

Use of Aakash in Classroom

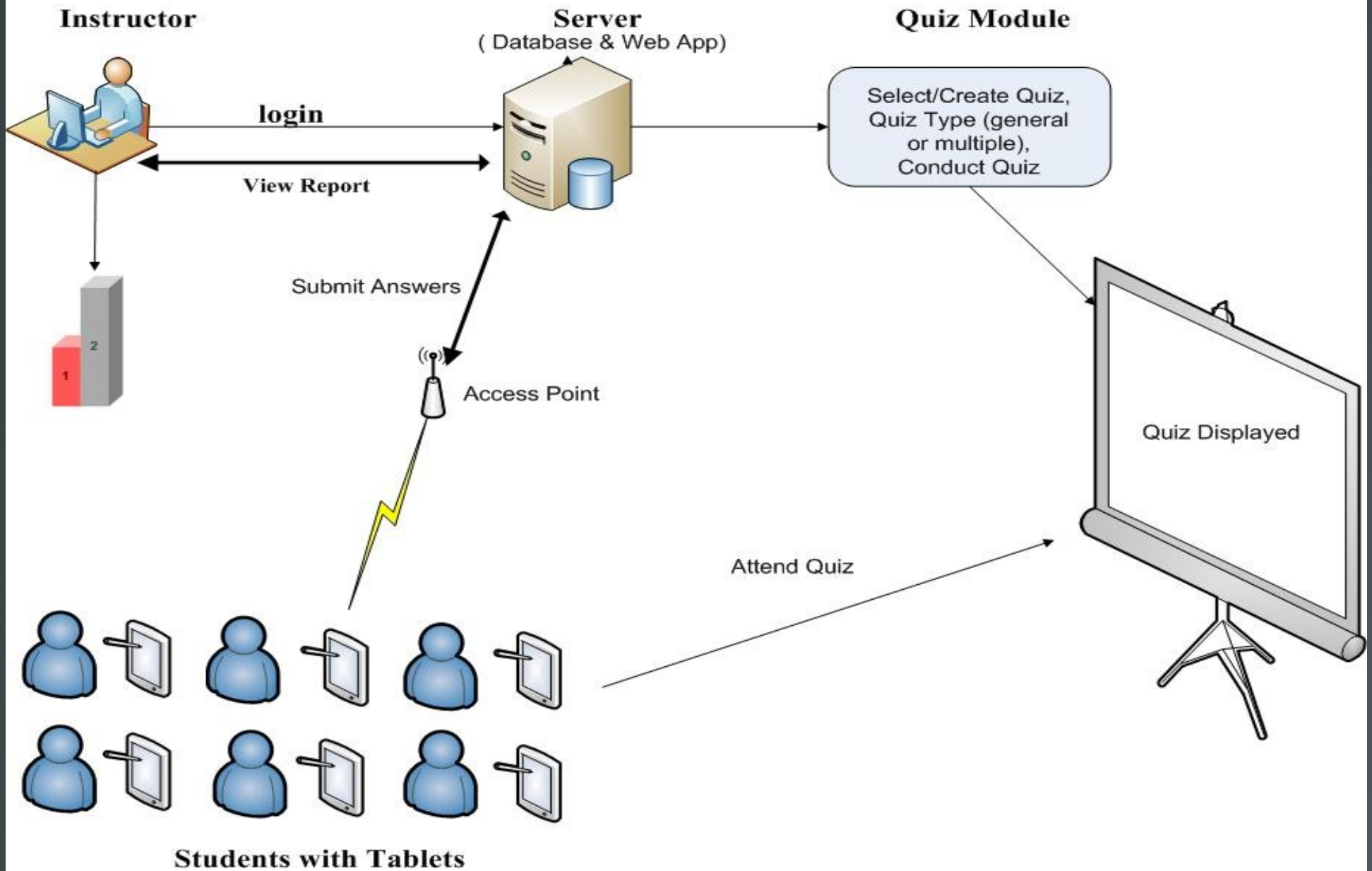
Rajesh Kushalkar

