TEST REPORT

Tolly.

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Commissioned by
Advanced VPN

Advanced VPN for Windows 10
Connectivity and Security Feature Evaluation

EXECUTIVE SUMMARY

For many users private and secure Internet access is an essential requirement. Virtual Private Network (VPN) connections can provide security as well as other features such as access to content available only in certain regions of the globe. Advanced VPN provides private and secure access to an open and free internet, unblocks streaming services, access blocked websites, bypass digital censorship, bypass geo-restrictions, and protects your personal content from hackers and advertisers tracking your online activities.

Advanced VPN commissioned Tolly to evaluate the connectivity, presence, identity protection and geographic unblocking features of its VPN tunneling solution for users of Microsoft's Windows 10 operating system.

Tests verified connectivity with 135 locations in 33 countries around the globe, DNS leak protection, and confirmed ability to bypass geo-restrictions for popular streaming services such as Hulu, Netflix and BBC. See Table 1.

THE BOTTOM LINE

Advanced VPN for Windows 10:

1 Provides certified connectivity to 135 VPN sites globally

2 VPN presence in 33 countries

3 Provides for unblocking of geo-locked content

4 Simple installation and operation

5 Per-user annual subscription model

Advanced VPN for Windows 10: Summary of Test Results

Area	Feature	Results
Connectivity	VPN Presence in 135 locations globally	Verified
	VPN Presence in 33 countries	Verified
Identity Protection	DNS Leak Protection	Verified
Video Streaming	Netflix via US Tunnel Locations	Verified
	Hulu via US Tunnel Locations	Verified
	BBC iPlayer via UK Tunnel Locations	Verified
Peer-to-Peer (P2P)	WebTorrent via US and European locations	Verified

Source: Tolly, October 2019

Table 1

Overview

VPNs provide essential privacy and security for users by encrypting all traffic between the client machine and the VPN tunnel termination. With VPNs, all traffic running over public Wi-Fi networks is protected from eavesdropping by rogue users or rogue access points.

By using tunnel terminations in different geographic regions, the VPNs can also assist users in dealing with geographic content restrictions.

Test Results

Setup & Use

Early VPNs were known to be difficult to setup and use. Tolly engineers verified that Advanced VPN was simple to setup and simple to use.

Advanced VPN installs as a standard Windows 10 program with just a few clicks. Once launched, the VPN provides the user with a list of tunnel locations. The list automatically places locations closest to you at the top of the list. The interface also provides a "Favorites" capability so that frequently used locations can be shown with one click.

Advanced VPN

Advanced VPN for Windows 10

Connectivity & Features

Tested October 2019

Once connected, the Advanced VPN status panel shows the city, country and IP address of the connected tunnel along with performance statistics for upload and download bandwidth. Advanced VPN notes that each tunnel location connects with at least dual Gigabit Ethernet connections with most sites being upgraded to dual 10GbE. See Figure 1.

Connectivity

VPN tunnels work by encrypting traffic from the client to the tunnel termination and assigning the client an IP address that is local to the tunnel termination. For example, a VPN client physically in Chicago that connects to a tunnel location in Switzerland will display an IP address of the tunnel location city in Switzerland while the VPN tunnel is connected.

Tolly engineers verified connectivity to 135 tunnel endpoints in 33 countries around the globe. After connectivity was established, engineers verified that the connected client displayed an IP address that was local to the tunnel endpoint. See Table 2 for a list of countries where VPN tunnel terminations were tested. Advanced VPN notes that its coverage is always expanding.

Advanced VPN
Countries with VPN Tunnel Terminations

Argentina	Hungary	Singapore
Australia	Ireland	South Africa
Austria	Israel	South Korea
Bulgaria	Italy	Spain
Canada	Japan	Sweden
Chile	Mexico	Switzerland
Colombia	Moldova	Taiwan
Czech Republic	Netherlands	UK
Finland	Poland	Ukraine
France	Russia	United Arab Emirates
Germany	Saudi Arabia	United States

Source: Tolly, October 2019   Table 2

DNS Leak Test

Additionally, engineers verified that the locations passed the DNS leak test, that is, did not send DNS requests to servers not local to the tunnel target. This test was run as a spot check on about 50% of the target locations. Every location passed the test. Only the local DNS server at the tunnel termination was visible to the client.

Video Streaming

Accessing content that is linked to specific geographies is an important requirement for many users. Tolly engineers verified that popular streaming services worked using VPN tunnels.

