

DH2i DxConnect 21.0 Software: Administration Guide

DH2i Company

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TCP Tunnels

DH2i TCP Tunneling is a new way for accessing specific applications without the cost, complexity, and security risks of VPNs. DH2i TCP Tunneling is designed for scaling across the internet to build a secure distributed application infrastructure from any remote client to any host, anywhere. DH2i TCP Tunneling features:

Configuration and Management Simplicity

- Lightweight Windows or Linux install
- Simply install and connect
- No dedicated VPN routers
- No ACLs, no firewall rules
- No expensive cloud VPN services

Highest Level Security and Performance

- Application-level micro-tunneling
- Discreetly transports TCP payloads via UDP
- Eliminates lateral network attack surface
- Highly available, auto self-healing tunnels
- Invisible to port scanners

See the Tunnel Manager section below for details on how to configure a tunnel with DxConnect.

Configuration Information

DxConnect allows the user to create direct secure connections (tunnels) between a remote client and one or more servers without the need for a VPN, expensive hardware, or data passing through a vendor portal. DxConnect transfers encrypted packages across system-assigned UDP ports so there is no need to open a TCP or UDP port to the internet. With DxConnect, data transfers securely between custom-designed tunnels. DH2i's DxConnect uses a highly available proprietary cloud matchmaking service to keep connections alive, but no payload data is passed through the matchmaker – all data is directly encrypted between servers.

The following sections describe hardware and software requirements for DxConnect.

Minimal System Requirements

Physical/Virtual Server Requirements

DxConnect is hardware agnostic. Please follow operating system/application best practices to achieve performance expectations.

Supported Operating Systems

Below are the supported operating systems for DxConnect:

- Windows Server 2008 R2, x64 *
- Windows Server 2012, x64
- Windows Server 2012 R2, x64
- Windows Server 2016, x64
- Windows Server 2019, x64
- Windows 7 * and above, x86 and x64

Network Configuration Guidelines

DxConnect uses a proprietary communications protocol based on TCP and UDP for its gateway
group communication. To mitigate or remove the potential for heavy network traffic adversely
affecting DxConnect communications, DH2i allows the use of a private or stand-alone network
for DxConnect. This dedicated network can be created using a crossover cable for a two-server
cloud or an Ethernet switch for groups or clouds comprised of three or more servers.

Note: DxConnect Software requires internet access to register with the DH2i matchmaking service.

DxConnect supports the following network configurations:

- IPv4
- IPv6
- Multiple subnet ranges

Installing and Configuring a New DxConnect Client

Pre-requisite procedure for a new DxConnect gateway group for Windows

- Install Windows and apply the latest patches. Consult Microsoft documentation for further details
- Install Microsoft .NET Framework 4.5.1 or higher.

^{*}No longer maintained by Microsoft

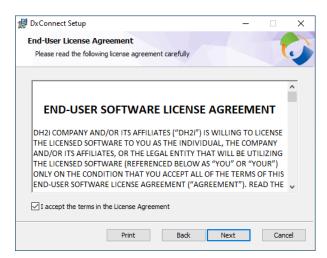
Installing DxConnect Software for Windows

Double-click the DxConnect setup program on the first server or desktop.

A welcome screen will be displayed. Click **Next** to continue with the installation.

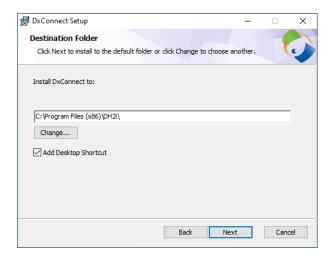


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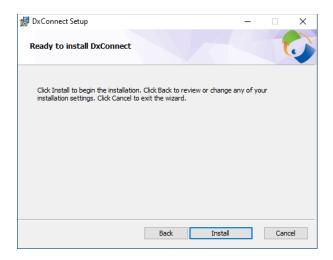


In the "Destination Folder" window, select an installation folder for the DxConnect Software and click **Next**.

