

Basic Sauce Connect Proxy Setup

The Basic Sauce Connect Proxy setup is ideal for non-enterprise users with network configurations that require a proxy to open up communication between Sauce Labs and their web or mobile app.

It is also a key step for any Sauce Connect deployment as a way to verify if you need help from network administrators to complete the configuration. For details, see [Validating Your Basic Sauce Connect Proxy Setup](#).

See the following sections for more information:

What You'll Need

- Review [System and Network Requirements for Sauce Connect Proxy](#) to confirm that your system and network architecture will be compatible with Sauce Connect Proxy
- Download the appropriate version of Sauce Connect Proxy for your operating system, if you haven't yet. For more information, see [Downloading Sauce Connect Proxy](#).
- Understand what kinds of tests you're running:
 - If you're using virtual machines or devices, this document describes the setup to start with
 - if you're testing real devices, see [Sauce Connect Proxy Setup for Real Device Cloud](#).
- Know your account details including:
 - The url of the **datacenter** you need to use; for more information, see [Data Center Endpoints](#).
 - Your Sauce Labs username and access key, which you can find in Sauce Labs under **User Profile > User Settings**

NOTE: Sauce Labs recommends [setting all of the values above as environment variables](#) to protect your username and api key from exposure, and also for future convenience.

Validating Your Basic Sauce Connect Proxy Setup

Once you've downloaded the Sauce Connect Proxy, you can validate that it works on your network by completing the following steps:

1. Launch a tunnel with the following flags, per the [Sauce Connect Proxy Command Line Reference](#):

```
$ bin/sc -u $SAUCE_USERNAME -k $SAUCE_ACCESS_KEY -x $SAUCE_DC -i TUNNEL_ID
```

where:

- SAUCE_USERNAME is the [username assigned to your Sauce Labs account](#)
- SAUCE_ACCESS_KEY is the [access key associated with that account](#)
- SAUCE_DC is the url of the **datacenter** you need to use. By default, the `-x` option is not required if you're using the default US West data center. If you're using the Read Device Cloud or the European Data Center, `-x SAUCE_DC` is required.
- TUNNEL_ID is the identifier or name of the tunnel; for more information, see [Using Tunnel Identifiers](#).

1. Select an appropriate test script. Options might include:
 - One your existing tests if available
 - An example from [Sauce Labs Demonstration Scripts](#). Follow the instructions to configure the test before proceeding to step 3 below.
2. If you are using an tunnel identifier, add the following to the desired capabilities of the test:

Where TUNNEL_ID is the identifier or name of the tunnel from step 1.

4. When you see `connected`, log in to [Sauce Labs](#) and go to **Tunnels**. Under **Active Tunnels**, you should see the tunnel you've just started.
5. Your next step depends on the outcome of the test:

- If the test isn't working, see the section [Test Not Working?](#) below.
- If the test succeeds, you should see Sauce Connect Proxy icon appear next to your test.

| | | | | |
|---|----------------|---|---------|------|
| ✓ | loginTestValid | ⚡ | ⊗ 10.14 | 🔗 73 |
| ✓ | testAddOneItem | ⚡ | ⊗ 10.14 | 🔗 73 |
| ✓ | testItem3Price | ⚡ | ⊗ 10.14 | 🔗 73 |

Congratulations! You're ready to begin automated testing on your local network.

Test Not Working?

If you're unable to connect, there are a few possible explanations:

- Your network administrator may need to examine firewall settings for any roadblocks. That person or team might need to whitelist Sauce Labs domain names or adjust network rules to allow for Sauce Connect Proxy to make outbound connections to Sauce Labs. For more information, see [System and Network Requirements for Sauce Connect Proxy > Whitelisting for Restricted Networks](#).

NOTE: We strongly discourage whitelisting IP addresses as an alternative to Sauce Connect Proxy when establishing your secure connection. For more information, see [Why Sauce Labs Recommends Sauce Connect Proxy Over Whitelisting IP Addresses](#).
- There could also be an issue with Sauce Labs certificate authentication. The server hosting Sauce Connect Proxy may need to connect to Online Certificate Status Protocol (OCSP) and/or Certificate Revocation List (CRL) services. See [Sauce Connect Proxy Certificate Handling](#) for more information.
- For troubleshooting specific errors or common issues, refer to the [Sauce Connect Proxy Troubleshooting](#) guide and [Sauce Connect Proxy FAQs](#).

