

JadeRAT mobile surveillanceware spikes in espionage activity

blog.lookout.com/mobile-threat-jaderat

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!MyID:IMEI:359125 Mobile ID:0739, SIM:894430, IMSI:23430, Android versio
d0-62-6c-f4, battery:100%-charging
!hi:359125 Beaconing message from victim
!1@ List running processes command
!Rt:[com.google.android.googlequicksearchbox;1300][com.android.sys:remote;10390][com.android.settings;7048][com
s.persistent;1711][com.google.android.gms;1740][com.android.vending;3648][com.google.process.gapps;1473][com.goo
ideos;11625][com.google.android.googlequicksearchbox:search;1433][com.google.android.apps.maps;11798][com.google
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5][com.qualcomm.qcrilmsgtunnel;2855][com.android.phone;1267][com.android.nfc;1243][com.android.server.telecom;122
droid.systemui;921][system;783]!@
!2@ List which app is in the foreground command
!Rt:[com.google.android.launcher.GEL;8518]!@
!3@ List all services command
!Rt:[com.android.bluetooth;2265][com.google.android.music:main;0][com.android.sys;10360][com.android.sys:remote;
m.google.android.gms.persistent;1711][com.android.systemui;921][com.android.sys;10360][com.android.vending;3648]
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!hi:359125
!9@ Retrieve stored location tracking information
!Rt:[2017-07-08 19:21:30;51.4,-0.020]!@
!hi:359125
!4@ Get current device location command
!Rt:time:2017-07-08 19:21:30|type: 161|latitude:51.4|lonitude:-0.020|radius:40.0|addr:London
!17@ Get all accounts on device command
!Rt:OpenKeychain:org.sufficientlysecure.keychain.account|- @gmail.com:com.google|!@
!hi:359125
```

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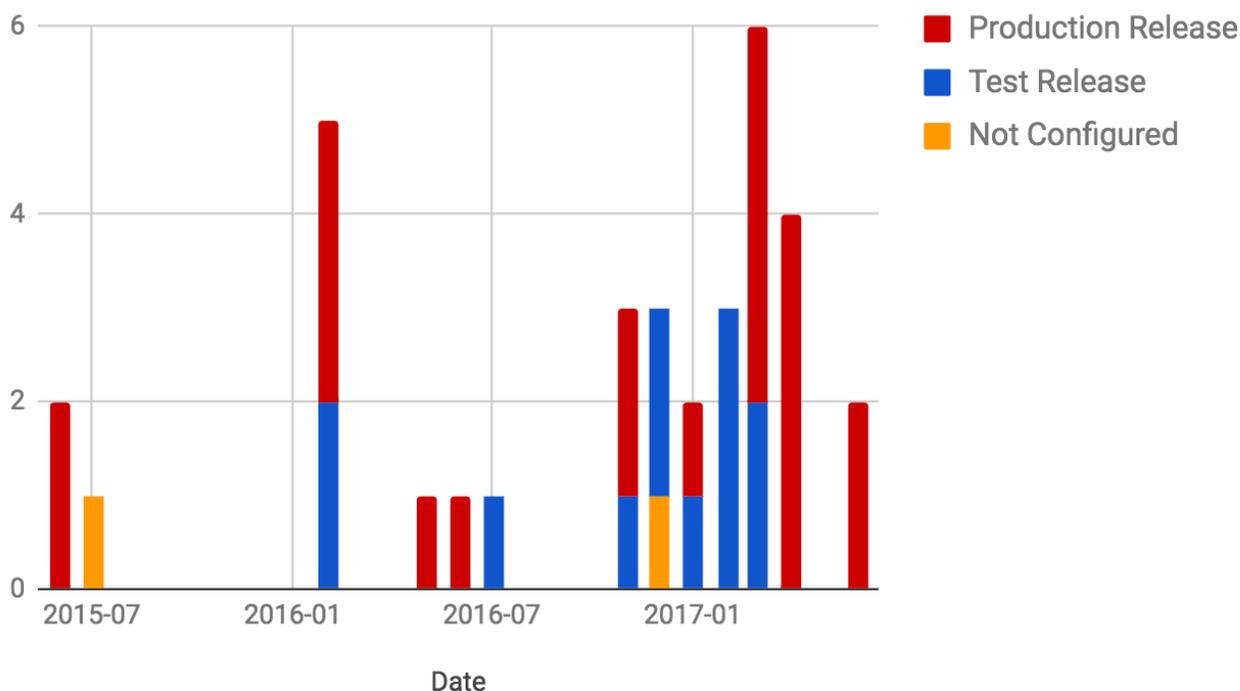
JadeRAT is just one example of numerous mobile surveillanceware families we've seen in recent months, indicating that actors are continuing to incorporate mobile tools in their attack chains. Some of these active families have included [FrozenCell](#), an attack against government officials in Palestine; [xRAT](#), associated with a family targeting Hong Kong protestors; and [ViperRAT](#), an attack targeting members of the Israeli Defense Force. Research into those families suggests they are highly targeted however we've also seen more wide-reaching spyware such as [SonicSpy that was discovered in thousands of malicious apps](#), some of which made their way into the Google Play Store.