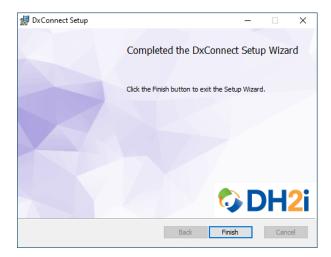
Deselect the **Add Desktop Shortcut** checkbox if a desktop shortcut is not required. The box is checked by default.



In the "Ready to install" window, click Install.

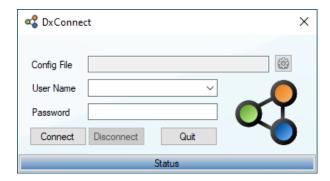


Click **Finish** to complete the installation of DxConnect.



Log in with DxConnect Client

Double-clicking the DxConnect Client icon will display the following login dialog.

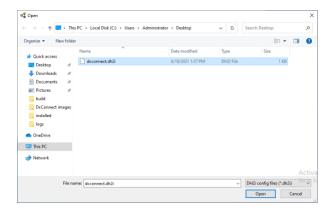


Click the gear icon to modify settings.



Config File

Type or select a configuration file location. To select a *.dh2i file, click the ... (ellipsis) button. The configuration file contains connection information about the client's cluster or gateway group. This file is exported from DxAdmin or DxOdyssey Client via the Client Manager window, or through DxCLI commands.



Heartbeat

The client heartbeat setting determines how many seconds a client will wait before checking in with its cluster or gateway group. This number may be lowered if the client's connection is being aged out of the router's NAT table before it can check-in with the cluster or gateway group.

OK

Applies config file and heartbeat settings.

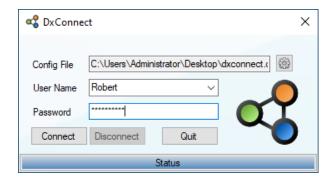
Cancel

Discards any pending changes.

Overview of DxConnect Client

The DxConnect Client consists of two dialogs. The main dialog allows the user to connect to a tunnel or tunnels through the DH2i matchmaking service. The second dialog is a modeless status screen.

Main Dialog



A valid user name and password is required to log in to the gateway group. These credentials are managed by the DxOdyssey gateway administrator. The user name is case-sensitive and can be any combination of alpha-numeric characters, the password is case-sensitive and can be any combination of alpha-numeric characters, punctuation, or symbols.

Connect

Clicking on the connect button will attempt to communicate with the matchmaking service to get server connection information using the configuration file specified. If the connection to the matchmaking service is successful, DxConnect will attempt to connect to a server using the username and passcode supplied. If there are no servers available, the wrong combination of username, password, and configuration file, or if there is a problem connecting to the matchmaking server, DxConnect will fail with

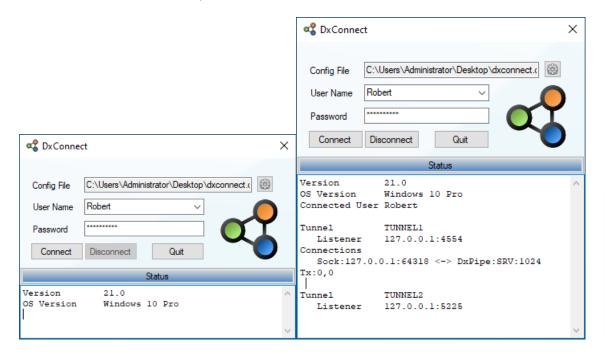
a status of disconnected. If communication with the matchmaking service was successful DxConnect will try 5 times to connect to the server before failing.

Disconnect

Clicking on the disconnect button will disconnect the DxConnect client from any servers.

Status

Clicking on the status button will display the DxConnect version and the operating system. In addition, if the status is connected the details will include: the connected username, all available tunnels and listeners, and the details of any current connection.



Quit

Clicking on the quit menu item will close the DxConnect application.

Note: Clicking on the in the top left of the main screen will not close DxConnect. This will minimize it to the notification tray.

Tray Icon

The main form contains all the actions available. When the main form is not displayed the actions may be directly accessed by right clicking the icon in the notification tray.

There are three possible icons displayed on the taskbar and in the notification tray.

Initial icon

Initial icon displayed when DxConnect is first opened.