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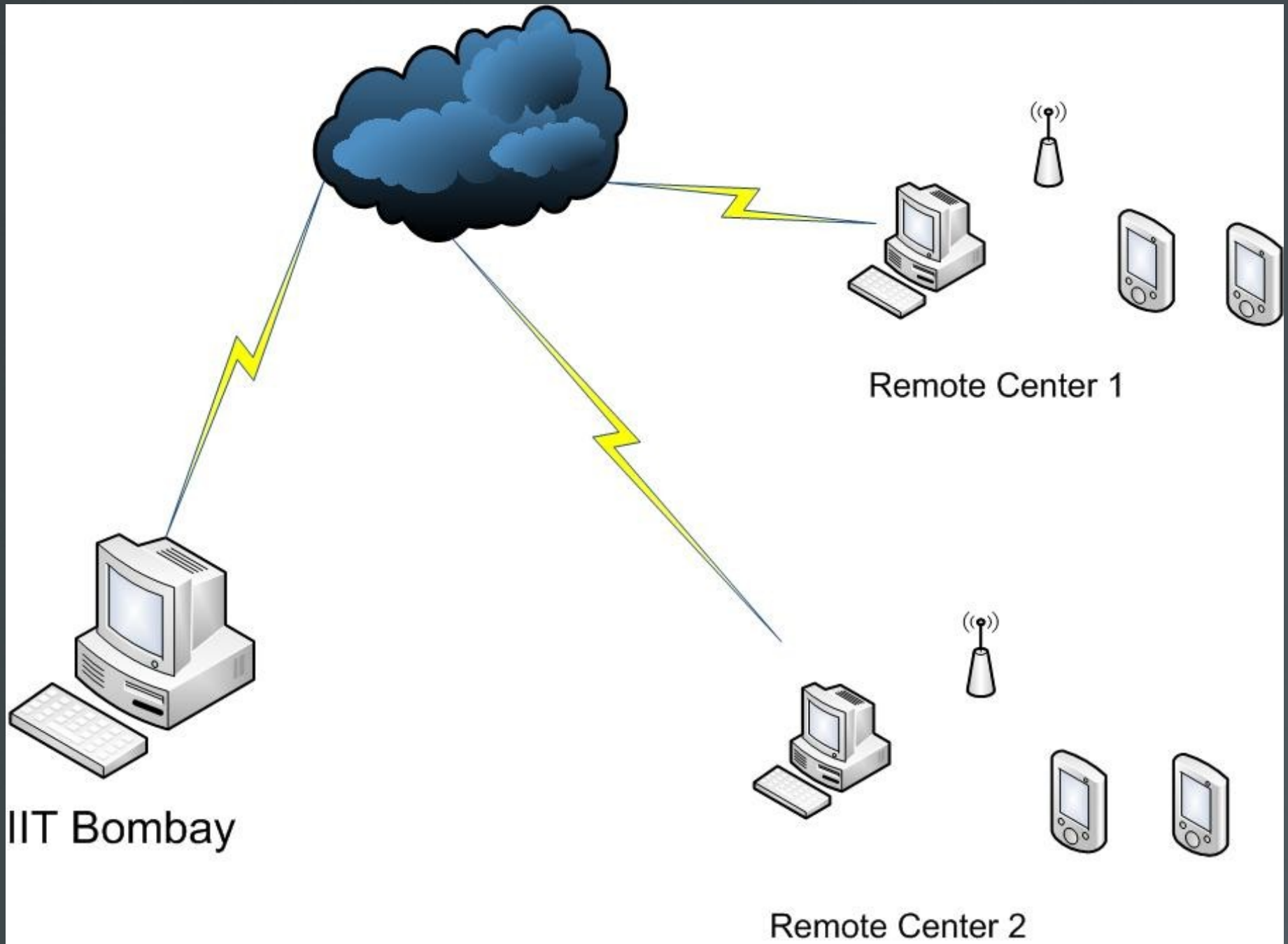
Department of Computer Science & Engineering

