Tanium™ Direct Connect User Guide

Version 1.8.9

January 13, 2021

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Table of contents

Direct Connect overview

Direct Connect provides a communication channel for other Tanium™ modules and a central location for configuring and administering direct endpoint connections across modules.

With Direct Connect, you can configure the connection settings that are shared by Tanium modules for establishing direct endpoint connections. Since Direct Connect uses mutual authentication, both IP addresses and self-signed certificates are supported.

Product integration

Tanium™ Client Management

Client Management uses Direct Connect to access client health information from endpoints. For more information, see Client Management User Guide: Monitoring client health.

Tanium™ Enforce

Enforce encryption management policies use Direct Connect to transfer encryption keys securely from the client to the recovery key database during the encryption process. For more information see Enforce User Guide: Encryption management.

Tanium™ Performance

Use Direct Connect with Performance to view historical process-level data from a single endpoint for analysis and troubleshooting. For more information, see Performance User Guide: Connecting directly to endpoints.

Tanium™ Protect

Protect encryption management policies use Direct Connect to securely retrieve encryption keys from the endpoint. For more information see Protect User Guide: Encryption management.

Tanium™ Reveal

Reveal uses Direct Connect to view files on endpoints that match configured rules and patterns. For more information, see Reveal User Guide: Investigating rule matches and Reveal User Guide: Validating pattern matches.

Tanium™ Threat Response

Threat Response uses Direct Connect to connect to live endpoints and explore data. For more information, see Threat Response User Guide: Connecting to live endpoints and exploring data.

Active endpoint sessions

You can review open and pending endpoint sessions across Tanium modules. Use active endpoint connections to see the active connections on the server. For more information, see Reviewing active endpoint sessions.

Getting started

Step 1: Install and configure Direct Connect

Install and configure Direct Connect, either through automatic configuration with default settings (Tanium Core Platform 7.4.2 or later only) or through manual configuration with custom settings.

For more information, see Installing Direct Connect on page 16.

Step 2: Configure a zone proxy

If you want to use Direct Connect with endpoints that connect to the Module Server through a Zone Server, you must configure a zone proxy. For more information, see Configure Zone Proxies.

Direct Connect requirements

Review the requirements before you install and use Direct Connect.

Tanium dependencies

Make sure that your environment meets the following requirements.

Component	Requirement
Tanium™ Core Platform	• 7.3.314.4250 or later • 7.4.1.1939 or later
Tanium™ Appliance	(Optional) If you are using a Tanium Appliance for your Zone Server, you must use Tanium operating system (TanOS) 1.5.2 or later. • For TanOS 1.5.2 - 1.5.4, you must use the TanOS shell to install the Direct Connect Zone Proxy. • For TanOS 1.5.5 and later, you can install the Direct Connect Zone Proxy through the Tanium Operations menu on the Zone Server appliance. For more information, see Appliance Deployment Guide: Install the Direct Connect Zone Proxy. To install the Direct Connect Zone Proxy on a Tanium Appliance with the All-in-One role, use the TanOS shell.
Tanium™ Client	Any supported version of Tanium Client. For the Tanium Client versions supported for each OS, see Tanium Client User Guide: Client version and host system requirements. If you use a client version that is not listed, certain product features might not be available, or stability issues can occur that can only be resolved by upgrading to one of the listed client versions.
Tanium™ products	• Tanium™ Endpoint Configuration 1.2 or later (installed as part of Tanium™ Client Management 1.5 or later) • Tanium Protect is optional, but if you install Direct Connect 1.3.x or later for use with Protect, you must use Protect 2.1.1 or later.
	If you are using any of the following Tanium™ modules that use the Tanium™ Client Recorder Extension, you must use the specified versions: • Tanium™ Integrity Monitor 1.7.0.0035 or later • Tanium™ Map 1.1.1.0006 or later • Tanium™ Threat Response 1.2.0.0037 or later • Tanium™ Trace 2.9.0.0035 or later

Tanium Module Server

Direct Connect is installed and runs as a service on the Module Server. The impact on the Module Server is minimal and depends on usage.

Endpoints

Supported operating systems

The following endpoint operating systems are supported with Direct Connect.

Operating System	Version	Notes
Windows	• Windows 7 Service Pack 1 or later • Windows Server 2008 R2 Service Pack 1 or later	Windows 7 Service Pack 1 requires Microsoft KB2758857.
macOS	Same as Tanium Client support. See Tanium Client User Guide: Host system requirements.	
Linux	Same as Tanium Client support. See Tanium Client User Guide: Host system requirements.	

Host and network security requirements

Specific ports and processes are needed to run Direct Connect.

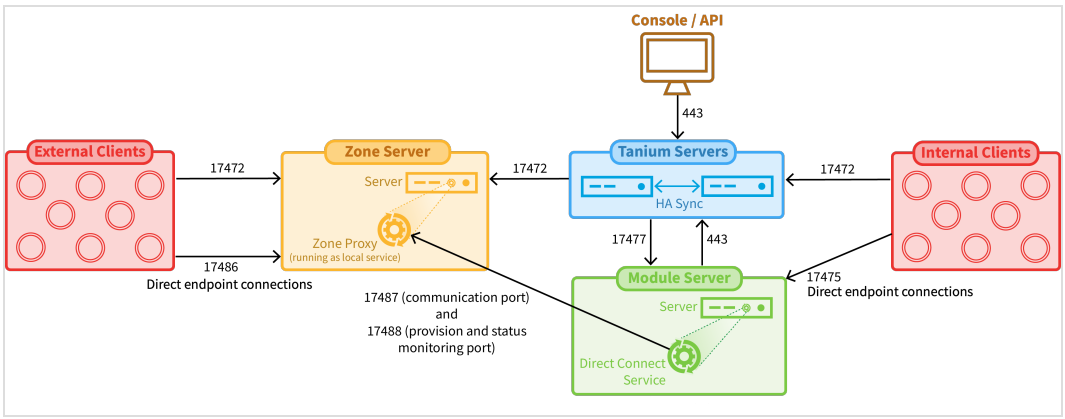
Ports

The following ports, which communicate over HTTPS using TLS 1.2 (RSA 2048-bit), are required for Direct Connect.

