High Availability Sauce Connect Proxy Setup

With the High Availability Sauce Connect Proxy setup, you can run multiple tunnels individually or collectively as a tunnel pool (multiple tunnels with the same tunnel identifier). From an end user or test runner perspective, a pool functions the same as a single Sauce Connect instance. This allows for load balancing and redundancy; should one tunnel shut down or disconnect, a newly started test will be reassigned to an active tunnel.

In addition, tunnel pools are ideal for running 200 or more parallel tests (high concurrency) because tunnel capacity is limited by a single TCP Connection.

**NOTE:** If you've already started running a test, and a Sauce Connect tunnel instance on your side or tunnel VM instance on the Sauce Labs side goes down, then those tests will be impacted. Any tests started after the tunnel went down would be routed through another tunnel.

See the following sections for more information:
What You'll Need

Before getting started with the High Availability setup, our recommendation is to first try the Basic Sauce Connect Proxy Setup to confirm that your system and network architecture is compatible with Sauce Connect.
Basic Sauce Connect Setup Leveraging High Availability

The below diagram shows the Basic Sauce Connect setup leveraging High Availability. On the Sauce Labs side, there are three major components: Sauce Test VM, Sauce Connect Tunnel VM, and Tunnel Pool. The logic flow is:

1. Test framework makes a request for a new Sauce Test VM, which specifies the tunnel ID of the pool (or uses an unnamed, "default" pool).
2. A service in Sauce Labs chooses a tunnel from the existing pool at random.
3. The resulting tunnel from step #2 is assigned to the new test VM.

**DIAGRAM: Basic Sauce Connect Setup Leveraging High Availability**
Multiple Network Routes

In this diagram, we see a setup that allows for multiple network routes when reaching the site(s) under test. There are variations to this, of course. For example, some of the Sauce Connect instances could be in the same network infrastructure as the site(s) under test. You can also imagine leveraging different virtual routes inside the same physical network. What is gained by setting up tunnels in this manner is redundancy for Sauce Connect tests, should one network route fail.

**DIAGRAM: Multiple Network Routes to Site Under Test (SUT)**
Using Multiple Machines for Failover Functionality

If you're configuring your Sauce Connect Proxy High Availability Setup with multiple tunnels to provide failover functionality, we recommend setting up each tunnel to run on a separate machine. This way, if a port availability issue or machine failure arises, you will still have active tunnels.

If you're using the same machine for multiple tunnels, you should start Sauce Connect Proxy with unique ports for the Selenium listener and scproxy, and file for the log and pid.
Rolling Restarts

In High Availability mode, it is best practice to restart Sauce Connect tunnels every 24 hours. The tunnel will stay open until all tests associated with it have completed. At the same time, once the shutdown command has been sent, the tunnel is marked inactive in the eyes of the pool, and no new jobs will use it.

- For Windows users: see Running Sauce Connect Proxy as a Microsoft Windows Service
- For Linux users: see Monitoring Sauce Connect Proxy with Service Management Tools
High Availability Command-Line Examples

To set up Sauce Connect with High Availability, Sauce Connect can be started from the command line with these commands below. You must run this command on each machine where you want to have access to the tunnel pool. For the full list of commands, see Sauce Connect Proxy Command-Line Quick Reference Guide.

On Linux or Mac OSX you would use the following

$ ./sc -u $SAUCE_USERNAME -k $SAUCE_ACCESS_KEY --tunnel-identifier myTunnel --no-remove-colliding-tunnels

On windows you would use the following

> sc.exe -u %SAUCE_USERNAME% -k %SAUCE_ACCESS_KEY% --tunnel-identifier myTunnel --no-remove-colliding-tunnels
### High Availability Tunnel Settings

<table>
<thead>
<tr>
<th>Command</th>
<th>What It Does</th>
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<tbody>
<tr>
<td><strong>--no-remove-colliding-tunnels</strong></td>
<td>Prevents the removal of identified tunnels with the same name and any default tunnels, if you’re using them. Jobs will be distributed across these tunnels, enabling load balancing and High Availability.</td>
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<td></td>
<td>What happens if you don’t use this command? By default, colliding tunnels (i.e., tunnels with the same identifier) would be removed when Sauce Connect is starting up. If you start another tunnel with the same identifier as an existing pool without adding <strong>--no-remove-colliding-tunnels</strong>, the new tunnel would be established, but all tunnels in the pre-existing pool would be closed.</td>
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More Information

Monitoring Pooled Tunnels in High Availability Mode