3 . , Public Key, CA
 가 JAR .CA
 Public Key 3
 JAR Public Key
 CA Public Key가
 .CA CA Public Key
 . (Communicator/Security Info/Certificates/Signers
 CA .)

가 10
가 .

Capabilities API

Capabilities API

가

Capabilities API

?

Principals, Targets,

Privileges 가

. Principals

가

(Targets)

(Privileges)

가

```

// SimplePrivSample.java
package netscape.sample.security;
import netscape.security.PrivilegeManager;
import java.io.*;

public class SimplePrivSample implements RunnableSample {
    public void run(PrintStream ps){
        ps.println("Trying to acquire permission to read system
            properties...");
        try {
            PrivilegeManager.enablePrivilege("UniversalPropertyRead");
            ps.println("\tSuccess!");
        } catch (netscape.security.ForbiddenTargetException e) {
            ps.println("\tFailed! Permission to read system properties
                denied by user.");
        } catch (Exception e) {
            ps.println("\tFailed! Unknown exception while enabling
                privilege.");
            e.printStackTrace(ps);
        }

        ps.println();
    }
}

```

```
String property = "user.home";
ps.println("Trying to get system property (" + property + ")...");
try {
    String propertyValue = System.getProperty(property);
    ps.println("\tSuccess!");
    ps.println("\t" + property + " = " + propertyValue);
} catch (netscape.security.AppletSecurityException e) {
    ps.println("\tFailed! Security Violation.");
    e.printStackTrace(ps);
} catch (Exception e) {
    ps.println("\tFailed! Unknown exception while accessing
        property.");
    e.printStackTrace(ps);
}
}
}
```

```

        user.home
        System.getProperty("user.home")
AppletSecurityException          "UniversalPropertyRead"
Target          (Privilege)
PrivilegeManager.enablePrivilege ("UniversalPropertyRead");
        netscape.security.PrivilegeManager
enablePrivilege
http://developer.netscape.com/docs/manuals/index.html?content=signedobj/secsampleharness/SecSampleHarness.html
        Target          Target
http://developer.netscape.com/docs/manuals/signedobj/targets/index.htm
2          Target

```

2 Target

Target		
UniversalFileAccess		
UniversalLinkAccess		
UniversalPropertyRead		
UniversalFileRead		
UniversalFileWrite		
UniversalFileDelete		

UniversalConnect		
UniversalFdRead		
UniversalFdWrite		
UniversalAccept		
Universallisten		
UniversalThreadAccess		
UniversalThreadGroupAccess		

(Object Signing)

signtool
<http://developer.netscape.com/docs/manuals/signedobj/>
 (Certificate)가
 Security Info/Certificates/Yours/Get a Certificate CA
 CA Certificate .()
 Certificate Server
 Security Info/Password
 “signtool -G MySignCert “
 MySignCert 가 Windows -d 가
 .-d
 users/user_name . “signtool -L” 가
 CA , signtool
 . “signtool -c0 -k MySignCert -Z testjar.jar signdir “
 signdir testjar.jar JAR
 -c 0
 가
 JDK 1.1
 가
 JDK 1.2 HotSpot
 Dynamic HTML, XML

Active-X

가

PC

JFC Capabilities API

☞☞ Java Security

<http://www.javasoft.com/security/>

☞☞ “Escape the sandbox: Access native methods from an applet “, JavaWorld 10

<http://www.javaworld.com/javaworld/jw-10-1998/jw-10-apptowin32.html>

☞☞ “HOWTO: Deploying Java in Internet Explorer 4.0 and Netscape 4.0”,

<http://support.microsoft.com/support/kb/articles/q179/6/52.asp>

☞☞ Object Signing Tool 1.1,

<http://developer.netscape.com/docs/manuals/signedobj/signtool/index.htm>

: (www.maso.co.kr)