Indian Institute of Technology Bombay

Clicker Web-Based Software Architecture on Tablet



Remote Center Diagram

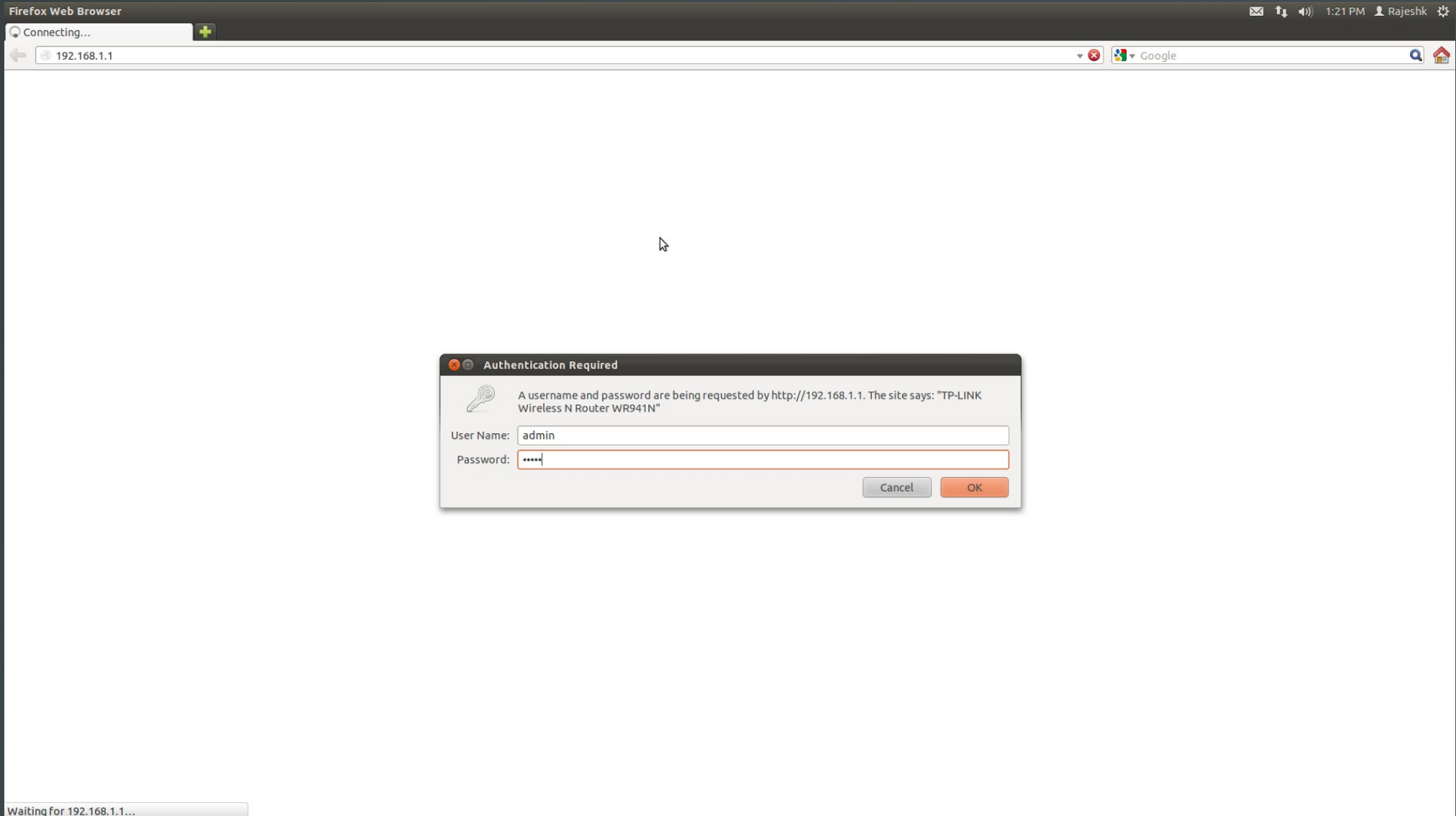


WiFi Setup

It is the general setup for TP-Link router, you can make similar setup for your wifi router



Default IP 192.168.1.1
user name : admin
password : admin



Network Status

TL-WR941N - Mozilla Firefox

1:22 PM Rajeshk

TL-WR941N

192.168.1.1

Google

TP-LINK®

300M Wireless N Router
Model No. TL-WR941ND

- Status
- Quick Setup
- QSS
- Network
- Wireless
- DHCP
- Forwarding
- Security
- Parental Control
- Access Control
- Advanced Routing
- Bandwidth Control
- IP & MAC Binding
- Dynamic DNS
- System Tools

Status

Firmware Version: 3.13.9 Build 120201 Rel.54965n
Hardware Version: WR941N v2N3 00000000

LAN

MAC Address: 64-70-02-CD-BD-70
IP Address: 192.168.1.1
Subnet Mask: 255.255.255.0

