

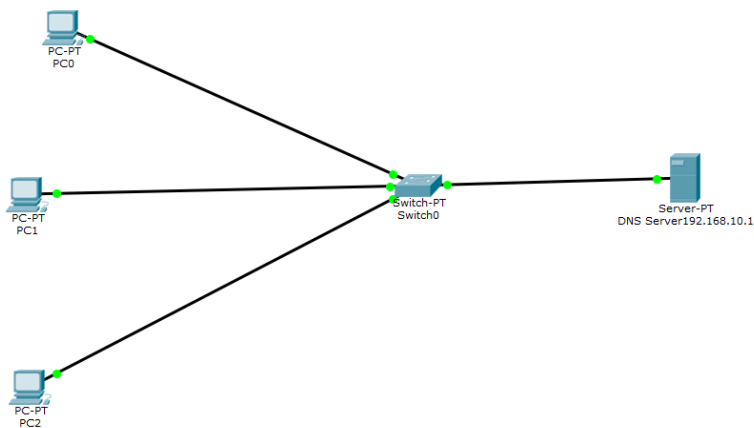
Computer Networks Lab

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DNS Server Configuration

Cisco Packet Tracer:

1. Topology:



2. Configure the server

DNS Server 192.168.10.1

Physical Config Services Desktop Custom Interface

SERVICES

- HTTP
- DHCP
- DHCPv6
- TFTP
- DNS
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP

