Vulnerability in UberSocial for Android

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Abstract

We found that UberSocial 7.1.5, 7.2.2 and 7.2.3 have a vulnerability that allows a malicious application to access and manipulate user's private twitter information.

1 Application Information

Package Name	com.twidroid
Full Name	UberSocial for Android
Version	7.1.5 and 7.2.2 (the latest version in 02 Dec 2011)
Category	Social
Installs	1,000,000 - 5,000,000
Average Rating	4.2/5.0 from 73,574 users

CVE Reference	CVE-2011-4700
Vendor	*UberMedia Inc.*, http://www.ubersocial.com/
Vendor Response	Null

2 Description

UberSocial exposes the following four content providers in the AndroidManifest.xml file, which are not properly protected, as shown in follows:

- `<provider android:name="com.twidroid.provider.TweetProvider" android:authorities="ubersocial.provider.Tweet" />`
- `<provider android:name="com.twidroid.provider.MentionsProvider" android:authorities="ubersocial.provider.Mentions" />`
- `<provider android:name="com.twidroid.provider.DirectMessageProvider" android:authorities="ubersocial.provider.DirectMessage" />`
- `<provider android:name="com.twidroid.provider.SettingsProvider" android:authorities="ubersocial.provider.Settings" />`

Thus a malicious application on the same device can access and modify user's private twitter contents through these content providers.

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3 Impact

This vulnerability enables an adversary to access and modify user's twitter contents without owning user's twitter account. The exposed private twitter information includes user's all tweets, and even worse, all direct messages are also exposed to public. For example shown in Figure 1, all private attributes of a direct message, such as sender's username, sender's user id, message body, recipient's username and recipient's user id, could be queried from another application on the same device. However, such extremely private information should only be accessible by applications with granted privilege, and meanwhile with user's acknowledgement.

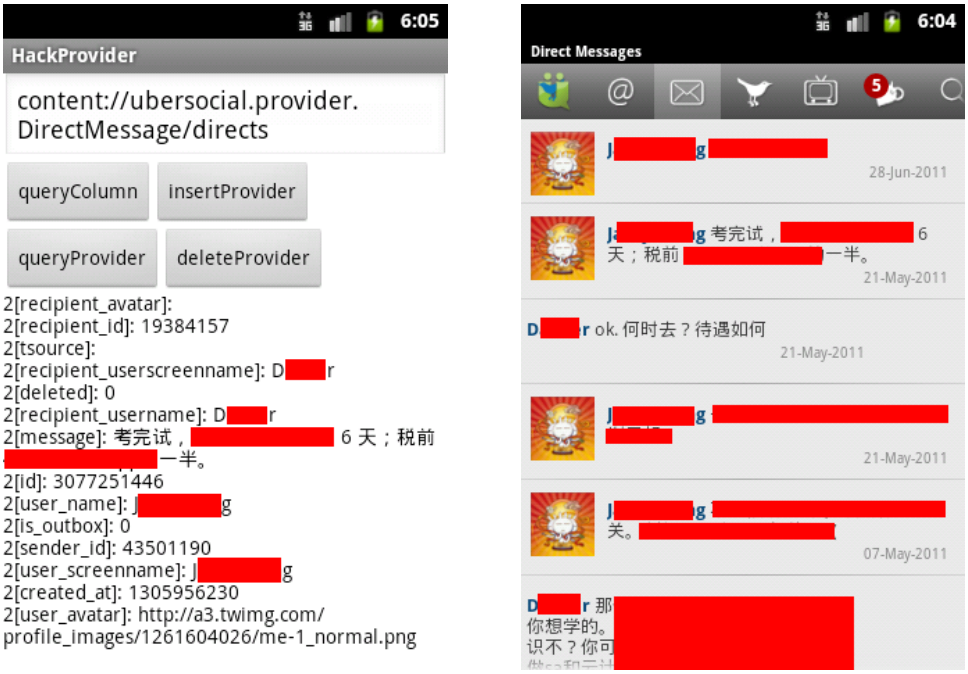

Figure 1: User's all twitter direct messages are exposed.

4 Solution

We are trying our best to contact *UberMedia Inc.* to fix this security issue. Our advice is to set the permission of these application's content providers properly, or just set content providers not exported in the AndroidManifest.xml file. Currently, for a user, just disable the application temporarily and wait for an official update.

5 Technical Description

Among all UberSocial's content providers, three of them are sensitive, and each has a corresponding table, as shown in the following table:

Content Provider Authority	Table Name
ubersocial.provider.DirectMessage	directs

ubersocial.provider.Mentions	tweets
ubersocial.provider.Tweet	tweets

When user launches the UberSocial app at the first time, he or she needs to set up his or her twitter account. After that, UberSocial would use this account to download user's all latest tweets and direct messages from official twitter web server and store them in the three content providers' tables above. However, as those content providers are not well protected in the AndroidManifest.xml file, thus all "directs" and "tweets" tables are exposed and accessible by any other applications without privilege.

As a consequence, a malicious application on the same device could query those "directs" and "tweets" tables without owning user's twitter account, which extremely compromises user's privacy. And even worse, attacker could insert a faked tweet on behalf of user to phish user's friends or just spam in user's social network. Also, attacker could delete user's all tweets and direct messages without user's confirmation.

Figure 2: All private tweets could be queried from another application without privilege.

6 Update

- 01/27/2012: UberSocial 7.2.3 (the latest version in 27 Jan 2012) has the same vulnerability.