

Raytheon Blackbird Technologies

**20150904-271-RSA
Terracotta VPN**

**For
SIRIUS Task Order PIQUE**

**Submitted to:
U.S. Government**

**Submitted by:
Raytheon Blackbird Technologies, Inc.
13900 Lincoln Park Drive
Suite 400
Herndon, VA 20171**

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1.0 (U) Analysis Summary

(S//NF) This report is a fairly comprehensive report on the large commercially available Chinese-based VPN service known within RSA as “Terracotta.” The report focuses on the VPN network nodes and infrastructure but provides very little in the way of technical details on how some of its nodes are co-opted via malicious malware means.

(S//NF) Terracotta VPN is the name used by RSA Research to describe the dynamically-maintained conglomerate of multiple VPN brand names marketed on Chinese-language websites. Some of the nodes that make up the Terracotta VPN network were obtained legitimately, but many of the nodes in the network have been co-opted without the permission of their owners via classic malicious malware-type attacks.

(S//NF) RSA states in the report that all the co-opted nodes examined are Windows servers and speculates the reason for this is vulnerable Windows servers support VPN operations and are quickly and easily configured to support VPN operations. RSA provides a high-level overview of the steps taken to co-opt vulnerable Windows Servers:

- Brute force password attack against the Administrator account via WMI through TCP port 135.
- Remote connection to the Administrator account using the credentials harvested in step one. Disable the firewall and install Telnet.
- Log-in via RDP. Uninstall Windows Defender. Download and install a custom version of Gh0st RAT and/or a custom version of Mitozhan RAT. Install a Windows backdoor shell service listening on port 3422.
- Create a new Windows account in the Administrator’s Group.
- A few days later login via RDP and install Network Policy and Access Services and Routing and Remote Access Services with custom remote access policy pointing the Terracotta Internet Authentication Services (IAS) servers.
- Test the Terracotta VPN centralized IAS authentication and add node to network listing.

(S//NF) The preceding description of how vulnerable Windows servers are co-opted into the Terracotta network is the extent of technical discussion provided by this report.

(S//NF) RSA has observed nation-state sponsored bad actors and other hacker groups using the Terracotta VPN network operationally. For example, RSA observed the SHELL_CREW (subject of a previous Pique Report) using the Terracotta VPN network to attack a victim.

(S//NF) The report closes with a detailed explanation on how to detect the Terracotta VPN network operating without permission on your network.

(S//NF) Because of lack of technical detail on how the victim Windows servers are compromised there are no PoCs recommended from this report.

2.0 (U) Description of the Technique

(S//NF) Not applicable as no PoCs are recommended.

3.0 (U) Identification of Affected Applications

(U) Windows servers.

4.0 (U) Related Techniques

(S//NF) Generalized compromising attack (password attack, establishing beachhead, pivoting), general RAT.

5.0 (U) Configurable Parameters

(U) Varied.

6.0 (U) Exploitation Method and Vectors

(S//NF) No exploitation methods or attack vectors were discussed in this report.

7.0 (U) Caveats

(U) None.

8.0 (U) Risks

(S//NF) Not applicable as no PoCs are recommended.

9.0 (U) Recommendations

(S//NF) No PoCs are recommended from this report.