DNS

DNS Service ☒ On ☐ Off

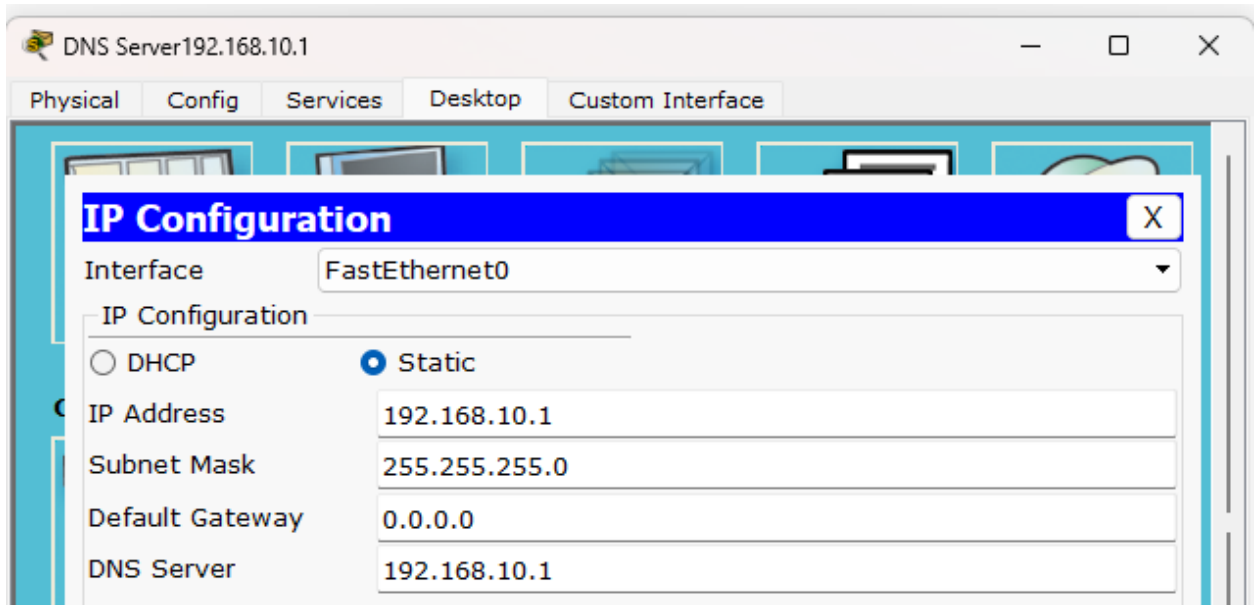
Resource Records

Name Type **A Record**

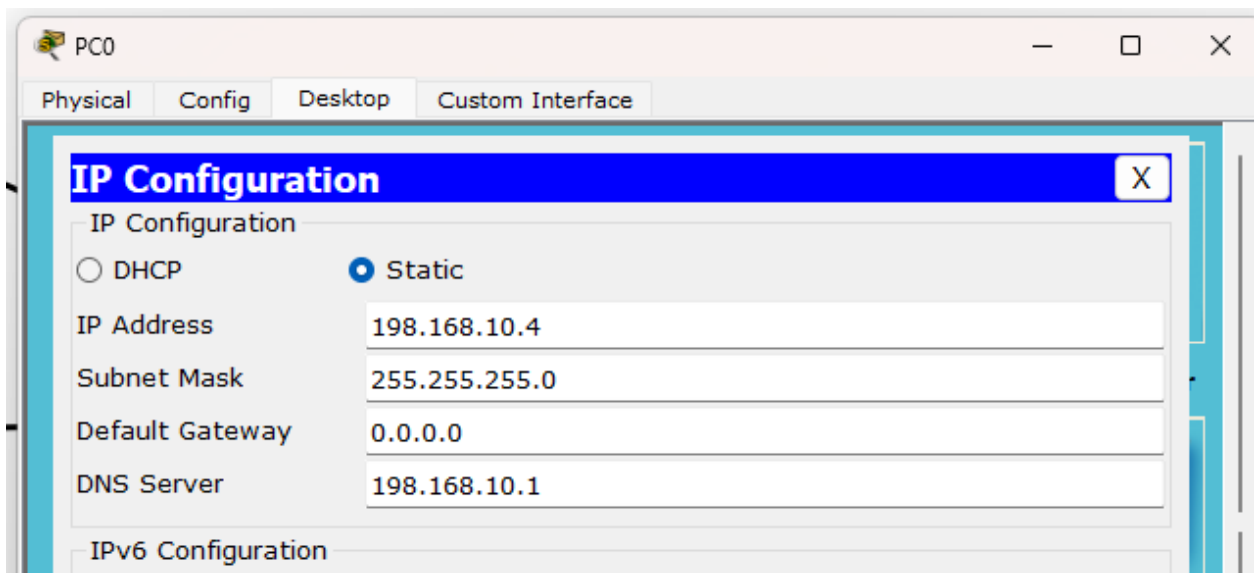
Address

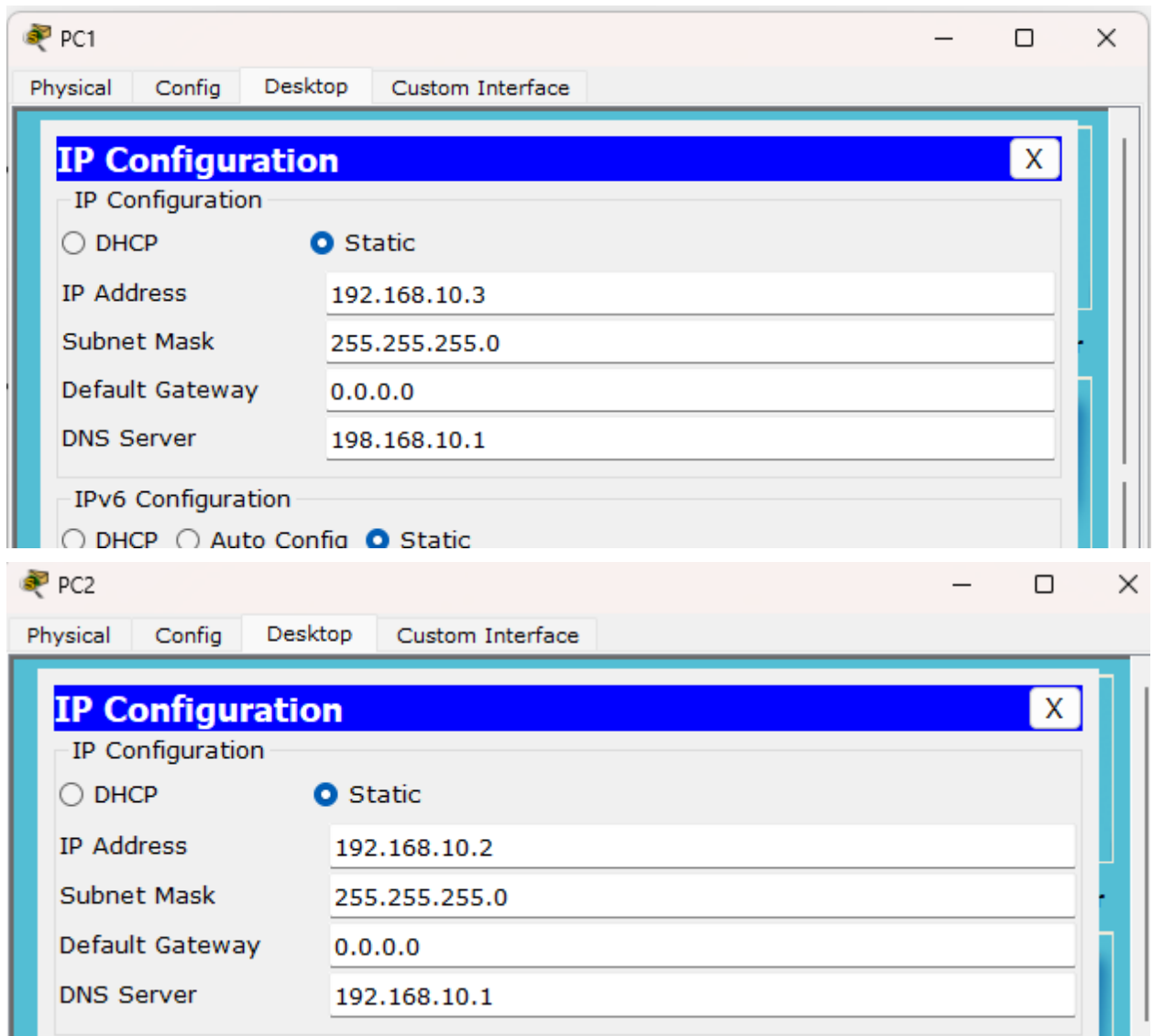
| No. | Name | Type | Detail |
|-----|------------------|----------|--------------|
| 0 | worldwideweb.com | A Record | 192.168.10.0 |