Source	Destination	Port	Protocol	Purpose
Tanium Client (internal)	Module Server	17475	TCP	Used by the Module Server for endpoint connections to internal clients.
Tanium Client (external)	Zone Server[1]	17486	TCP	Used by the Zone Server for endpoint connections to external clients. The default port number is `17486`. If needed, you can specify a different port number when you configure the zone proxy.
Module Server	Zone Server[1]	17487	TCP	Used by the Zone Server for Module Server connections. The default port number is `17487`. If needed, you can specify a different port number when you configure the zone proxy.
		17488	TCP	Allows communication between the Zone Server and the Module Server. On TanOS, the Direct Connect Zone Proxy installer automatically opens port `17488` on the Zone Server. This port must be manually opened on Windows.
Tanium Server	Module Server	17477	TCP	Tanium Server initiates connections to the Module Server on port 17477.

[1] These ports are required only when you use a Zone Server.

Best Practice: Configure firewall policies to open ports for Tanium traffic with TCP-based rules instead of application identity-based rules. For example, on a Palo Alto Networks firewall, configure the rules with service objects or service groups instead of application objects or application groups.



Direct Connect supports the following cipher suites for encrypting information in TLS communication:

- ECDHE-ECDSA-AES256-GCM-SHA384
- ECDHE-RSA-AES256-GCM-SHA384
- ECDHE-ECDSA-AES128-GCM-SHA256
- ECDHE-RSA-AES128-GCM-SHA256
- ECDHE-ECDSA-AES256-SHA384
- ECDHE-RSA-AES256-SHA384
- ECDHE-ECDSA-AES128-SHA256
- ECDHE-RSA-AES128-SHA256

Security exclusions

If security software is in use in the environment to monitor and block unknown host system processes, your security administrator must create exclusions to allow the Tanium processes to run without interference. For a list of all security exclusions to define across Tanium, see Tanium Core Platform Deployment Reference Guide: Host system security exclusions.

Table 1: Direct Connect security exclusions

Target Device	Notes	Process
Module Server		*<Module Server>*\services\endpoint-configuration-service\TaniumEndpointConfigService.exe

Table 1: Direct Connect security exclusions (continued)

Target Device	Notes	Process
Windows endpoints		<*Tanium Client*>\TaniumClientExtensions.dll
		<*Tanium Client*>\TaniumClientExtensions.dll.sig
		<*Tanium Client*>\extensions\TaniumDEC.dll
		<*Tanium Client*>\extensions\TaniumDEC.dll.sig
	7.2.*x* clients[1]	<*Tanium Client*>\Python27\TPython.exe
	7.4.*x* clients[1]	<*Tanium Client*>\Python38\TPython.exe
	7.4.*x* clients	<*Tanium Client*>\Python38*.dll
		<*Tanium Client*>\TaniumCX.exe
macOS endpoints		<*Tanium Client*>/libTaniumClientExtensions.dylib
		<*Tanium Client*>/libTaniumClientExtensions.dylib.sig
		<*Tanium Client*>/extensions/libTaniumDEC.dylib
		<*Tanium Client*>/extensions/libTaniumDEC.dylib.sig
	7.2.*x* clients	<*Tanium Client*>/python27/bin/pybin
	7.4.*x* clients	<*Tanium Client*>/python38/bin/pybin
		<*Tanium Client*>/TaniumCX
Linux endpoints		<*Tanium Client*>/libTaniumClientExtensions.so
		<*Tanium Client*>/libTaniumClientExtensions.so.sig
		<*Tanium Client*>/extensions/libTaniumDEC.so
		<*Tanium Client*>/extensions/libTaniumDEC.so.sig
	7.2.*x* clients	<*Tanium Client*>/python27/bin/pybin
	7.4.*x* clients	<*Tanium Client*>/python38/bin/pybin
		<*Tanium Client*>/TaniumCX

[1] = TPython requires SHA2 support to allow installation.

Zone proxy server requirements

If you want to use Direct Connect to connect to endpoints that route to the module server through a Zone Server, you must install and configure the Direct Connect Zone Proxy on that Zone Server. For more information, see Configure zone proxies.

IMPORTANT: For best results, do not use a load balancer in front of your Zone Server. If you must use a load balancer, it must be configured for persistent TCP connections and the port that you configure in the Direct Connect Zone Proxy for the **Endpoint Inbound Port** must be open on the load balancer. By default, this port is `17486`.

User role requirements

The following tables list the role permissions required to use Direct Connect. For more information about role-based access control (RBAC), role permissions, and associated content sets, see Tanium Core Platform User Guide: Managing RBAC.