Next Step: Starting Tunnels as Needed

Once you've confirmed that your network is configured appropriate for Sauce Connect Proxy, you can start new tunnels as needed.

It is important to be aware of the various options you have for configuring tunnels:

- To use the Basic tunnel configuration, you can use the same steps described in VALIDATING to start all subsequent tunnels.
- To use a more advanced or complex configuration, you can use:
 - [Sauce Connect Proxy Setup with Additional Proxies](#)
 - [High Availability Sauce Connect Proxy Setup](#)
 - Other options described in [Sauce Connect Proxy > Choosing the Right Direction for You or Your Team](#)

As a best practice, Sauce Labs recommends creating a new tunnel for each test suite or build and tearing it down at the end of the test.

Basic Network Configuration Diagram

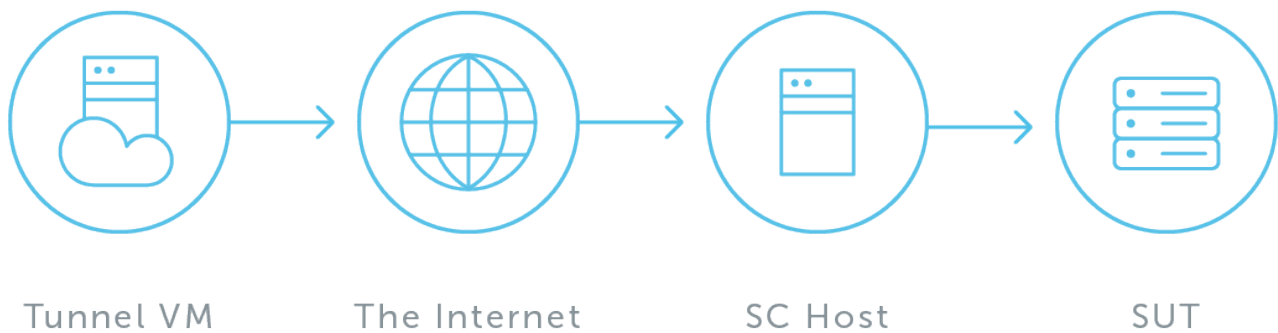


Diagram Legend

| Term | Definition |
|---|---|
| SC Host (Sauce Connect Host) | The machine in your network on which the Sauce Connect Proxy application is running. In this setup, it has a direct connection to the internet. |
| SUT (Site Under Test) | The site that you're testing. It is on the same local network as the SC Host machine. |
| Tunnel VM (Tunnel Virtual Machine) | Virtual machine that hosts Sauce Connect on the Sauce Labs side. |

REMINDER: Sauce Connect must be on the same network as the website or mobile app under test, but it is not required to set it up on the same machine.

Using Tunnel Identifiers with Sauce Connect Proxy

When launching a Sauce Connect tunnel for automated web and mobile app tests, you have two options:

- Launch a Sauce Connect tunnel as-is, without identifying it. That default, unnamed tunnel will automatically be used for all automated tests. This can be useful for small organizations with a limited number of tests.
- Assign a name known as a *tunnel identifier*. To accomplish this, you'll need to launch a tunnel with the `-i` (`--tunnel-identifier`) command to assign the tunnel identifier(s) when starting up Sauce Connect Proxy. Then, you'll need to use the `tunnelIdentifier` option in the desired capabilities of your automated tests. This will trigger your tests to request a specific Sauce Connect tunnel to run your tests through that tunnel.

Sauce Labs recommends using tunnel identifiers so you can have more control and monitoring capability over your tunnel.

EXAMPLE: Automated Test with Sauce Connect Proxy Tunnel Identifiers

Below is an example of how to designate tunnels based on the `tunnelIdentifier` option so that it works properly with an automated test.

Launch a new tunnel on the SC_HOST with the following flags, per the [Sauce Connect Proxy Command Line Reference](#):

MacOS/Linux Example

```
$ sc_download/bin/sc -u $SAUCE_USERNAME -k $SAUCE_ACCESS_KEY -x $SAUCE_DC -i sc-proxy-tunnel
```