Potential attribution

Based on the apps we've seen JadeRAT trojanize, it appears the actors behind it are primarily targeting groups and individuals in China. While our analysis has identified several possible leads that could tie this surveillanceware family to the [Naikon APT](#), [Scarlet Mimic](#), or one of several other groups operating in the region, at this point in time we do not have conclusive evidence to confirm this. Our findings do support the theory that the actor behind JadeRAT is operating around a similar set of objectives to those followed by other Chinese government sponsored groups. We're hoping that by sharing this information it will increase awareness about the rise in targeted surveillance attacks against mobile devices and provide further leads to the research community investigating actors operating in this region.

JadeRAT samples

Dates JadeRAT Production / Test Releases Acquired



There is a strong indication that the actor behind this family is becoming increasingly active in the mobile space. As of June 2017, we have acquired 34 JadeRAT samples, 50 percent of which were acquired just this year. Looking at hard coded configuration details, we were able to determine which samples are likely production releases and which are used for internal testing. This shows that the majority of production samples were released this year.

JadeRAT sample names have remained fairly consistent. The apps SIM卡管理 (SIM Card Management), 手机管家 (Phone Guardian), and Google Searcher are the most popular observed titles. Others have included Uyghur, 170602, Telegram, and Voxel, indicating the actor is impersonating communication apps and may be running some campaigns targeting ethnic minorities in China, given the Uyghur reference.

JadeRAT supports over 60 commands that can be issued in the format !<command_id>&<optional_cmd_params>@. Many of these offer standard information gathering functionality seen in typical mobile surveillanceware, however JadeRAT supports several less common capabilities. These include notifying an operator via SMS when a device has booted and silently dropping calls and texts to attacker specified numbers. The following are JadeRAT's core capabilities:

Get a list of running processes
 Configure call recording to occur if a call is made to a specified number
 Get the name of the foreground task
 Alert a 'secure phone' that a victim's device is now online
 Get active services
 Record audio at a specific time for a set duration
 Retrieve device location
 Start / stop audio recording / set to record based on calls to certain numbers
 Retrieve contacts, accounts, call logs, text messages
 Attempt to call an attacker specified number
 Kill a specific process
 Silently drop calls and SMSes to specific numbers
 Retrieve location data that has been periodically collected
 Enable / disable Wi-Fi
 List the contents of a specific directory
 Enable / disable mobile data
 Download / upload / delete a specified file
 Enable / disable GPS
 Recursively search a directory on a victim's device for a specific filename
 Delete all SMSes, call logs, contacts, and content on the SDCard
 Use ZipUtils to compress a specific file, placing the compressed output in /sdcard/.temp
 Execute arbitrary commands if root
 Exfiltrate MicroMsg and QQ media files and chat databases
 Take a screenshot
 Check for root access
 Shutdown / reboot device
 Retrieve Wi-Fi access points and their corresponding passwords

```

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@!hi:359125 Beaconing message from victim
!1@ List running processes command
@!Rt: [com.google.android.googlequicksearchbox;1300] [com.android.sys:remote;10390] [com.android.settings;7048] [com.android.defcontaine
s.persistent;1711] [com.google.android.gms;1740] [com.android.vending;3648] [com.google.process.gapps;1473] [com.google.android.apps.pho
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droid.systemui;921] [system;783]!@
!2@ List which app is in the foreground command
@!Rt: [com.google.android.launcher.GEL;8518]!@
!3@ List all services command
@!Rt: [com.android.bluetooth;2265] [com.google.android.music:main;0] [com.android.sys;10360] [com.android.sys:remote;10390] [com.google.a
m.google.android.gms.persistent;1711] [com.android.systemui;921] [com.android.sys;10360] [com.android.vending;3648] [com.android.bluetooth
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@!hi:359125
!9@ Retrieve stored location tracking information
@!Rt: [2017-07-08 19:21:30;51.4, -0.020 ]!@
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!4@ Get current device location command
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!17@ Get all accounts on device command
@!Rt: OpenKeychain:org.sufficientlysecure.keychain.account| |@gmail.com:com.google|!@
@!hi:359125

```

As JadeRAT simply opens up a socket to a specified address and uses quite a basic instruction format without any authentication its capabilities can be tested out by redirecting traffic from a compromised device to an analysis machine running netcat.