Wireless

Wireless Radio: Enable
Name (SSID): tprobo
Channel: Auto (Current channel 1)
Mode: 11bgn mixed
Channel Width: Automatic
Max Tx Rate: 300Mbps
MAC Address: 64-70-02-CD-BD-70
WDS Status: Disable

WAN

MAC Address: 64-70-02-CD-BD-71
IP Address: 0.0.0.0 Dynamic IP
Subnet Mask: 0.0.0.0
Default Gateway: 0.0.0.0 **WAN port is unplugged!**
DNS Server: 0.0.0.0, 0.0.0.0

Traffic Statistics

	Received	Sent
Bytes:	0	0
Packets:	0	0

Status Help

The Status page displays the Router's current status and configuration. All information is read-only.

LAN - The following parameters apply to the LAN port of the Router. You can configure them in the **Network -> LAN** page.

- **MAC Address** - The physical address of the Router, as seen from the LAN.
- **IP Address** - The LAN IP address of the Router.
- **Subnet Mask** - The subnet mask associated with LAN IP address.

Wireless - These are the current settings or information for Wireless. You can configure them in the **Wireless -> Wireless Settings** page.

- **Wireless Radio** - Indicates whether the wireless radio feature of the Router is enabled or disabled.
- **Name(SSID)** - The SSID of the Router.
- **Channel** - The current wireless channel in use.
- **Mode** - The current wireless mode which the Router works on.
- **Channel Width** - The bandwidth of the wireless channel.
- **Max Tx Rate** - The maximum tx rate.
- **MAC Address** - The physical address of the Router, as seen from the WLAN.
- **WDS Status** - The status of WDS' connection, Init: WDS connection is down; Scan: Try to find the AP; Auth: Try to authenticate; ASSOC: Try to associate; Run: Associated successfully.

WAN - The following parameters apply to the WAN ports of the Router. You can configure them in the **Network -> WAN** page.

- **MAC Address** - The physical address of the WAN port, as seen from the Internet.
- **IP Address** - The current WAN (Internet) IP Address. This field will be blank or 0.0.0.0 if the IP Address is assigned dynamically and there is no connection to Internet.
- **Subnet Mask** - The subnet mask associated with the WAN IP Address.
- **Default Gateway** - The Gateway currently used by the Router is shown here. When you use **Dynamic IP** as the connection Internet type, the **Renew** button will be displayed here. Click the **Renew** button to obtain new IP parameters dynamically from the ISP. And if you have got an IP address **Release** button will be displayed here. Click the **Release** button to release the IP address the Router has obtained from the ISP.
- **DNS Server** - The DNS (Domain Name System) Server IP addresses currently used by the Router. Multiple DNS IP settings are common. Usually, the first available DNS Server is used.
- **Online Time** - The time that you online. When you use **PPPoE** as WAN connection type, the online time is displayed here. Click the **Connect** or **Disconnect** button to connect to or disconnect from Internet.

Secondary Connection - Besides PPPoE, if you use an extra connection type to connect to a local area network provided by ISP, then parameters of this secondary connection will be shown in this area.

Traffic Statistics - The Router's traffic statistics.

- **Sent (Bytes)** - Traffic that counted in bytes has been sent out from the WAN port.
- **Sent (Packets)** - Traffic that counted in packets has been sent out from WAN port.
- **Received (Bytes)** - Traffic that counted in bytes has been received from the WAN port.
- **Received (Packets)** - Traffic that counted in packets has been received from the WAN port.

System Up Time - The length of the time since the Router was last powered on or reset.

Click the **Refresh** button to get the latest status and settings of the Router.

WAN setup

TL-WR941N - Mozilla Firefox 1:22 PM Rajeshk

TL-WR941N 192.168.1.1 Google

TP-LINK® 300M Wireless N Router Model No. TL-WR941ND

WAN

WAN Connection Type: **Dynamic IP** Detect

IP Address: 0.0.0.0
Subnet Mask: 0.0.0.0
Default Gateway: 0.0.0.0

Renew Release **WAN port is unplugged!**

MTU Size (in bytes): (The default is 1500, do not change unless necessary.)

Use These DNS Servers

Primary DNS:
Secondary DNS: (Optional)

Host Name:

Get IP with Unicast DHCP (It is usually not required.)

Save

WAN Help

WAN Connection Type:

If your ISP is running a DHCP server, select the **Dynamic IP** option.

