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Category	■FAQ □SOP	**Related OS**	N/A
Abstract	How to check whether the port is open on the remote server		
Keyword	Ping, PsPing, Firewall, Azure, port, 8883		
Related Product	ADAM-3600, ECU-1152, ECU-1251		

■ **Problem Description:**

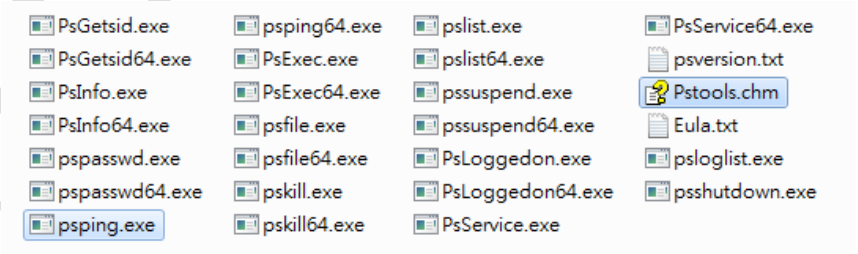
This document explains how to check whether the port is open on the remote server.

■ **Answer:**

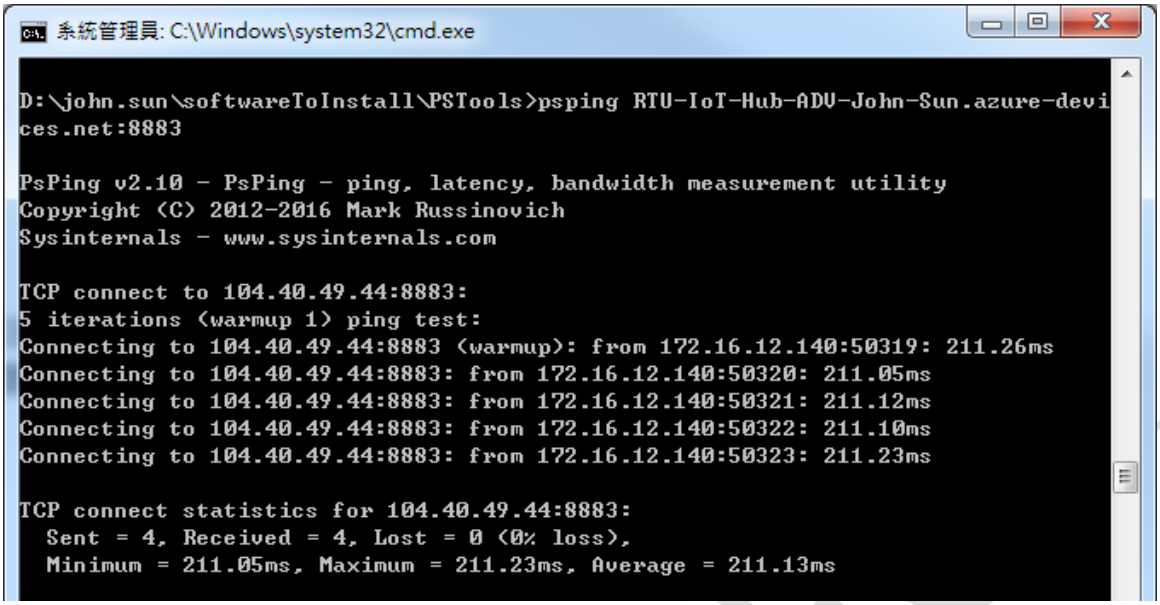
In general, we use the "ping" command when testing whether a packet can reach a particular host through the IP protocol. During work, ping sends an ICMP Echo request packet to the destination host and waits to receive Echo response packets. The packet loss rate and network delay are estimated by the response time and the number of successful responses. However, in Azure, **ICMP** packets **cannot pass** through **firewalls** and load balancers, so ping cannot be used directly to test the connectivity of virtual machines and services in Azure.

For connectivity testing in Azure, such as testing RDP, SSH port availability, or HTTP, HTTPS service stability, and even testing connectivity from Azure to external services, we recommend "PsPing" command in Windows OS. (Download address: https://docs.microsoft.com/en-us/sysinternals/downloads/psping)

After downloading PsPing Tools, user can unzip the entire file into any path and run it from a command prompt. User can find documents for detailed usage explanation. In this document, we focus on using the "psping.exe" command in the PsPing Tools suite.