Table 2: Tanium Direct Connect User Role Privileges

Permission	Direct Connect Administrator	Direct Connect User	Direct Connect Read Only User	Direct Connect Service Account[3]	Direct Connect Endpoint Configuration Approver[2]
Show Direct Connect[1] Allows users to access the Direct Connect workbench	✓	✓	✓	✗	✓
Direct Connect Session Read Allows users to view endpoint connections	✓	✓	✓	✗	✗
Direct Connect Session Write Allows users to create and manage endpoint connections	✓	✓	✗	✗	✗
Direct Connect Settings Read Allows users to view Direct Connect settings	✓	✗	✗	✗	✓
Direct Connect Settings Write Allows users to modify Direct Connect settings	✓	✗	✗	✗	✗
Direct Connect Logs Read Allows users to view the Direct Connect logs	✓	✗	✗	✗	✗

Table 2: Tanium Direct Connect User Role Privileges (continued)

Permission	Direct Connect Administrator	Direct Connect User	Direct Connect Read Only User	Direct Connect Service Account[3]	Direct Connect Endpoint Configuration Approver[2]
Direct Connect Cron Exec Allows performing service account work	✗	✗	✗	✓	✗
Direct Connect Endpoint Configuration Approve Allows approval of Endpoint Configuration items for Direct Connect	✗	✗	✗	✗	✓

[1] To install Direct Connect, you must have the reserved role of Administrator.

[2] This role provides module permissions for Tanium Endpoint Configuration. You can view which Endpoint Configuration permissions are granted to this role in the Tanium Console. For more information, see Tanium Endpoint Configuration User Guide: User role requirements.

[3] If you installed Tanium Client Management, Endpoint Configuration is installed, and by default, configuration changes initiated by the module service account (such as tool deployment) require approval. You can bypass approval for module-generated configuration changes by applying the **Endpoint Configuration Bypass Approval** permission to this role and adding the relevant content sets. For more information, see Tanium Endpoint Configuration User Guide: User role requirements.

Table 3: Provided Advanced user role permissions

Permission	Content Set for Permission	Direct Connect Administrator	Direct Connect Read Only User	Direct Connect Service Account	Direct Connect User	Direct Connect Endpoint Configuration Approver
Read Sensor	Reserved	✓	✗	✗	✓	✓
Read Sensor	Base	✓	✗	✗	✓	✗
Read Sensor	Direct Connect	✓	✗	✓	✓	✓
Read Action	Direct Connect	✓	✗	✓	✓	✓
Read Own Action	Direct Connect	✓[1]	✗	✓[1]	✓[1]	✓[1]
Write Action	Direct Connect	✓	✗	✓	✓	✗
Show Preview	Direct Connect	✓[1]	✗	✓[1]	✓[1]	✗
Read Plugin	Direct Connect	✓[1]	✓	✓[1]	✓[1]	✓

Table 3: Provided Advanced user role permissions (continued)

Permission	Content Set for Permission	Direct Connect Administrator	Direct Connect Read Only User	Direct Connect Service Account	Direct Connect User	Direct Connect Endpoint Configuration Approver
Execute Plugin	Direct Connect	✓	✗	✓	✗	✓
Execute Plugin	Endpoint Configuration	✓	✗	✓	✗	✓
Read Package	Direct Connect	✓[1]	✗	✓[1]	✓[1]	✓
Write Package	Direct Connect	✓	✗	✓	✓	✗
Read Saved Question	Reserved	✓	✓	✓	✓	✗
Read Saved Question	Default	✗	✗	✓	✗	✗
Read Saved Question	Direct Connect	✓	✓	✓	✓	✓

[1] Denotes a provided permission.

For more information and descriptions of content sets and permissions, see the Tanium Core Platform User Guide: Users and user groups.

Installing Direct Connect

Use the **Tanium Solutions** page to install Direct Connect and choose either automatic or manual configuration:

- **Automatic configuration with default settings** (Tanium Core Platform 7.4.2 or later only): Direct Connect is installed with any required dependencies and other selected products. After installation, the Tanium Server automatically configures the recommended default settings. This option is the best practice for most deployments. For details about the automatic configuration for Direct Connect, see Import and configure Direct Connect with default settings on page 16.
- **Manual configuration with custom settings**: After installing Direct Connect, you must manually configure required settings. Select this option only if Direct Connect requires settings that differ from the recommended default settings. For more information, see Import and configure Direct Connect with custom settings on page 17.

Best Practice: Use the **Automatic configuration with default settings** option.

Before you begin

- Read the Release Notes.
- Review the Direct Connect requirements on page 9.
- If you are upgrading from a previous version, see Upgrade Direct Connect.

Import and configure Direct Connect with default settings

When you import Direct Connect with automatic configuration, the following default settings are configured:

- The Direct Connect service account is set to the account that you used to import the module.
- The Direct Connect action group is set to the computer group `All Computers`.
- The **Fully Qualified Domain Name** setting in the **Endpoint Connection** settings is set to the first detected external, IPv4 address that is closest to the Tanium Server IP address.
  This domain name must resolve to the Module Server from all endpoints in all direct endpoint connections. After the initial installation and configuration completes, you can verify this value on the **Endpoint Connection** tab in the **Direct Connect** settings and update it, if needed.

To import Direct Connect and configure default settings, be sure to select the **Apply Tanium recommended configurations** check box while performing the steps in Tanium Console User Guide: Manage Tanium modules. After the import, verify that the correct version is installed: see Verify Direct Connect version on page 24.

