SSH Configuration Lab on Cisco 1841 Routers (Packet Tracer)

This document explains step-by-step what I did in my Packet Tracer SSH lab, including the commands I entered, where I made mistakes, and how the configuration should work. It is based on my screenshots and command logs.

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1. Lab Topology

- **Devices**: Two Cisco 1841 routers (Router0 and Router1)
- **Connection**: Crossover cable between `fa0/0` interfaces

[Router0: JBC1] ---- fa0/0 <-> fa0/0 ---- [Router1: JBC2]

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2. Initial Setup

Router0 (JBC1)

```
Router>en
Router#conf t
Router(config)#hostname JBC1
JBC1(config)#int fa0/0
JBC1(config-if)#ip address 192.168.1.1 255.255.255.0
JBC1(config-if)#no shutdown
```

Router1 (JBC2)

```
Router>en
Router#conf t
Router(config)#hostname JBC2
JBC2(config)#int fa0/0
JBC2(config-if)#ip address 192.168.1.2 255.255.255.0
JBC2(config-if)#no shutdown
```

✅ At this point, both routers had green link lights.

❌ I initially tried `ping 192.169.1.1` instead of `192.168.1.1` — typo in the third octet caused the test to fail.

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3. SSH Prerequisites

SSH on Cisco devices requires:

1. **Hostname**
2. **Domain name**
3. **RSA key generation**

Router0 (JBC1)

JBC1(config)#ip domain-name jbc.net
JBC1(config)#crypto key generate rsa
How many bits in the modulus [512]: 2048

Router1 (JBC2)

JBC2(config)#ip domain-name jbc.net
JBC2(config)#crypto key generate rsa
How many bits in the modulus [512]: 2048

✅ Both routers generated 2048-bit RSA keys successfully.

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4. VTY and SSH Settings (on JBC2)

JBC2(config)#line vty 0 15
*Mar 1 0:32:13.168: %SSH-5-ENABLED: SSH 1.99 has been enabled
JBC2(config-line)#transport input ssh
JBC2(config-line)#password jbc
JBC2(config-line)#login
JBC2(config-line)#exit

JBC2(config)#ip ssh authentication-retries 2
JBC2(config)#ip ssh time-out 120
JBC2(config)#ip ssh version 2

✅ At this point, Router1 was ready to accept SSH connections.

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5. Attempting SSH from JBC1

My Commands

JBC1#ssh -l john 192.168.1.2
Password:
% Password: timeout expired!

I retried multiple times but kept getting **"connection closed by foreign host"**.

Why It Failed

- I specified `-l john`, but Router2 (JBC2) did **not** have a local user `john` configured.
- JBC2 was only configured with a **VTY line password (`jbc`)**, not per-user accounts.
- IOS expected a matching local username when I used `-l john`, so authentication failed.

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6. Two Fix Options

Option 1: Use Line Password Only

If I don't care about usernames:

JBC1#ssh 192.168.1.2

Then enter the VTY password `jbc`.

Option 2: Configure a Local Username

If I want to log in as `john`:

JBC2(config)#username john secret mysecurepass
JBC2(config)#line vty 0 15
JBC2(config-line)#login local

Now I can connect:

JBC1#ssh -l john 192.168.1.2

Enter password `mysecurepass` → login successful.

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7. Key Takeaways

- ✅ Hostname, domain name, and RSA keys are required before SSH works.
- ✅ VTY lines must allow SSH (`transport input ssh`).
- ❌ Using `ssh -l <username>` requires that the username exist locally.
- ✅ If only a VTY password is configured, connect without `-l <username>`.
- 🔒 Best practice: Use `username <name> secret <password>` + `login local` for secure logins.

Final Notes

The lab worked up to the point of establishing SSH, but my mistake was trying to log in with a username (`john`) that didn't exist. This is why the session timed out. Adding a local user or adjusting my SSH command fixes the issue.