Infrastructure

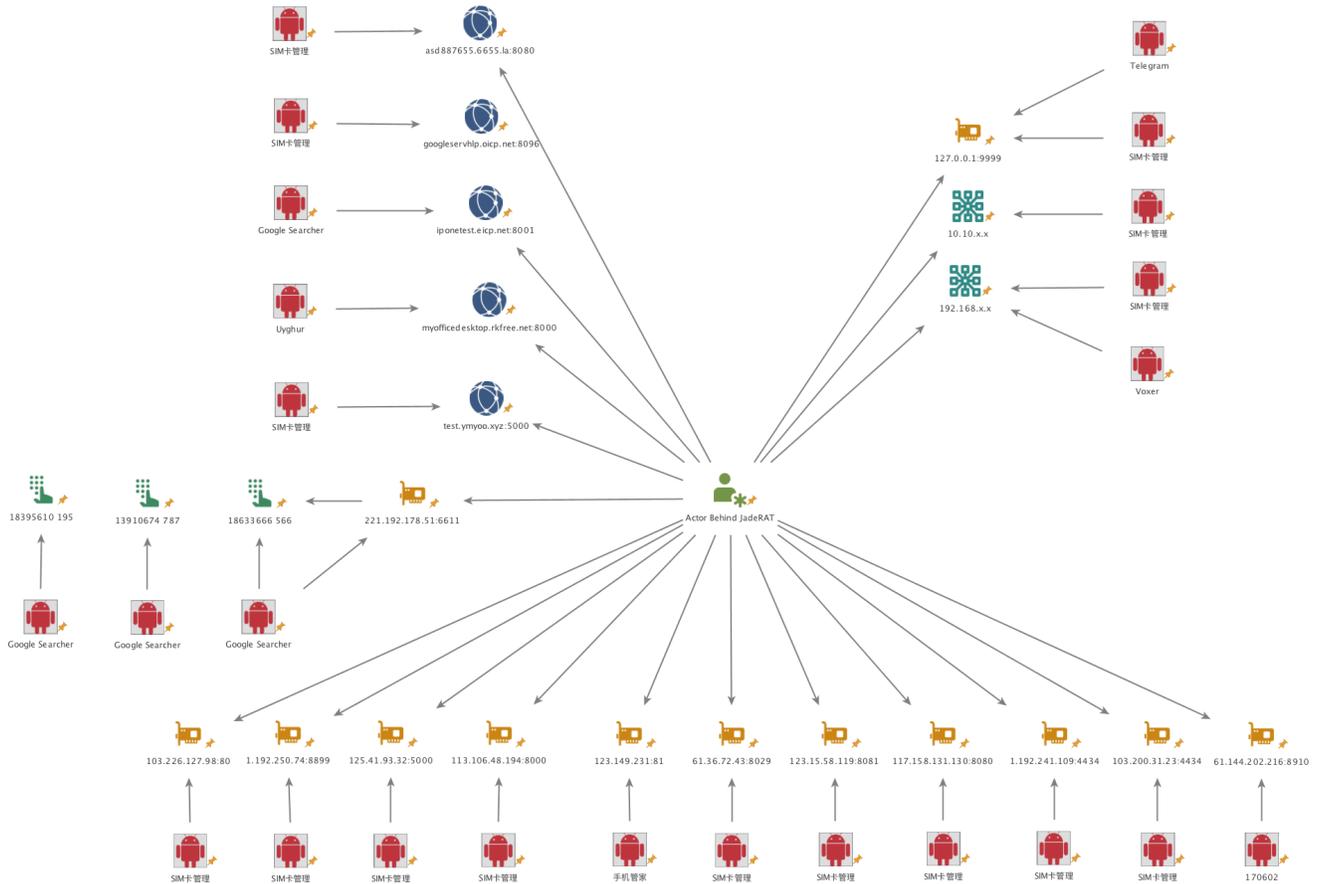
JadeRAT's operators have consistently changed their infrastructure. Production releases rarely reuse domains or IP addresses, frequently use dynamic DNS, and communicate on various non-standard ports. JadeRAT is configured to send SMS messages to an attacker-specified phone number when the compromised device first comes online, however these have only been pre-configured in three of the most recently observed samples. We extracted the following phone numbers from samples acquired during April of 2017:

NumberRegionOperatorBrand18395610195Shijiazhuang City, Hebei ProvinceChina Mobile Communications CorporationGlobal pass, M-Zone, Shenzhen line, G318633666566Handan City, Hebei ProvinceChina United Network Communications Group Co., LtdUnknown13910674787BeijingChina Mobile Communications CorporationGlobal pass, M-Zone, Shenzhen line, G3

Though these phone numbers are only associated with a limited number of samples, all samples come configured with specific infrastructure to which they communicate. Below are observed domains and external IP addresses.

