

# **BaroPAM solution installation summary**

**for multi-layer authentication to strengthen the security of information assets (Tomcat console)**

**Jan, 2025**



# III. BaroPAM Tomcat console integration

## 1. BaroPAM integration API

### 1) Tomcat security vulnerabilities

- Tomcat provides a web environment manager console.
- If the administrator console is invaded from the outside, all privileges related to the web may be leaked, so care must be taken in management.
- Vulnerable when the page for administrator authentication is easily recognizable or accessed by analogy.
- Security is vulnerable because Username/Password used for administrator authentication is stored in unencrypted original text (plain text) (~/.conf/tomcat-users.xml).

### 2) Integration API "barokey.jar" is located in the ~/.lib directory or set in the classpath

```
[root] /home/tomcat/lib > ls -al
합계 4908
drwxr-xr-x 2 root root    4096  5월  8 11:25 .
drwxr-xr-x 5 root root    4096  5월  9 15:12 ..
-rw----- 1 root root     116  3월 13 2015 .bash_history
-rw-r--r-- 1 root root   26074  6월 20 20:49 barokey.jar
```

### 3) Replace the Tomcat manager console login module (BasicAuthenticator.class)

In the "~/.lib/catalina.jar" file, replace the "BasicAuthenticator.class" file in the "org.apache.catalina.WauthenticatorW" directory with a file suitable for the Tomcat version.

### 4) Set the "BAROPAM" environment variable used in the interlocking API "barokey.jar" in ".bash\_profile"

```
export BAROPAM=/home/tomcat/conf/.baro_nurit
export BAROCONF=/home/tomcat/conf/baropam.conf
```

**Note)** When changing the contents of the ".baro\_nurit" file, a one-time authentication key verification error occurs. In addition, ".baropam.conf" has a structure of "Secure key, cycle time, last login time, logging status (Y/N)".

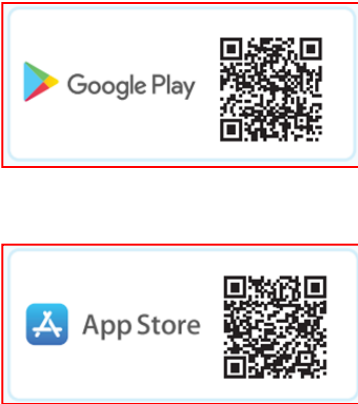
Since the **OTA key**, which is the authentication code used by **BaroPAM**, is written based on Java, the latest JDK 6.x or higher must be installed.

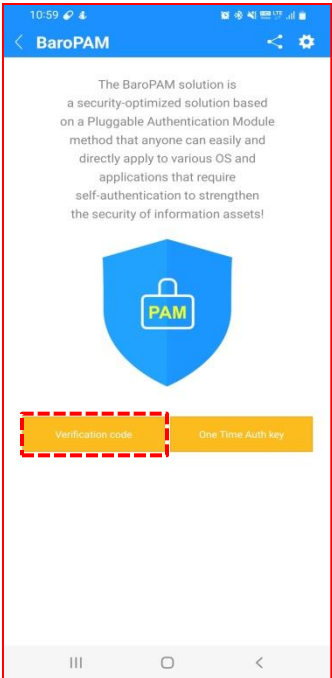
If it is not installed, you must install the latest JDK.

# III. BaroPAM Tomcat console integration

## 2. Install the BaroPAM app and set up information

### BaroPAM App Download






### BaroPAM configuration file(.baropam.conf)

```
j!q!cHbVqdpj7b4PzBpM2DileBvmHFV/.30,55915874,Y
```

Secure key      Cycle time      Last login time      Logging flag(Y/N)



**BaroPAM** app can be used on Android 6.0 (Marshmalliw) API 23, iOS 13.0 or higher, and does not support landscape mode.

After installing the **BaroPAM** app, launch the **BaroPAM** app, click the "Verification Code" button on the menu selection screen, and set the "Secure key, Cycle time" set in the **BaroPAM** configuration file ".baropam.conf" to the "You must enter the same information on the "Register server information" screen. If you set the app code (kr: Korean, en: English, jp: Japanese, cn: Chinese) on the **BaroPAM** app settings -> change screen settings screen, the **BaroPAM** app changes accordingly.