Import and configure Direct Connect with custom settings

To import Direct Connect without automatically configuring default settings, be sure to clear the **Apply Tanium recommended configurations** check box while performing the steps in Tanium Console User Guide: Manage Tanium modules. After the import, verify that the correct version is installed: see Verify Direct Connect version on page 24.

Configure the service account

The Direct Connect service account runs background processes for the Direct Connect service. This user requires the following roles and access:

- The **Direct Connect Service Account** role.
- If you installed Tanium Client Management, Endpoint Configuration is installed, and by default, configuration changes initiated by the module service account (such as tool deployment) require approval. You can bypass approval for module-generated configuration changes by applying the **Endpoint Configuration Bypass Approval** permission to this role and adding the relevant content sets. For more information, see Tanium Endpoint Configuration User Guide: User role requirements.

1. From the Main menu, go to **Administration > Shared Services > Direct Connect** to open the Direct Connect **Home** page. From the Direct Connect **Home** page, click Settings and open the **Service Account** tab.
2. Update the service account settings and click **Save**.

Configure the Direct Connect action group

By default, the Direct Connect action group is set to the **No Computers** computer group. You can set the action group to **All Computers** or any computer groups that you have defined.

1. From the Main menu, go to **Administration > Actions > Scheduled Actions**.
2. In the list of action groups, click **Tanium Direct Connect**.
3. Select the computer group for the group of endpoints that you want to use for Direct Connect. Click **Save**.

Configure Endpoint Connection settings

Specify Endpoint Connection settings to define the domain name to use to connect to the Module Server, certificates to authenticate connections to the Module Server and endpoints, and the port to use for connections.

1. From the Direct Connect **Home** page, click Settings and open the **Endpoint Connection** tab.

2. In the **Fully Qualified Domain Name** section, provide a domain name to use to connect to the Module Server. The domain name that you provide must resolve to the Module Server from all endpoints in all direct endpoint connections. Direct Connect validates the name you provide to ensure the format. Verify the accuracy of the domain name you provide.
3. The **Port** is set to 17475 by default. If needed, you can modify this port. Make sure that incoming connections to this port are allowed by applicable firewall configurations.
4. In the **Action Lock** section, specify the behavior that you want for Direct Connect when action lock is enabled on endpoints:
   - **Block All Direct Connection Actions**
   - **Allow New Connections**
   - **Allow New Connections and Configuration Changes**

   Note: For more information about action locks, see Tanium Console User Guide: Managing action locks.
5. Click **Save**.
6. Enter your password and click **OK**.

If the **Fully Qualified Domain Name** validates successfully, success messages are shown:

```
The endpoint connection settings saved successfully.
Content build is in progress. Connection settings will deploy to endpoints
once complete.
```

If an error occurs, correct the fully qualified domain name and save again. If the information validates and saves successfully, packages for each supported operating system are created with the configuration information that is needed to use Direct Connect. These packages are distributed using a scheduled action to the Tanium Direct Connect action group.

Configure certificates

Configure certificates to authenticate connections to the Tanium Module server and endpoints.

1. From the Direct Connect **Home** page, click Settings and open the **Certificates** tab.
2. In the **Server Certificate** section, the **Install a new certificate** option is selected by default and cannot be modified during the initial configuration. A certificate is generated and installed to authenticate the server when an endpoint starts a connection.

   After a certificate is installed on the server, the expiration date for the certificate is shown. If a certificate is installed, you can select **Renew** to renew the certificate.
3. In the **Client Certificate** section, the **Install a new certificate** option is selected by default and cannot be modified during the initial configuration. A certificate is generated, installed, and deployed to endpoints to authenticate that the endpoint is a Tanium client with permission to connect to the server.

After a certificate is installed, the expiration date for the certificate is shown. If a certificate is installed, you can select **Renew** to renew the certificate.

4. Click **Save**.
5. Enter your password and click **OK**.

Manage solution configurations with Tanium Endpoint Configuration

Tanium Endpoint Configuration delivers configuration information and required tools for Tanium Solutions to endpoints. Endpoint Configuration consolidates the configuration actions that traditionally accompany additional Tanium functionality and eliminates the potential for timing errors that occur between when a solution configuration is made and the time that configuration reaches an endpoint. Managing configuration in this way greatly reduces the time to install, configure, and use Tanium functionality, and improves the flexibility to target specific configurations to groups of endpoints.

> **Note:** Endpoint Configuration is installed as a part of Tanium Client Management. For more information, see the Tanium Client Management User Guide: Installing Client Management.

Additionally you can use Endpoint Configuration to manage configuration approval. For example, configuration changes are not deployed to endpoints until a user with approval permission approves the configuration changes in Endpoint Configuration. For more information about the roles and permissions that are required to approve configuration changes for Direct Connect, see User role requirements on page 13.

To use Endpoint Configuration to manage approvals, you must enable configuration approvals.

1. From the Main menu, go to **Administration > Shared Services > Endpoint Configuration** to open the Endpoint Configuration **Overview** page.
2. Click Settings and click the **Global** tab.
3. Select **Enable configuration approvals**, and click **Save**.

For more information about Endpoint Configuration, see Tanium Endpoint Configuration User Guide.

Configure zone proxies

You can optionally configure a zone proxy to enable connections to endpoints through a Tanium™ Zone Server. This configuration is required to use Direct Connect with endpoints that connect to the Module Server through a Zone Server.