Windows Example

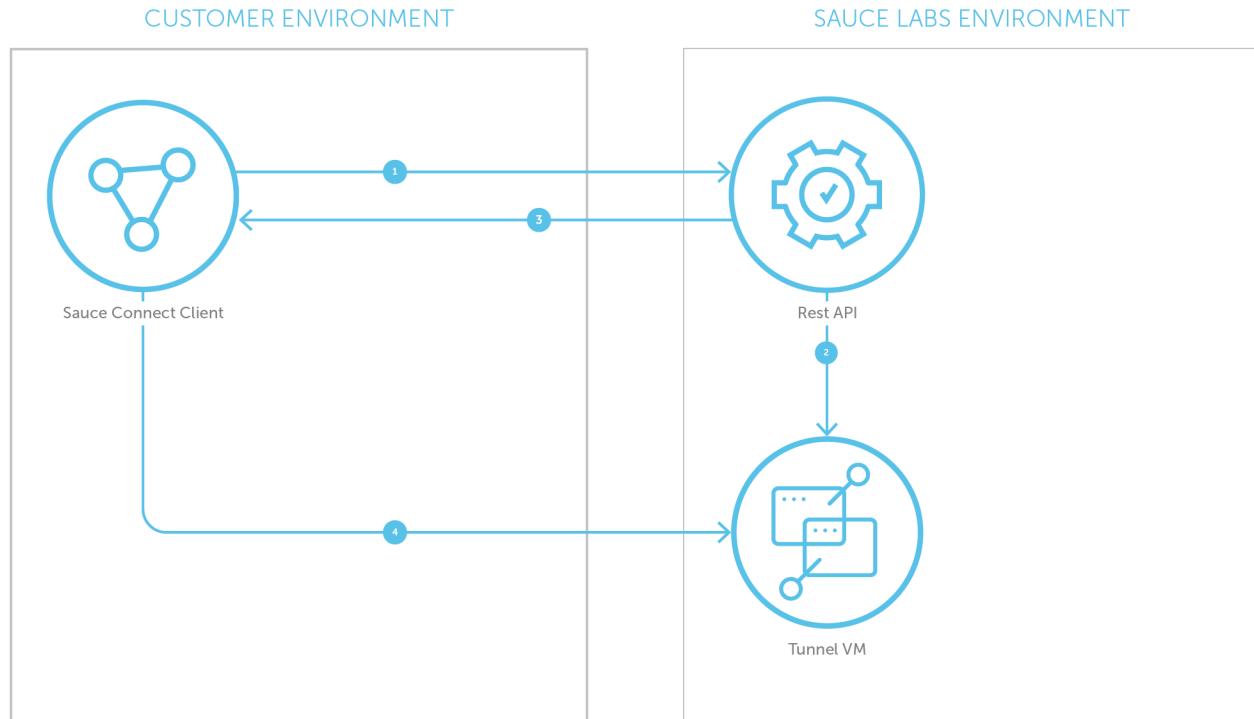
```
> sc_download\bin\sc.exe -u %SAUCE_USERNAME% -k %SAUCE_ACCESS_KEY% -x %SAUCE_DC% -i sc-proxy-tunnel
```

- Ensure that your network configuration allows for communication between the SC Host, the Tunnel VM, and the SUT (site under test). See the above [basic network configuration diagram](#) for further explanation.
- Select an example from [Sauce Labs Demonstration Scripts](#), and follow the instructions to configure the test in your dev environment.
- Navigate to the desired test script and add the following [Test Configuration Option](#) in the `sauce:options` capability.

Sauce Connect Proxy Tunnel Startup Process

Every Sauce Connect tunnel spins up a fresh virtual machine (VM) that is used only for your tests; VMs are destroyed once the tunnel is closed. A recommended Sauce Connect best practice is to create a new tunnel for each test suite or build and tear it down at the end of your test.

DIAGRAM: Sauce Connect Proxy Tunnel Startup



STEP 1: Sauce Connect Client calls REST API to start a tunnel.

STEP 2: REST API initiates a request to system to create a new Tunnel VM.