Connected icon

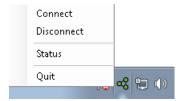
Icon displayed when the status is connected.



Disconnected icon

Icon displayed when the status is disconnected.

When the user right-clicks the mouse button in the notification tray on the DxConnect icon, the following menu is displayed.



Connect

Clicking on the connect menu item will display the DxConnect main screen.

Disconnect

Clicking on the disconnect menu item will disconnect the DxConnect client from any tunnels and display the DxConnect main screen.

Status

Clicking on the status menu item will display a DxConnect status form. The status form will display the DxConnect version and the operating system. In addition, if the status is connected the details will include: the connected username, all available tunnels and listeners, and the details of any current connection.

Status Dialog



Quit

Clicking on the quit menu item will close the DxConnect application.

Support and Other Resources

How to request technical support

For technical assistance, contact DH2i Technical Support through one of the following methods:

Email: support@dh2i.com
Web: support.dh2i.com

Phone: U.S.: (800) 380-5405 ext 2

Before the user submit a support request, please collect the following information:

- 1. Information on your hardware and software
- 2. DxConnect version.
- 3. Describe the steps to reproduce the problem.
- 4. Supply event log.
- 5. Exact error message(s).
- 6. Specify how many times the problem has occurred.
- 7. State the actual results.
- 8. Describe the expected results.

1. Supply information on your hardware and software

Use the All programs > Accessories > System tools > System information or other product that will give details about the software and hardware being run on the system.

2. Supply DxConnect version

The version of DxConnect can be obtained by using DxConnect Client. Navigate to the status form and write down the version from the details pane.

Please make sure that the user is running the same version of DxConnect on all machines. If for some reason this is not the case, please state the version of DxConnect on each of the members.

3. Describe the steps to reproduce the problem

Please write down the exact steps that led to the problem. If DH2i Technical Support is unable to reproduce the problem, it may be difficult to identify, investigate and fix the problem.

Please provide the approximate time the issue occurred.

4. Supply event log

The DxConnect log can be found in the following directory where USERNAME is the name of the loggedon user.

C:\Users\USERNAME\AppData\Roaming\DH2i

5. Supply the error message(s)

If an error message is displayed in a message box, write down the exact text of the message. Please translate the text into English, if the message is in some other language. Also the user may perform a screen capture of the error message as follows:

- A. Make sure that the error message is the active window. Press Alt+PrtScn to place a bitmap copy of the window in the Clipboard.
- B. Open the built-in MS Paint bitmap editor, and paste the image.
- C. Go to "File->Save as" and choose a filename.

In case a STOP error occurs that leads to a "blue screen of death", it is important to obtain the kernel memory dump that should be created at %SystemDrive%:\Windows\Memory.dmp. If the user reviews the memory dump and suspects the STOP error may be DxConnect related, compress and upload the memory dump via the file manager in your account at http://clients.dh2i.com. Then contact support@dh2i.com with a problem description according to the steps provided in this section. A DH2i Technical Support engineer will analyze the memory dump and offer suggestions to resolve the error based on his/her findings.

6. Specify how many times the problem has occurred

The best property a problem may have is to be reproducible every time a particular test is run. Unfortunately, this is not always the case, if a something shows up only once chances are it won't be discovered.

Please specify the frequency with which a particular bug is occurring - every time the user use the same steps, intermittent (how many times in how many tests), just once.

7. State the actual results

Describe the exact results achieved during the test using quantitative values, when possible. For example, avoid saying just "the machine hangs". Instead say something along the lines of "Windows Explorer stopped responding (hanged), we waited for X minutes, nothing changed, we had to kill the explorer process".

8. Describe the expected results

Please describe in detail the expected test results.

References

• DH2i Support Portal

Contacting DH2i

DH2i Company Technical support:

Email: support@dh2i.com
Web: support.dh2i.com

Phone: U.S.: (800) 380-5405 ext 2 Information requests: info@dh2i.com

Sales inquiries: sales@dh2i.com
Website: www.dh2i.com

Mailing address: DH2i Company 320 East Vine Drive, Ste 321 Fort Collins, CO 80528

USA