Netflix

This test was run using two US tunnel locations. For each location, engineers logged into the Netflix streaming service and verified that content could be streamed successfully.
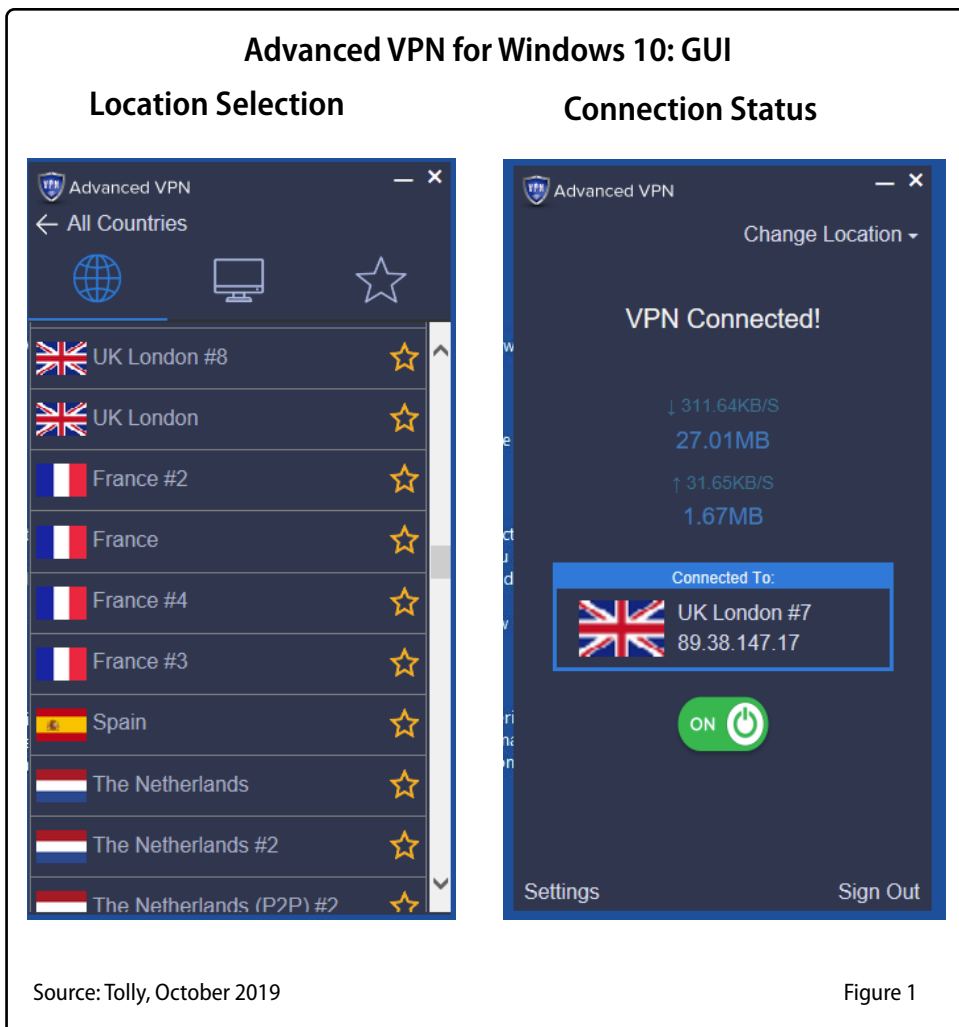
Hulu

This test was run using two US tunnel locations. For each location, engineers logged into the Hulu streaming service and verified that content could be streamed successfully.

BBC

This test was run using two UK tunnel locations. For each location, engineers logged into the BBC streaming service and verified that content could be streamed successfully using the BBC iPlayer streaming application.

Peer-to-Peer (P2P)

P2P file sharing is an alternative to downloading a file from a single server.

Advanced VPN for Windows 10: GUI

Location Selection

Connection Status

Source: Tolly, October 2019

Figure 1

With P2P, file content is distributed and is downloaded simultaneously from multiple peer (i.e. client, end-user) computers rather than from a dedicated server.

This test was run using two tunnel locations, one in the US and the Netherlands P2P location. For each location, engineers streamed video using webtorrent.io.

Test Setup & Methodology

All testing was conducted using Microsoft Windows 10 and the Microsoft Edge browser. The Windows environment was run virtualized using Oracle Virtual Box.

Tolly engineers used the currently available public version of Advanced VPN. Default settings were used. See Table 3 for details of the test environment.

Most details of the test methodology are found in the description of the test results. This section will contain any additional information not presented previously.

Test Infrastructure

PC Environment

Operating System	Microsoft Windows 10 Enterprise Eval. (64-bit)
OS Build	17763.rs5_release 180914-1434
Browser (Primary)	Microsoft Edge 44.17763.771.0 EdgeHTML 18.17763
Browser (Hulu)	Google Chrome 77.0.3865.120
BitTorrent Client	WebTorrent Desktop 0.21.0
Virtualization Env.	Oracle Virtual Box 6.0.12 r133076
VM Specs	4GB RAM

Advanced VPN

Version	1.09
Configuration	Default
VPN Type	IKEv2 (Default)

Streaming Services

https://netflix.com

https://hulu.com

https://www.bbc.co.uk/iplayer

Test Applications

IP address validation	WhatIsMyIPAddress.com
	WhatIsMyIP.net
DNS Leak Test	DNSLeaktest.com

Table 3

Source: Tolly, October 2019

Connectivity Validation

For each of the locations, engineers verified a successful tunnel connection. Once connected, engineers used an IP address validation utility to confirm that the IP address assigned to the test client was local to the tunnel termination location.

Readers should realize that a single IP address validation service might have outdated results for certain locations and might not indicate the correct city. Test engineers used multiple IP address validation utilities to confirm agreement on IP address locations.

DNS Leak Test

If a domain name service (DNS) resolution request is sent to a DNS server that is local to the client's actual location, that is considered a DNS "leak" that could compromise privacy. Engineers used the DNS Leak Test site to identify all DNS servers that were assigned to a client at each location to confirm that only DNS servers at the tunnel termination were visible.

Video Streaming

The tests are described in full in the test results section.

For the test of streaming BBC content, the Microsoft Edge browser private mode was used.

For tests of Hulu, the Google Chrome browser was used as Hulu streaming did not function using Microsoft's Edge browser even without VPN tunnels.

For the test of streaming BBC content, the Microsoft Edge browser private mode was used.

P2P

The tests are described in full in the test results section.

Engineers used WebTorrent Desktop as the BitTorrent client. This program implements the Bit Torrent protocol using WebRTC.

About Tolly

The Tolly Group companies have been delivering world-class IT services for 30 years. Tolly is a leading global provider of third-party validation services for vendors of IT products, components and services.

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Visit Tolly on the Internet at:
http://www.tolly.com

About Advanced VPN

Advanced VPN, Inc. is an IT high-tech company that specializes in developing Internet security and privacy tools. The company secures and anonymizes the online presence of over millions users across the globe.

For more information on Advanced VPN, visit:

https://advancedvpn.com

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