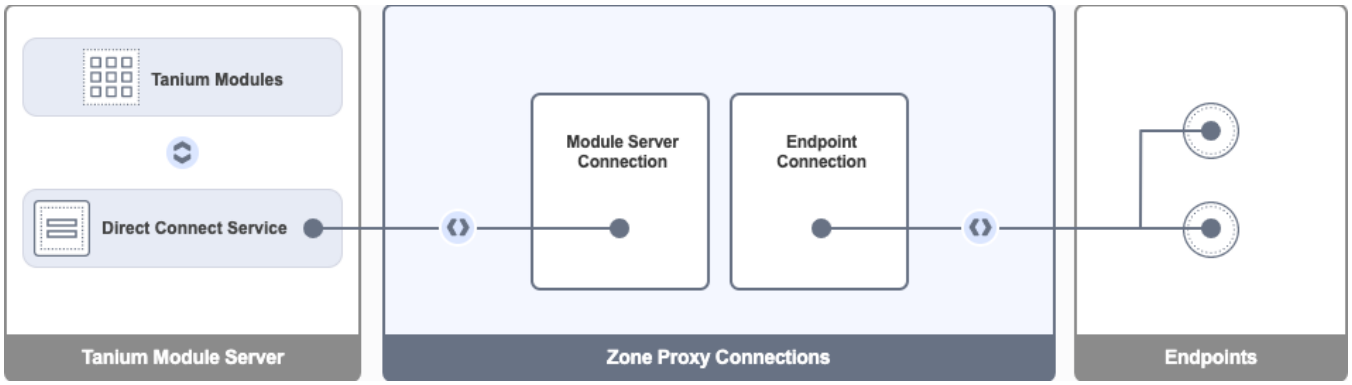


Figure 1: Zone Proxy Server Overview

IMPORTANT: For best results, do not use a load balancer in front of your Zone Server. If you must use a load balancer, it must be configured for persistent TCP connections and the port that you configure in the Direct Connect Zone Proxy for the **Endpoint Inbound Port** must be open on the load balancer. By default, this port is `17486`.

BEFORE YOU BEGIN

Contact Tanium Support to obtain the Direct Connect Zone Proxy Installer file for your Zone Server operating system. For more information, see Contact Tanium Support on page 29.

Confirm that all required ports are available. For more information, see Host and network security requirements.

INSTALL AND CONFIGURE THE DIRECT CONNECT ZONE PROXY

1. Copy the Direct Connect Zone Proxy Installer to the Zone Server.
2. Run the Direct Connect Zone Proxy Installer on the Zone Server to install the Direct Connect Zone Proxy.

   Note:
   - You must use the TanOS shell to install the Direct Connect Zone Proxy on TanOS 1.5.2 - 1.5.4.
   - You can install the Direct Connect Zone Proxy through the Tanium Operations menu on the Zone Server appliance on TanOS 1.5.5 and later. For more information, see Appliance Deployment Guide: Install the Direct Connect Zone Proxy.

The installation process generates the `Provision Secret` and `Certificate` (referred to as the **Provision Payload**).

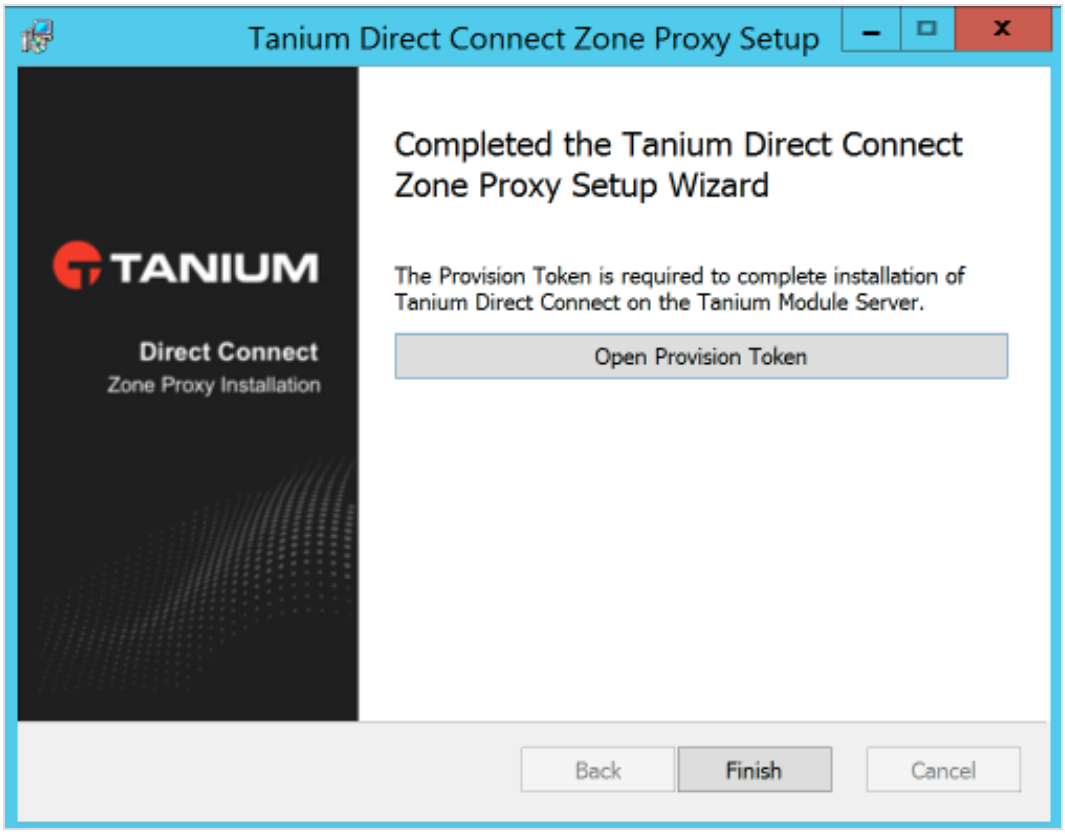
The provision payload is stored in `provision.txt`, which is located in the following directories:

- **TanOS**: *<Tanium Install Directory>*/TaniumDirectConnectZoneProxy/settings/PROVISION.txt

  During the installation process on TanOS, the `Provision Secret` and `Certificate` also appear in the console where you run the installation. You can copy the `Provision Secret` and `Certificate` from the console or from the `PROVISION.txt` file.

