**Troubleshooting Report**

**Issue:** internal.example.com is unreachable — users receive "host not found" errors.

**1. Verify DNS Resolution**

**Checked :**

cat /etc/resolv.conf

Result:

* nameserver 127.0.0.53 → DNS is managed by systemd-resolved.

**Checked DNS lookup:**

nslookup internal.example.com

Result:

* Failure: Can't find internal.example.com: No answer

**Checked against external DNS (8.8.8.8):**

nslookup internal.example.com 8.8.8.8

Result:

* Failure: server can't find internal.example.com: NXDOMAIN

**Conclusion:** Public DNS servers cannot resolve internal domains. System DNS configuration is incorrect or missing internal DNS settings.

**2. Diagnose Service Reachability**

Problem:

* DNS resolution fails, so the service cannot be tested by name.
* Once the private IP is identified, reachability can be verified using:

ping <server-ip>

curl http://<server-ip>

telnet <server-ip> 80

**3. Identify All Possible Causes**

|  |  |  |
| --- | --- | --- |
| **Layer** | **Potential Cause** | **Status** |
| DNS | Wrong upstream DNS server configured | Detected |
| DNS | Internal DNS server unreachable | Possible |
| Service | Web server down | Unknown (not yet tested) |
| Network | Firewall/security groups block access | Possible |
| Client | Missing manual /etc/hosts entry | Not applicable in this case |

**4. Propose and Apply Fixes**

**Issue: Wrong/missing internal DNS**

**Confirmation:**

resolvectl status

Check if the correct internal DNS (172.31.0.2 for AWS) is set.

**Temporary Fix:**

sudo resolvectl dns eth0 172.31.0.2

**Permanent Fix:** Edit /etc/systemd/resolved.conf:

[Resolve]

DNS=172.31.0.2

FallbackDNS=8.8.8.8

Then restart systemd-resolved:

sudo systemctl restart systemd-resolved

**Bonus: Local /etc/hosts Bypass**

If the private IP of internal.example.com is known (172.31.17.100), manually add it to /etc/hosts:

sudo nano /etc/hosts

Add:

172.31.17.100 internal.example.com

This allows immediate resolution without relying on DNS.

**Final Testing:**

* Test DNS resolution:

nslookup internal.example.com

* Test web service:

curl http://internal.example.com

**Final Result:**

* DNS resolution restored
* Service reachable
* Systems operational