If your ISP provides a static or fixed IP Address, Subnet Mask, Gateway and DNS setting, select the **Static IP** option.

If your ISP provides a PPPoE connection, select **PPPoE/Russia PPPoE** option.

If your ISP provides BigPond Cable (or Heart Beat Signal) connection, please select **BigPond Cable** option.

If your ISP provides L2TP connection, please select **L2TP/Russia L2TP** option.

If your ISP provides PPTP connection, please select **PPTP/Russia PPTP** option.

If you don't know how to choose the appropriate connection type, click the **Detect** button to allow the Router to automatically search your Internet connection for servers and protocols. The connection type will be reported when an active Internet service is successfully detected by the Router. This report is for your reference only. To make sure the connection type your ISP provides, please refer to the ISP. The various types of Internet connections that the Router can detect are as follows:

- **PPPoE/Russia PPPoE** - Connections which use PPPoE that requires a user name and password.
- **Dynamic IP** - Connections which use dynamic IP address assignment.
- **Static IP** - Connections which use static IP address assignment.

IP Address - The IP address assigned by your ISP dynamically.

Subnet Mask - The subnet mask assigned by your ISP dynamically.

Default Gateway - The default gateway assigned dynamically by your ISP.

Click the **Renew** button to renew the IP parameters from your ISP.

Click the **Release** button to release the IP parameters from your ISP.

MTU Size(in bytes) - The normal MTU (Maximum Transmission Unit) value for most Ethernet networks is 1500 Bytes. For some ISPs you need to modify the MTU. But this is rarely required, and should not be done unless you are sure it is necessary for your ISP connection.

If your ISP gives you one or two DNS IP addresses, select **Use These DNS Servers** and enter the **Primary DNS** and **Secondary DNS** into the correct fields. Otherwise, the DNS servers will be assigned from ISP dynamically.

Primary DNS - Enter the DNS IP address in dotted-decimal notation provided by your ISP.

Secondary DNS - Enter another DNS IP address in dotted-decimal notation provided by your ISP.

Note: If you get Address not found error when you access a Web site, it is likely that your DNS servers are set up improperly. You should contact your ISP to get DNS server addresses.

Host Name - This option specifies the Host Name of the Router.

Get IP with Unicast DHCP - A few ISPs' DHCP servers do not support the broadcast applications. If you can't get the IP Address normally, you can choose Unicast. (You generally need not to check this option).

Click the **Save** button to save your settings.

LAN setting

TL-WR941N - Mozilla Firefox

TL-WR941N

192.168.1.1

Google

TP-LINK®

300M Wireless N Router
Model No. TL-WR941ND

LAN

MAC Address: 64-70-02-CD-BD-70

IP Address:

Subnet Mask:

LAN Help

You can configure the IP parameters of LAN on this page.

- **MAC Address** - The physical address of the LAN ports, as seen from the LAN. The value can not be changed.
- **IP Address** - Enter the IP address of your Router in dotted-decimal notation (factory default - 192.168.0.1).
- **Subnet Mask** - An address code that determines the size of the network. Usually it is 255.255.255.0 .

Note:

1. If you change the LAN IP address, you must use the new IP address to login to the Router.
2. If the new LAN IP address you set is not in the same subnet with the previous one, the IP Address pool in the DHCP server will be configured automatically, but the Virtual Server and DMZ Host will not take effect until they are re-configured

Click the **Save** button to save your settings.

Status

Quick Setup

QSS

Network

- WAN

- LAN

- MAC Clone

Wireless

DHCP

Forwarding

Security

Parental Control

Access Control

Advanced Routing

Bandwidth Control

IP & MAC Binding

Dynamic DNS

System Tools

WiFi Settings

TL-WR941N - Mozilla Firefox

TL-WR941N

192.168.1.1

TP-LINK®

300M Wireless N Router
Model No. TL-WR941ND

Status

Quick Setup

QSS

Network

Wireless

- Wireless Settings

- Wireless Security

- Wireless MAC Filtering

- Wireless Advanced

- Wireless Statistics

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Wireless Settings

Wireless Network Name: (Also called the SSID)

Region:

Warning: Ensure you select a correct country to conform local law. Incorrect settings may cause interference.

Channel:

Mode:

Channel Width:

Max Tx Rate:

Enable Wireless Router Radio

Enable SSID Broadcast

Enable WDS Bridging

Wireless Settings Help

Note: The operating distance or range of your wireless connection varies significantly based on the physical placement of the Router. For best results, place your Router.

