### **DNS and Service Reachability Troubleshooting Report**

### **1. DNS Resolution Issue**

* **Problem:** DNS failed for internal.example.com.
* **Test:** nslookup returned "Non-existent domain."
* **Solution:** Added 192.168.1.22 internal.example.com to the hosts file.

**Outcome:** DNS resolution worked after modification.

### **2. Service Reachability**

* **Test:** ping confirmed the server was reachable (192.168.1.22).
* **Test:** curl returned "Hello! XAMPP is working."

**Outcome:** The web service was reachable after DNS was fixed.

### **3. Causes**

* **DNS Misconfiguration** – DNS server issues.
* **Hosts File Issue** – Incorrect or missing local entry.
* **Firewall/Network Restrictions** – Unlikely, service was reachable.
* **DNS Server Configuration** – Incorrect DNS server settings.

### **4. Solutions**

* **DNS Misconfiguration:** Fixed with hosts file.
* **Hosts File Issue:** Added entry for internal.example.com.
* **Firewall/Network Restrictions:** No action needed, service was reachable.
* **DNS Server Configuration:** Verified and set to correct DNS (8.8.8.8).

### **Bonus Task: Persistent DNS Fix**

* Added entry in hosts file for DNS bypass.
* **Permanent DNS Fix:** Set DNS to Google’s DNS (8.8.8.8).