**Message:** The "OTA key" is incorrect because the date and time of the Android phone or iPhone are different from the current time.

**Cause:** This is caused by not using the time provided by the network for the Android or iPhone's date and time.

**Action:** For Android phones, go to "Settings" -> "General management" -> "Date and time" -> "Automatic date and time" and "Automatic time zone" -> "Allow" For iPhone, go to "Settings" -> "Date & Time" -> "Set Automatically" -> "Allow"

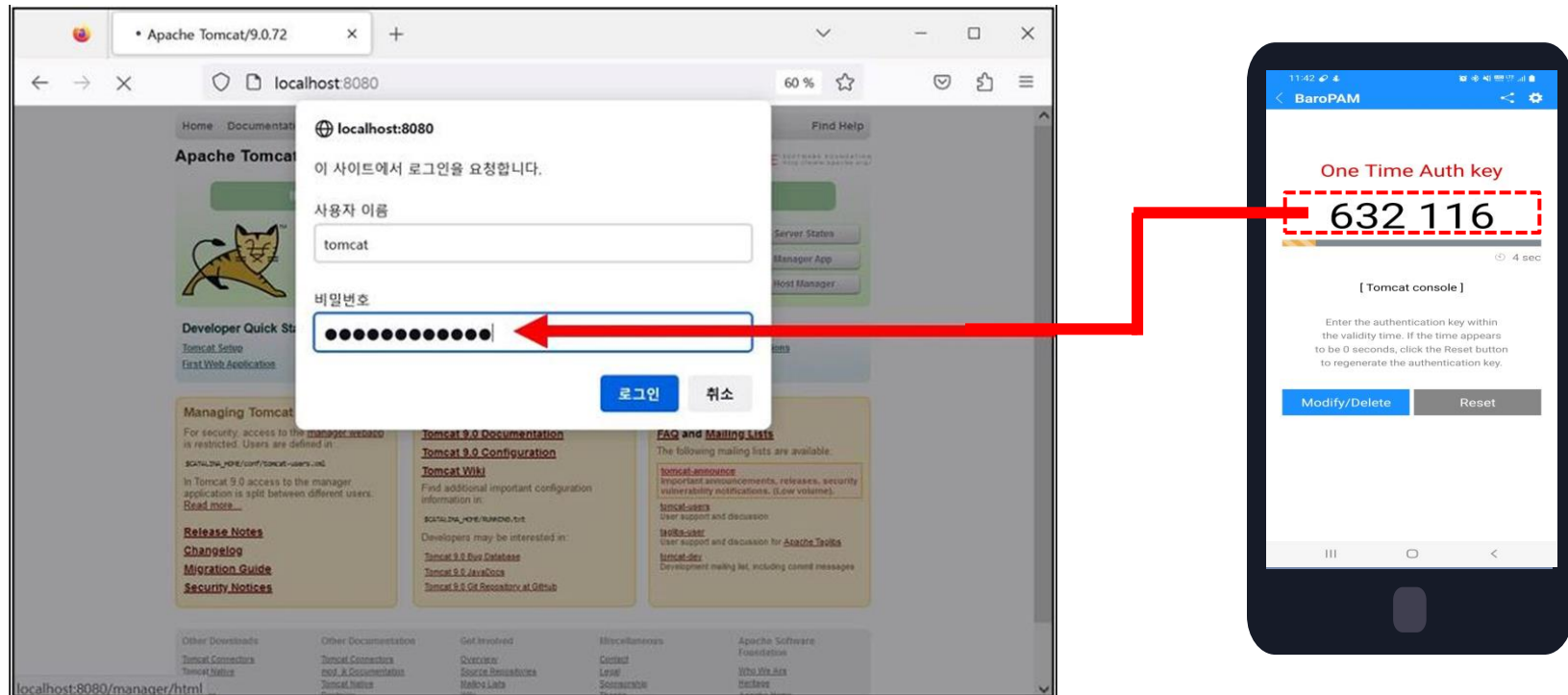
**Message:** If you cannot log in because the OTA key does not match.