- Near the center of the area in which your wireless stations will operate.
- In an elevated location such as a high shelf.
- Away from the potential sources of interference, such as PCs, microwaves, and cordless phones.
- With the Antenna in the upright position.
- Away from large metal surfaces.

Note: Failure to follow these guidelines can result in significant performance degradation or inability to wirelessly connect to the Router.

Wireless Network Name - Enter a value of up to 32 characters. The same Name (SSID) must be assigned to all wireless devices in your network.

Region - Select your region from the pull-down list. This field specifies the region where the wireless function of the Router can be used. It may be illegal to use the wireless function of the Router in a region other than one of those specified in this field. If your country or region is not listed, please contact your local government agency for assistance.

Channel - This field determines which operating frequency will be used. It is not necessary to change the wireless channel unless you notice interference problems with another nearby access point. If you select auto, then AP will choose the best channel automatically.

Mode - If all of the wireless devices connected with this wireless router can connect in the same transmission mode(eg. 802.11b), you can choose "Only" mode(eg. 11b only). If you have some devices that use a different transmission mode, choose the appropriate "Mixed" mode.

Channel Width - The bandwidth of the wireless channel.

Max Tx Rate - You can limit the maximum tx rate of the Router through this field.

Enable Wireless Router Radio - The wireless radio of the Router can be enabled or disabled to allow wireless stations access. If enabled, the wireless stations will be able to access the Router, otherwise, wireless stations will not be able to access the Router.

Enable SSID Broadcast - If you select the **Enable SSID Broadcast** checkbox, the wireless router will broadcast its name (SSID) on the air.

Enable WDS Bridging - You can select this to enable WDS Bridging, with this function, the Router can bridge two or more Wians. NOTE: If this checkbox is selected, you had better make sure the following settings are correct.

SSID(to be bridged) - The SSID of the AP your Router is going to connect to as a client. You can also use the survey function to select the SSID to join.

BSSID(to be bridged) - The BSSID of the AP your Router is going to connect to as a client. You can also use the survey function to select the BSSID to join.

Survey - Click this button, you can search the AP which runs in the current channel.

Key type - This option should be chosen according to the AP's security configuration. It is recommended that the security type is the same as your AP's security type

WEP Index - This option should be chosen if the key type is WEP(ASCII) or WEP(HEX). It indicates the index of the WEP key.

Auth Type - This option should be chosen if the key type is WEP(ASCII) or WEP(HEX). It indicates the authorization type of the Root AP.

Password - If the AP your Router is going to connect needs password, you need to fill the password in this blank.

WiFi Security

TL-WR941N - Mozilla Firefox 192.168.1.1 TP-LINK 300M Wireless N Router Model No. TL-WR941ND

Wireless Security

Disable Security

WEP

Type: Automatic

WEP Key Format: Hexadecimal

Key Selected	Key Type
Key 1: <input type="radio"/>	Disabled
Key 2: <input type="radio"/>	Disabled
Key 3: <input type="radio"/>	Disabled
Key 4: <input type="radio"/>	Disabled

WPA/WPA2 - Enterprise

Version: WPA2

Encryption: TKIP

Radius Server IP:

Radius Port: 1812 (1-65535, 0 stands for default port 1812)

Radius Password:

Group Key Update Period: 0 (in second, minimum is 30, 0 means no update)

WPA/WPA2 - Personal(Recommended)

Version: WPA2-PSK

Encryption: TKIP

PSK Password: YOUR-PASS

(You can enter ASCII characters between 8 and 63 or Hexadecimal characters between 8 and 64.)

Group Key Update Period: 0 Seconds (Keep it default if you are not sure, minimum is 30, 0 means no update)

We do not recommend using the TKIP encryption if the device operates in 802.11n mode due to the fact that TKIP is not supported by 802.11n specification.

Save

Wireless Security Help

You can select one of the following security options:

- **Disable Security** - The wireless security function can be enabled or disabled. If disabled, the wireless stations will be able to connect the Router without encryption. It is recommended strongly that you choose one of following options to enable security.
- **WEP** - Select 802.11 WEP security.
- **WPA/WPA2 - Personal** - Select WPA based on pre-shared passphrase.
- **WPA/WPA2 - Enterprise** - Select WPA based on Radius Server.