- **Windows**: *<Tanium Install Directory>*\Tanium Direct Connect Zone Proxy\settings\PROVISION.txt

  At the end of the installation on Windows, click **Open Provision Token** to open `PROVISION.txt`. You can copy the `Provision Secret` and `Certificate` from this file.



Either copy these during the install or retrieve them from `provision.txt` for use during the subsequent configuration steps. For example:

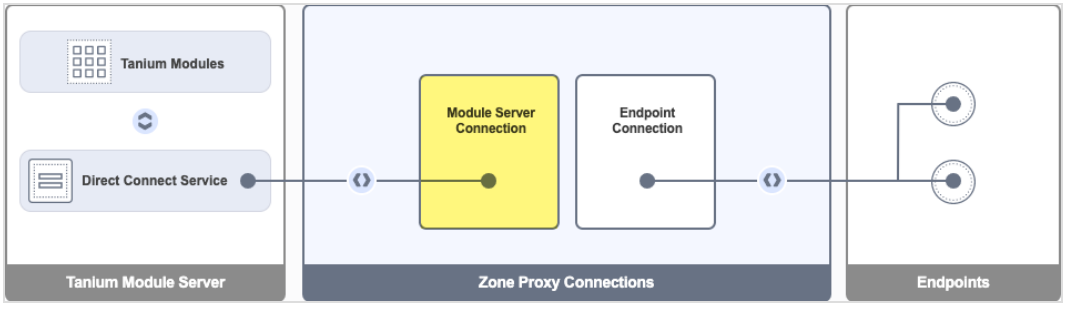
```
-----BEGIN PROVISION SECRET-----
+EPQlEuUloBizbexjtshLuoxhNHA0JuMeOAEwFq/OKpEk6+jUJbFPx8Dol+vL22F
geNrd4/+wbsZwTgL3EUsqg==
-----END PROVISION SECRET-----
-----BEGIN CERTIFICATE-----
MIIC7TCCAdWgAwIBAgIgAwi2sO+h6dq/XIroZ1vK96/sHqxcMRWvkLXFrZrb5pAw
r3AxeSY2NpzDmVcQFNlYUhyR8QOr5hRE7AF9gGKDei6A
-----END CERTIFICATE-----
```

Note: The preceding figure is provided as an example of the `Provision Secret` and `Certificate` values to copy during the installation. The content is intentionally truncated and cannot be used as-is. You must use the values from your installation for the certificate pinning to work. If you use this example `Provision Secret` and `Certificate` in your environment, your configuration will fail.

If needed, you can rerun the installer to generate a new provision payload.

After the installation completes and you save the provision payload (provision secret and certificate), return to Direct Connect.

3. From the Direct Connect menu, click **Zone Proxies**.
4. Click **Add Zone Proxy**.
5. Specify the zone proxy **Name**.
6. Paste the `Provision Secret` and `Certificate` that you saved during the installation into the **Provision Payload** field.
7. Configure the **Module Server Connection**:



   a. Specify the **Zone Proxy Host**.

   This value is the host name or IP address that is used by the Module Server to connect to the Zone Server. It is the Zone Server's internal IP address, host name, or fully qualified domain name that can be resolved by the Module Server. For example, `DMZZoneServer.internal.local`.

b. Specify the **Bind IP Address**.

This value is the binding IP address that is used by the Zone Server for Module Server connections. It is the Zone Server's internal IP address that can be reached by the Module Server.

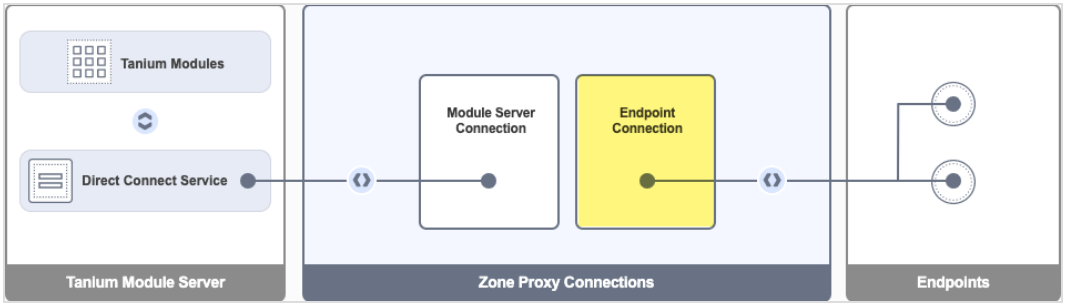
Use this value to specify the IPv4 interface on the Zone Server to bind to for module server connections on multihomed servers. To listen on all interfaces, specify `0.0.0.0`.

> **Note:** In most environments, this value is not the same as the IP address of the Module Server.

c. Specify the **Port**.