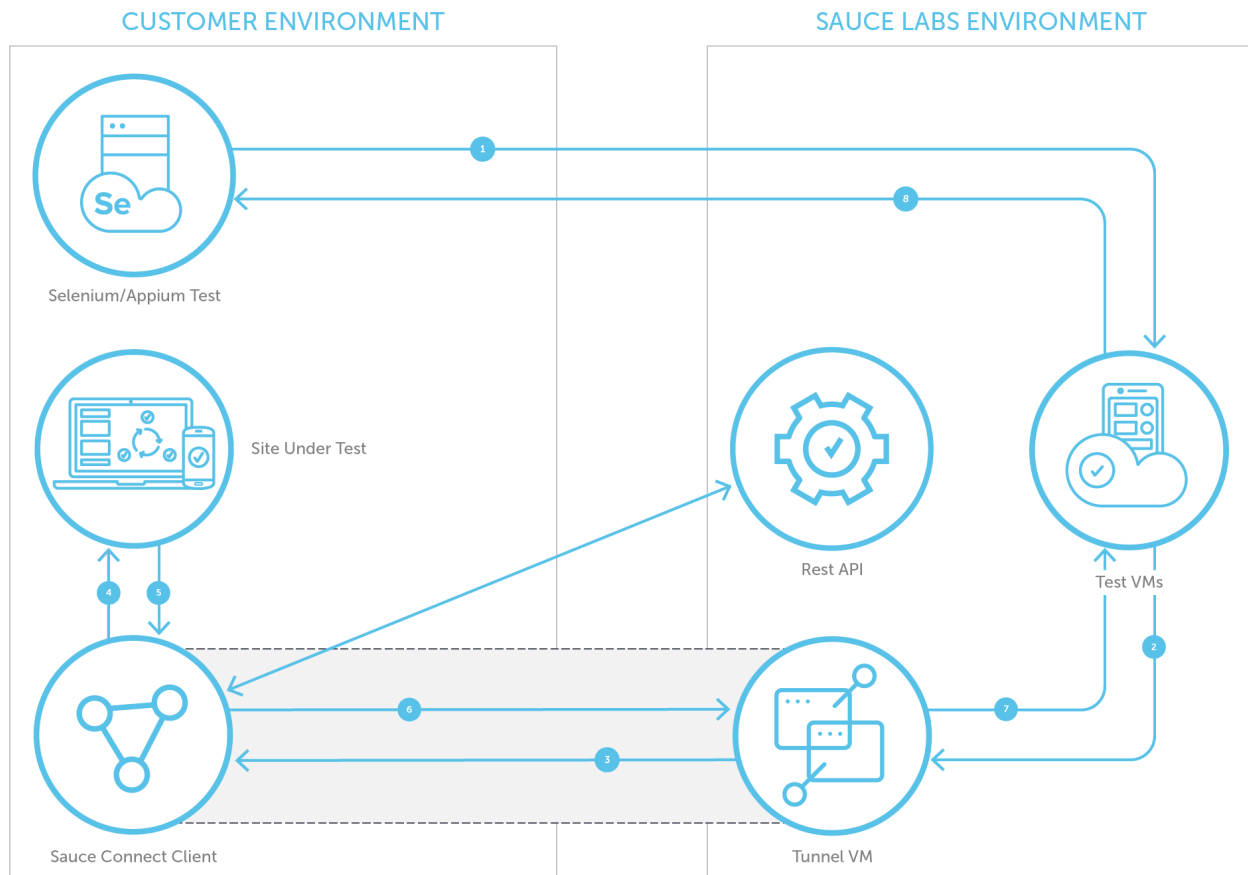
STEP 3: REST API tells the Sauce Connect Client DNS name of the Tunnel VM.

STEP 4: Sauce Connect Client makes connection request to Tunnel VM using its DNS name.

At this point, the tunnel is established between the Sauce Connect Client and the Tunnel VM.

Sauce Connect Communication When Test is Running

DIAGRAM: Network Traffic Flow When a Test is Run Through a Sauce Connect Tunnel



STEP 1: Selenium/Appium test code sends an HTTPS request to the VM or Real Device that was created for this test (for example, `GET www.saucedemo.com`).

STEP 2: Test VM or Device sends this request to Tunnel VM in order to access SUT.

STEP 3: Tunnel VM forwards this request to Sauce Connect client via the secure tunnel.

STEP 4: Sauce Connect Client forwards the request to Site Under Test (SUT).

STEP 5: Site Under Test returns response to Sauce Connect Client.

STEP 6: Sauce Connect client sends response to Tunnel VM via secure tunnel.

STEP 7: Tunnel VM sends response to Test VM.

STEP 8: Test VM sends results back to Selenium/Appium Test cloud.

Throughout the lifetime of a tunnel, Sauce Connect Client sends status information to Sauce Labs REST API.

More Information

Now that you're up and running with a Basic Sauce Connect Proxy Setup, we recommend reviewing the following topics:

- [Set up monitoring for your Sauce Connect Proxy tunnels](#)
- [Set up an additional proxy for testing](#)
- [Set up High Availability Sauce Connect Proxy tunnels](#)