Each security option has its own settings as described follows,

WEP

Type - You can select one of following types,

- **Automatic** - Select **Shared Key** or **Open System** authentication type automatically based on the wireless station's capability and request.
- **Shared Key** - Select 802.11 Shared Key authentication.
- **Open System** - Select 802.11 Open System authentication.

WEP Key Format - You can select **ASCII** or **Hexadecimal** format. ASCII Format stands for any combination of keyboard characters in the specified length. Hexadecimal format stands for any combination of hexadecimal digits (0-9, a-f, A-F) in the specified length.

WEP Key settings - Select which of the four keys will be used and enter the matching WEP key information for your network in the selected key radio button. These values must be identical on all wireless stations in your network.

Key Type - You can select the WEP key length (**64-bit**, or **128-bit**, or **152-bit**) for encryption. "Disabled" means this WEP key entry is invalid.

- For **64-bit** encryption - You can enter 10 hexadecimal digits (any combination of 0-9, a-f, A-F, and null key is not permitted) or 5 ASCII characters.
- For **128-bit** encryption - You can enter 26 hexadecimal digits (any combination of 0-9, a-f, A-F, and null key is not permitted) or 13 ASCII characters.
- For **152-bit** encryption - You can enter 32 hexadecimal digits (any combination of 0-9, a-f, A-F, and null key is not permitted) or 16 ASCII characters.

Note: If you do not set the key, the wireless security function is still disabled even if you have selected Shared Key as Authentication Type.

WPA/WPA2 - Enterprise

Version - You can select one of following versions,

- **Automatic** - Select **WPA** or **WPA2** automatically based on the wireless station's capability and request.
- **WPA** - Wi-Fi Protected Access.
- **WPA2** - WPA version 2.

Encryption - You can select either **Automatic**, or **TKIP** or **AES**.

Radius Server IP - Enter the IP address of the Radius Server.

Radius Port - Enter the port that radius service used.

Radius Password - Enter the password for the Radius Server.

Group Key Update Period - Specify the group key update interval in seconds. The value can be either 0 or at least 30. Enter 0 to disable the update.

WPA/WPA2 - Personal

Version - You can select one of following versions,

WiFi Statistics



300M Wireless N Router
Model No. TL-WR941ND

- Status
- Quick Setup
- QSS
- Network
- Wireless**
- Wireless Settings
- Wireless Security
- Wireless MAC Filtering
- Wireless Advanced
- Wireless Statistics
- DHCP
- Forwarding
- Security
- Parental Control
- Access Control
- Advanced Routing
- Bandwidth Control
- IP & MAC Binding
- Dynamic DNS
- System Tools

Wireless Statistics

Current Connected Wireless Stations numbers: 1

ID	MAC Address	Current Status	Received Packets	Sent Packets
1	00-92-C3-C1-77-26	WPA2-PSK	38	12

Wireless Statistics Help

This page shows **MAC Address**, **Current Status**, **Received Packets** and **Sent Packets** for each connected wireless station.

- **MAC Address** - the connected wireless station's MAC address
- **Current Status** - the connected wireless station's running status, one of **STA-AUTH / STA-ASSOC / STA-JOINED / WPA / WPA-PSK / WPA2 / WPA2-PSK / AP-UP / AP-DOWN / Disconnected**
- **Received Packets** - packets received by the station
- **Sent Packets** - packets sent by the station

You cannot change any of the values on this page. To update this page and to show the current connected wireless stations, click on the **Refresh** button.

If the numbers of connected wireless stations go beyond one page, click the **Next** button to go to the next page and click the **Previous** button to return to the previous page.

Note: This page will be refreshed automatically every 5 seconds.

DHCP Settings

TL-WR941N - Mozilla Firefox

1:28 PM Rajeshk

TL-WR941N

192.168.1.1

Google

TP-LINK®

300M Wireless N Router
Model No. TL-WR941ND

Status

Quick Setup

QSS

Network

Wireless

DHCP

- DHCP Settings

- DHCP Clients List

- Address Reservation

Forwarding

Security

Parental Control

Access Control

Advanced Routing

Bandwidth Control

IP & MAC Binding

Dynamic DNS

System Tools

DHCP Settings

DHCP Server: Disable Enable

Start IP Address:

End IP Address:

Address Lease Time: minutes (1~2880 minutes, the default value is 120)

Default Gateway: (optional)

Default Domain: (optional)

Primary DNS: (optional)

Secondary DNS: (optional)

Save

DHCP Settings Help

The Router is set up by default as a DHCP (Dynamic Host Configuration Protocol) server, which provides the TCP/IP configuration for all the PCs that are connected to the Router in the LAN.