IP /

DomainPortgoogleservhlp.icp.net8096iponetest.eicp.net8001myofficedesktop.rkfree.net8000asd887655.6655.la8080103.226.127.9880125.41.9



Lookout is continuing to track JadeRAT and its associated infrastructure closely as we anticipate this family will only continue to grow.

Want to learn more about threats like JadeRAT and our Threat Advisory services? [Contact Lookout today.](#)

SHA-

1sfea0bc1df035ea8eb683bc91cef4d925d8a260f3b86d8dc815f50377e444a297f5f33bba1b16cc8e674224a4fe7ec9badd5eefce303ec0867a4afcdf3

All these indicators have been added to AlienVault under the [JadeRAT](#) pulse.

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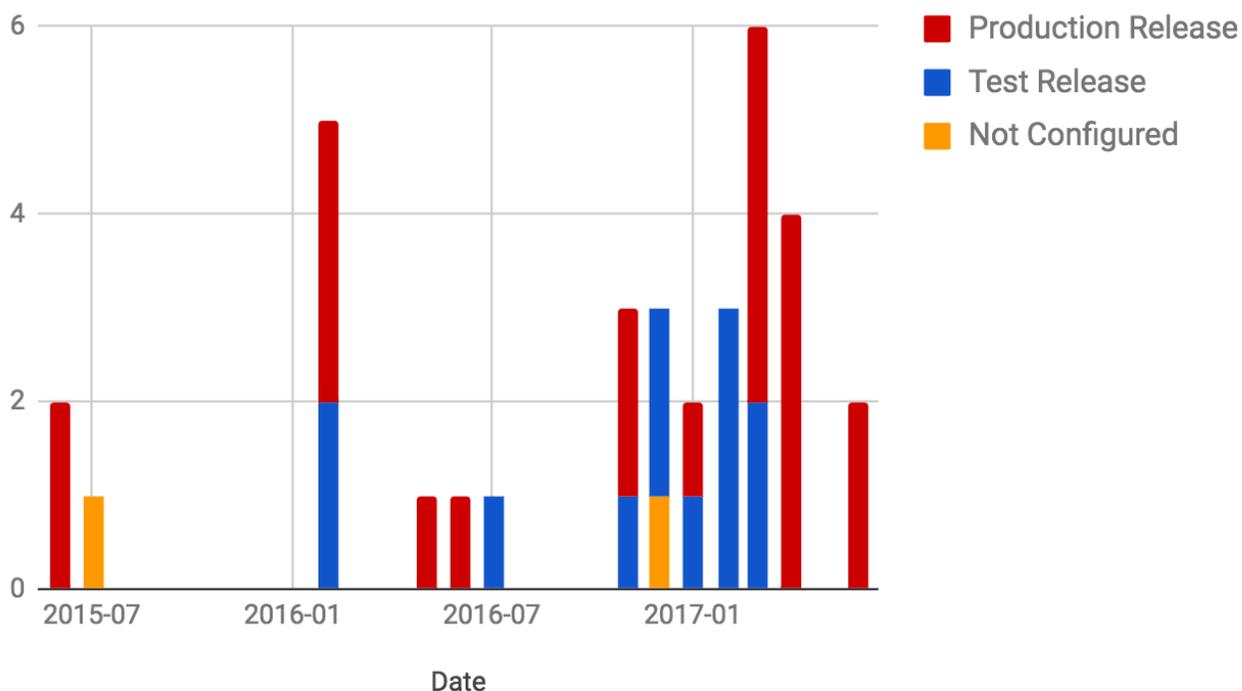
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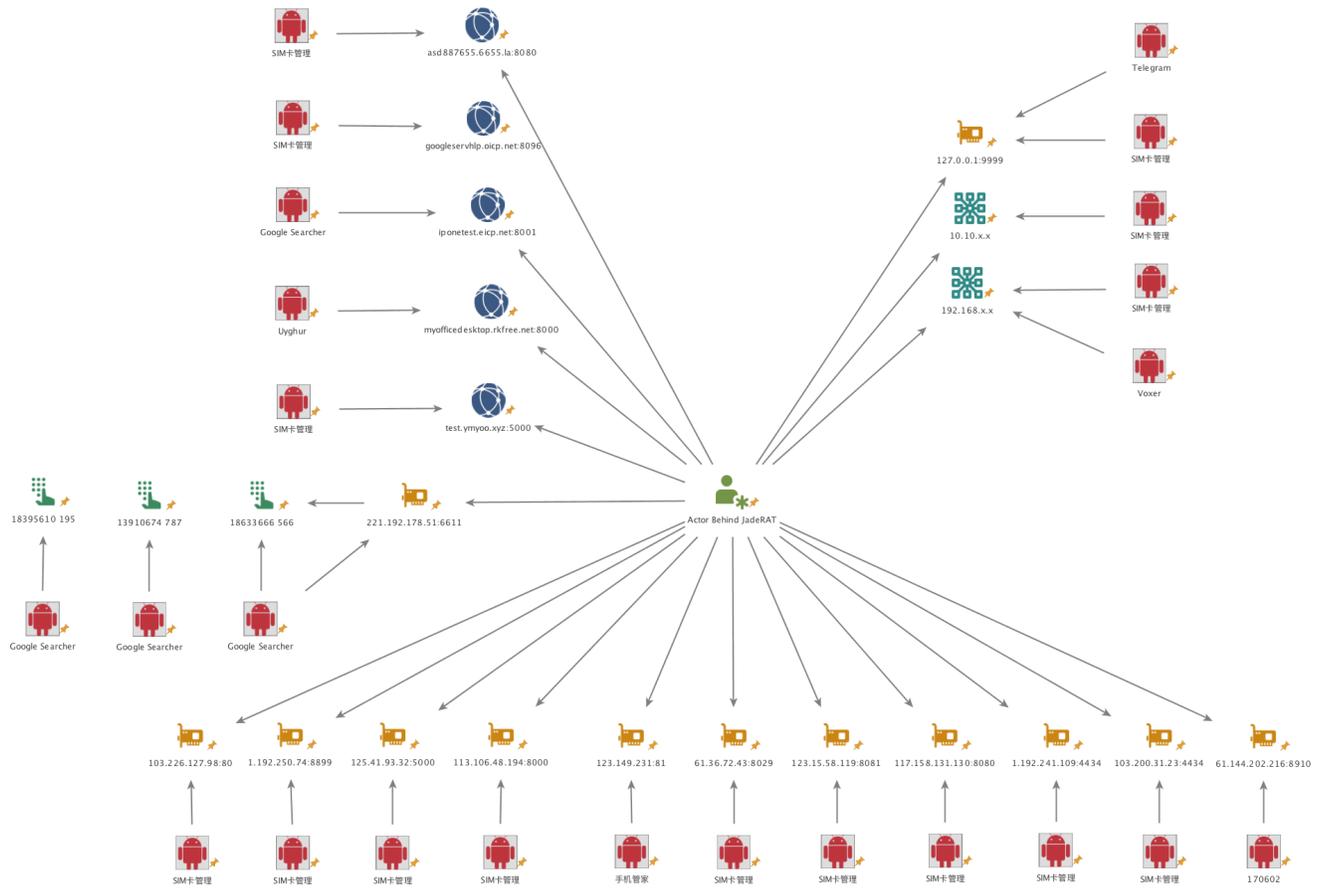
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October 20, 2017

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[Surveillanceware](#)