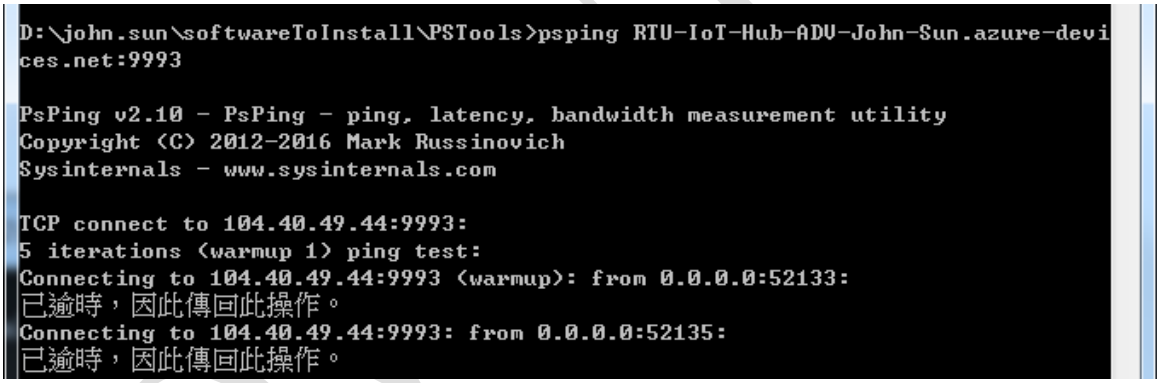


Use command “psping RTU-IoT-Hub-ADV-John-Sun.azure-devices.net:8883” for testing Azure IoT Hub with port 8883.

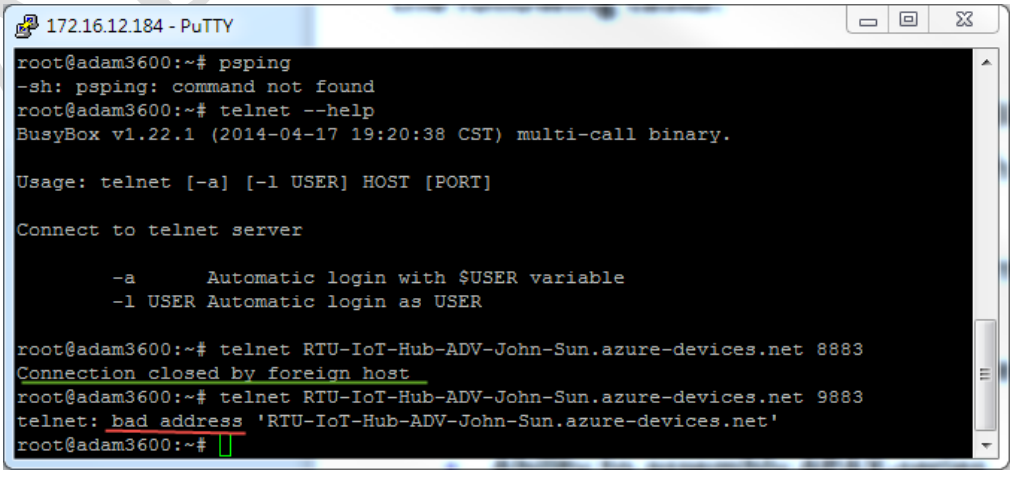


You may see the domain name (RTU-IoT-Hub-ADV-John-Sun.azure-devices.net) is resolved to IP (104.40.49.44).

If using other port which is not available on the remote server, the result might be “timeout”.



In ADAM-3600 Linux system, because there is no PsPing available, user may use “telnet” command for testing.



There are 3 results user might get.

1. "connection timeout/ bad address": if the port is blocked by the firewall
2. "**Connection refused/ closed**": if the service is down/not listening on specified port, but **port is reachable**.
3. "connected to server_ip": if connection is successful

Besides, we show additional example for psping. Usage of parameters are listed as below.

TCP ping usage: psping [[-6]|[-4]] [-h [buckets]] [-i <interval>] [-l <requestsize> [-q] [-tl-n <count>] [-w <count>] <destination:destport>

-h	Print histogram (default bucket count is 20).
-i	Interval in seconds. Specify 0 for fast ping.
-l	Request size.
-n	Number of pings.
-q	Don't output during pings.
-t	Ping until stopped with Ctrl+C and type Ctrl+Break for statistics.
-w	Warmup with the specified number of iterations (default is 1).
-4	Force using IPv4.
-6	Force using IPv6.

For high-speed ping tests use -q and -i 0.

We use the command "psping -n 10 -w 2 -h 10 172.16.12.195:443" in Windows command line. (443 port is for HTTPS service)