**Cause:** BaroPAM is a time synchronization method, so the time of the phone and Server must be the same.

**Action:** Check if the phone and Server time are correct.

# |||. BaroPAM Tomcat console integration

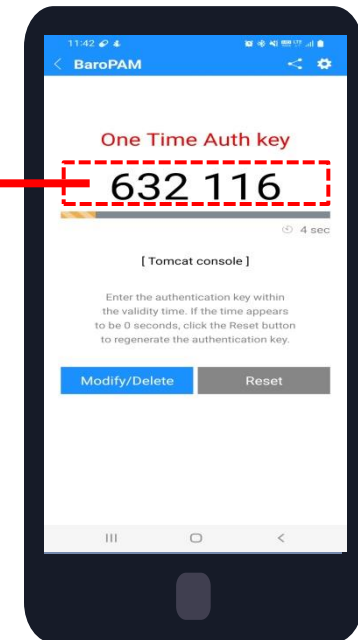
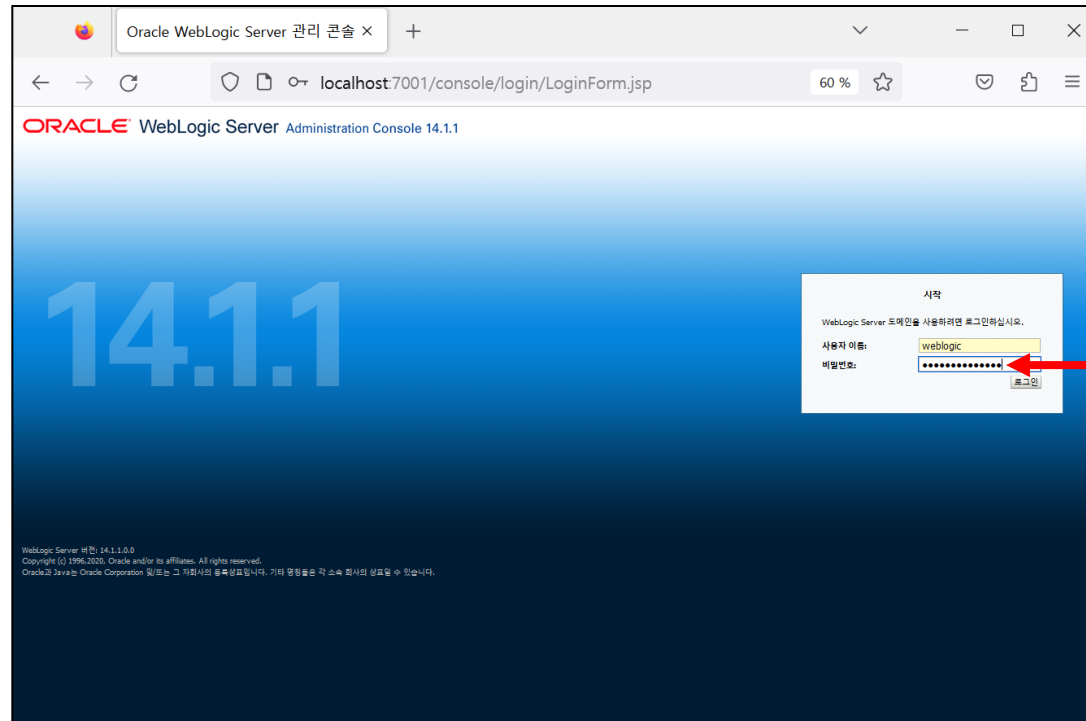
## 3. Tomcat console login



On the Tomcat console login screen, you must first enter your password, followed by a **OTA key** without a space. For example, if the password is "**tomcat**" and the **OTA key** is "**632116**", enter "**tomcat632116**".

# III. BaroPAM Tomcat console integration

## 4. Weblogic console login



On the Weblogic console login screen, you must first enter your password, followed by a **OTA key** without a space. For example, if the password is "**weblogic**" and the **OTA key** is "**632116**", enter "**weblogic632116**".



**Password** you don't need to remember!  
**BaroPAM** will be with you.

**Thank You!**

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