3. IP Config in Server:



4. Having Same DNS Address for all PCs





Now DNS has been configured.

DNS Configuration in Java:

Code:

Server.java

```
import java.io.*;

import java.net.*;

public class DNSServer {

    public static void main(String[] args) {

        int port = 9876;

        try (DatagramSocket socket = new DatagramSocket(port)) {

            System.out.println("DNS server started on port " + port);

            byte[] buffer = new byte[1024];

            while (true) {

                DatagramPacket request = new DatagramPacket(buffer,
buffer.length);

                socket.receive(request);

                String domainName = new String(request.getData(), 0,
request.getLength());

                System.out.println("Received request for domain: " +
domainName);
```

```
        InetAddress address = InetAddress.getByName(domainName);

        byte[] responseBytes = address.getHostAddress().getBytes();

        DatagramPacket response = new DatagramPacket(responseBytes,
responseBytes.length,

            request.getAddress(), request.getPort());

        socket.send(response);

        System.out.println("Sent IP address response: " +
address.getHostAddress());
    }

    } catch (IOException e) {

        e.printStackTrace();
    }

}

}
```

Client.java

```
import java.io.*;

import java.net.*;

public class DNSClient {

    public static void main(String[] args) {

        String serverIP = "localhost";

        int serverPort = 9876;

        try (DatagramSocket socket = new DatagramSocket()) {

            InetAddress serverAddress = InetAddress.getByName(serverIP);

            BufferedReader reader = new BufferedReader(new
InputStreamReader(System.in));

            System.out.print("Enter a domain name: ");

            String domainName = reader.readLine();

            byte[] requestBytes = domainName.getBytes();

            DatagramPacket request = new DatagramPacket(requestBytes,
requestBytes.length, serverAddress, serverPort);
```

```

        socket.send(request);

        byte[] responseBytes = new byte[1024];

        DatagramPacket response = new DatagramPacket(responseBytes,
responseBytes.length);

        socket.receive(response);

        String ipAddress = new String(response.getData(), 0,
response.getLength());

        System.out.println("IP address for domain " + domainName + ": "
+ ipAddress);

    } catch (IOException e) {

        e.printStackTrace();

    }

}

}

```

Output:

The image shows two side-by-side screenshots of Windows command prompts. The left window shows the execution of a DNS server, and the right window shows the execution of a DNS client.

```

C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.22621.1555]
(c) Microsoft Corporation. All rights reserved.

C:\Users\admin\Desktop\21MIS1146>java DNSServer.java
DNS server started on port 9876
Received request for domain: www.google.com
Sent IP address response: 142.250.183.228

```

```

C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.22621.1555]
(c) Microsoft Corporation. All rights reserved.

C:\Users\admin\Desktop\21MIS1146>java DNSClient.java
Enter a domain name: www.google.com
IP address for domain www.google.com: 142.250.183.228

C:\Users\admin\Desktop\21MIS1146>

```