- **DHCP Server - Enable or Disable** the server. If you disable the Server, you must have another DHCP server within your network or else you must configure the IP address of the computer manually.
- **Start IP Address** - This field specifies the first address in the IP Address pool. 192.168.0.100 is the default start IP address.
- **End IP Address** - This field specifies the last address in the IP Address pool. 192.168.0.199 is the default end IP address.
- **Address Lease Time** - The **Address Lease Time** is the length of time a network user will be allowed to keep connecting to the Router with the current DHCP Address. Enter the amount of time, in minutes, that the DHCP address will be "leased". The time range is 1~2880 minutes. The default value is 120 minutes.
- **Default Gateway** - (Optional) Suggest to input the IP Address of the LAN port of the Router, default value is 192.168.0.1.
- **Default Domain** - (Optional) Input the domain name of your network.
- **Primary DNS** - (Optional) Input the DNS IP address provided by your ISP. Or consult your ISP.
- **Secondary DNS** - (Optional) You can input the IP Address of another DNS server if your ISP provides two DNS servers.

Note: To use the DHCP server function of the Router, you should configure all computers in the LAN as "Obtain an IP Address automatically" mode. This function will take effect until the Router reboots.

Click **Save** to save the changes.

DHCP Client List

Applications Places System Wed Oct 17, 4:27 PM

TL-WR941N - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Quiz TL-WR941N

192.168.2.1

300M Wireless N Router
Model No. TL-WR941N / TL-WR941ND

Status	Client Name	MAC Address	Assigned IP	Lease Time	
	85	android-d22217a119d635ec	00-92-C3-BF-88-1B	192.168.2.184	01:53:25
	86	android-ca67cb0a591ea121	00-64-64-96-9D-8D	192.168.2.185	01:40:58
	87	android-5fcc5607919544fe	00-92-C3-C0-ED-B8	192.168.2.186	01:41:00
	88	android-55d59c1ef5015ce8	00-92-C3-BD-A2-A5	192.168.2.187	01:40:58
	89	android-4bed85b1d5af4974	00-92-C3-C0-4F-C5	192.168.2.188	01:40:59
	90	android-d22217a119d635ec	00-92-C3-BF-8A-58	192.168.2.189	01:41:00
	91	android-4bed85b1d5af4974	00-92-C3-BD-F0-31	192.168.2.190	01:41:00
	92	android-d22217a119d635ec	00-92-C6-00-03-AB	192.168.2.191	01:41:02
	93	android-d22217a119d635ec	00-92-C3-C3-7A-9F	192.168.2.192	01:41:04
	94	android-47029dbb4bc38839	00-4A-D2-03-62-5F	192.168.2.193	01:41:04
	95	android-69098fe15733db3d	00-AA-34-46-FE-96	192.168.2.194	01:45:13
	96	android-55d59c1ef5015ce8	00-92-C3-BD-EC-45	192.168.2.195	01:41:17
	97	android-d22217a119d635ec	00-92-C3-C1-78-31	192.168.2.196	01:41:24
	98	android-d22217a119d635ec	00-92-C3-C0-52-DE	192.168.2.197	01:41:33
	99	android-4bed85b1d5af4974	00-92-C3-BD-EF-A3	192.168.2.198	01:41:40
	100	android-9ce9db13d5bc03c3	00-92-C3-C0-35-D1	192.168.2.199	01:42:17

DHCP Clients List Help

This page shows **Client Name**, **MAC Address**, **Assigned IP** and **Lease Time** of each DHCP Client connected to the Router.

- **Client Name** - The name of the DHCP client.
- **MAC Address** - The MAC address of the DHCP client.
- **Assigned IP** - The IP address that the Router has allocated to the DHCP client.
- **Lease Time** - The time of the DHCP client leased.

You cannot change any of the values on this page. To update this page and to show the current connected devices, click on the **Refresh** button.

[webapps - File Brows... TL-WR941N - Mozilla ... MySQL Query Browser... apache-tomcat-6.0.35... clicker@clicker-laptop...]