This value is the binding port that is used by the Zone Server for module server connections. The default value is `17487`.

8. Configure the **Endpoint Connection**:



a. Specify the **Zone Proxy Host**.

This value is the host name or IP address that is used by endpoints to connect to the Zone Server. It is the Zone Server's external IP address or fully qualified domain name that can be resolved by endpoints. This value is a public, internet-routable IP address or host name. For example, `MyZoneServer.company.com`.

b. Specify the **Bind IP Address**.

This value is the binding IP address that is used by the Zone Server for endpoint connections. It is the Zone Server's external IP address that can be reached by endpoints. This value is a public, internet-routable IP address.

Use this value to specify the IPv4 interface on the Zone Server to bind to for endpoint connections on multihomed servers. To listen on all interfaces, specify `0.0.0.0`.

c. Specify the **Port**.

This value is the binding port that is used by the Zone Server for endpoint connections. The default value is `17486`.

9. Click **Save**.
10. Enter your password and click **OK**.

The status of the zone proxy shows in the **Status** column. When the configuration is complete, the status is **Connected**.

Due to the provisioning process, you cannot modify existing zone proxy configurations. If needed, you can delete the configuration and recreate it with different values. To delete a configuration, hover over the configuration and click **Delete**.

You can also see the status and activity for existing Zone Proxies from this page.

Manage dependencies for Tanium solutions

When you start the Direct Connect workbench for the first time, the Tanium console ensures that all of the required dependencies for Direct Connect are installed at the required version. You must install all required Tanium dependencies before the Direct Connect workbench can load. A banner appears if one or more Tanium dependencies are not installed in the environment. The Tanium Console lists the required Tanium dependencies and the required versions.

1. From the Main menu, go to **Administration > Configuration > Solutions**.
2. Select the required solutions, click **Import Selected**, and then click **Begin Import**. When the import is complete, you are returned to the **Tanium Solutions** page.
3. From the Main menu, go to **Modules > Direct Connect** to open the Direct Connect **Overview** page after you import all of the required Tanium dependencies.

Upgrade Direct Connect

For the steps to upgrade Direct Connect, see Tanium Console User Guide: Manage Tanium modules. After the upgrade, verify that the correct version is installed: see Verify Direct Connect version on page 24.

Verify Direct Connect version

After you import or upgrade Direct Connect, verify that the correct version is installed:

1. Refresh your browser.
2. From the Main menu, go to **Administration > Shared Services > Direct Connect** to open the Direct Connect **Home** page.
3. Click Info  .

What to do next

See Getting started on page 8 for more information about using Direct Connect.

Reviewing active endpoint sessions

Use Direct Connect to gain visibility into all the connections between endpoints and the Module Server. The **Active Connections** section on the Direct Connect **Home** page shows all current Direct Connect sessions across Tanium modules.

The grid shows details for each active session:

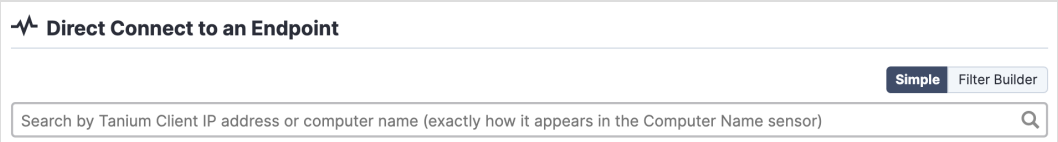
- **Computer Name**: Endpoint computer name.
- **Tanium Client ID**: Endpoint ID that is used for the connection.
- **IP Address**: Endpoint IP Address.
- **Direct Connect Proxy**: Name of the proxy server, if applicable.
- **Action Status**: Current status of the `Open Session` action. Possible values are `Creating`, `Downloading`, `Running`, `Error`, `Succeeded`, `Not Succeeded`, `Complete`, or `Closed`.
- **Direct Connect Status**: Current status of the session.
- **Duration**: Time passed since the connection was first established from the endpoint.
- **Last Message**: Time passed since the last message was received from the endpoint.

Testing direct endpoint connections

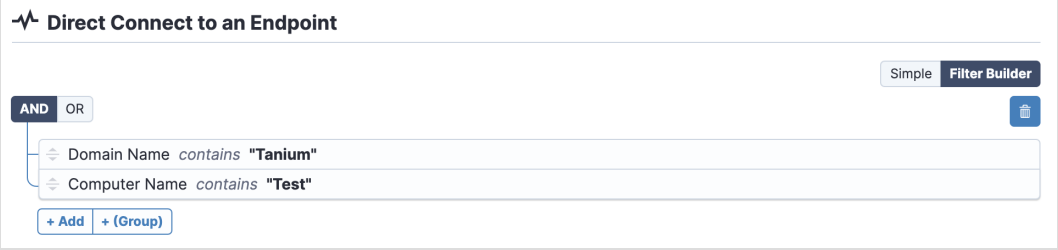
Use Direct Connect to test connections to endpoints without formally creating a connection. Test connections are a helpful tool to ensure that users of Tanium modules can make connections to endpoints and to troubleshoot connection issues if they occur.

Search for the endpoint in the **Direct Connect to an Endpoint** section of the Direct Connect **Home** page.

- To use the simple search, enter the IP address or Computer Name (exactly as it appear in the Computer Name sensor) for the endpoint to which you want to test a connection. Select the endpoint from the results.



- To use a filter, click **Filter Builder**. Build a query to search for the endpoint using advanced filters to filter question results based on match conditions.



  Click **+** and use the controls to add filter conditions:
  - **Add Row**: Add one or more conditions.
  - **Add Group**: Select this option to nest a Boolean operator and then use **Add Row** to build the nested expression.

If the test connection is unsuccessful, see Troubleshooting Direct Connect on page 27.

Troubleshooting Direct Connect

To collect and send information to Tanium for troubleshooting, collect logs and other relevant information.

Generate a support package

Collect information about the current state of the Direct Connect service to use for troubleshooting. The information is saved as a ZIP file that you can download with your browser.

1. From the Direct Connect **Home** page, click Help , then the **Troubleshooting** tab.
2. Click **Generate Support Package**.
3. Click **Download Support Package** to download the ZIP file to the local download directory.
4. Contact Tanium Support to determine the best option to send the ZIP file. For more information, see Contact Tanium Support on page 29.

Change the logging level

If you need greater verbosity in the logs, you can change the log level.

1. From the Direct Connect **Home** page, click Help , then the **Troubleshooting** tab.
2. Adjust the **Log Level** as needed.
   Possible values are: **trace**, **debug**, **info** (default), **warn**, **error**, **fatal**.

> **Note:** This update changes the log level for future logging. It does not affect the data that is available in the support package for previously logged events.

Troubleshoot endpoint connection issues

When you attempt an endpoint connection, Direct Connect iterates through the configured Tanium Servers or Zone Servers for an endpoint in this order until a successful connection occurs:

1. **LastGoodServerName** (if available)
2. The last server used for a successful connection
3. Server with the most successful connections
4. **ServerName** (if specified)
5. Any servers specified in the **ServerNameList**

For more information about **LastGoodServerName**, **ServerName**, and **ServerNameList**, see Tanium Client User Guide: Configuring connections to Tanium Core Platform servers.

If you are unable to establish an endpoint connection, check the status of the `Deploy Direct Connect - Open Session - operating system - session ID` action from the **Action History** page.

If the action ran, but was not successful, check the `<Tanium Client>/Logs/extensions0.txt` log on the endpoint. Make sure that the endpoint can connect to the Module Server using the **Fully Qualified Domain Name** and **Port** that you configured on the **Endpoint Connection** tab in the Direct Connect settings.

If the action did not run on the endpoint, make sure that the endpoint is a member of the Direct Connect action group and has the latest tools installed.

Troubleshoot connection issues through a zone proxy

To use Direct Connect with endpoints that connect to the Module Server through a Zone Server, you must install and configure the Direct Connect Zone Proxy. For more information, see Configure Zone Proxies.

If you are unable to establish an endpoint connection after installing and configuring the Direct Connect Zone Proxy, check the Direct Connect Zone Proxy log for errors: `<Tanium>/TaniumDirectConnectZoneProxy/logs/proxy.log`.

Remove Direct Connect tools from endpoints

You can deploy an action to remove Direct Connect tools from an endpoint or computer group. Separate actions are available for Windows and non-Windows endpoints.

1. In Interact, target the computers from which you want to remove the tools. For example, ask a question that targets a specific operating system:
   `Get Endpoint Configuration - Tools Status from all machines with Is <OS> equals True`, for example:
   `Get Endpoint Configuration - Tools Status from all machines with Is Windows equals True`
2. In the results, select the row for **Direct Connect**, drill down as necessary, and select the targets from which you want to remove Direct Connect tools. For more information, see Tanium Interact User Guide: Managing question results.
3. Click **Deploy Action**.
4. On the **Deploy Action** page, enter `Endpoint Configuration - Uninstall` in the **Enter package name here** box, and select **Endpoint Configuration - Uninstall Tool [Windows]** or **Endpoint Configuration - Uninstall Tool [Non-Windows]**, depending on the endpoints you are targeting.
5. For **Tool Name**, select **Direct Connect**.
6. (Optional) By default, after the tools are removed they cannot be reinstalled. To allow tools to be automatically reinstalled, clear the selection for **Block reinstallation**. Re-installation occurs almost immediately.

> **Note:** If reinstallation is blocked on an endpoint, you must deploy the **Endpoint Configuration - Unblock Tool [Windows]** or **Endpoint Configuration - Unblock Tool [Non-Windows]** package (depending on the targeted endpoints) before the tools can be reinstalled.

7. (Optional) To remove all Direct Connect databases and logs from the endpoints, clear the selection for **Soft uninstall**.
8. (Optional) To also remove any tools that were dependencies of the Direct Connect tools that are not dependencies for tools from other modules, select **Remove unreferenced dependencies**.
9. Click **Show preview to continue**.
10. A results grid displays at the bottom of the page showing you the targeted endpoints for your action. If you are satisfied with the results, click **Deploy Action**.

> **Note:** If you have enabled Endpoint Configuration, tool removal must be approved in Endpoint Configuration before tools are removed from endpoints.

Uninstall Direct Connect

> **CAUTION:** Direct Connect is a shared service that is used by several Tanium solutions. If Direct Connect is in use by another Tanium solution, uninstalling Direct Connect or removing the tools from endpoints could have unintended consequences. Contact support@tanium.com to determine whether uninstalling Direct Connect is advisable in your environment.

1. From the Main menu, go to **Administration > Configuration > Solutions**.
2. In the **Content** section, select the **Direct Connect** row.
3. Click Delete Selected  and then click **Uninstall** to complete the process.

Contact Tanium Support

To contact Tanium Support for help, send an email to support@tanium.com.