Smart Home Simulator — Build Guide 05

Configure the Router for the IoT Smart Home Simulator

TYPE	PHASE	EXAMPLE ROUTER	USE
Tabletop Simulator Panel	Router Configuration	TP-Link Archer AX55	IoT / Smart Home Training

FIRST:	After a full reset, update firmware before configuring SSIDs. Use the correct TP-Link regional support page, match the hardware version printed on the router label, use a wired connection when possible, and do not power off during the firmware upgrade.

GOAL OF THIS PHASE

Configure the simulator router after the physical router, patch panel, keystone jacks, and CAT cable tests are complete. This guide uses the TP-Link Archer AX55 as the example and creates only the wireless networks needed for the simulator: Smart Home Admin and IoT Devices. Guest Wi-Fi stays disabled for now.

- Start from a full factory reset so every class begins from a known state.
- Update firmware before SSID configuration or smart-device enrollment.
- Use a wired admin laptop for setup whenever possible.
- Record the firmware version, admin password storage location, SSIDs, and Wi-Fi passwords.

CONFIGURATION FLOW

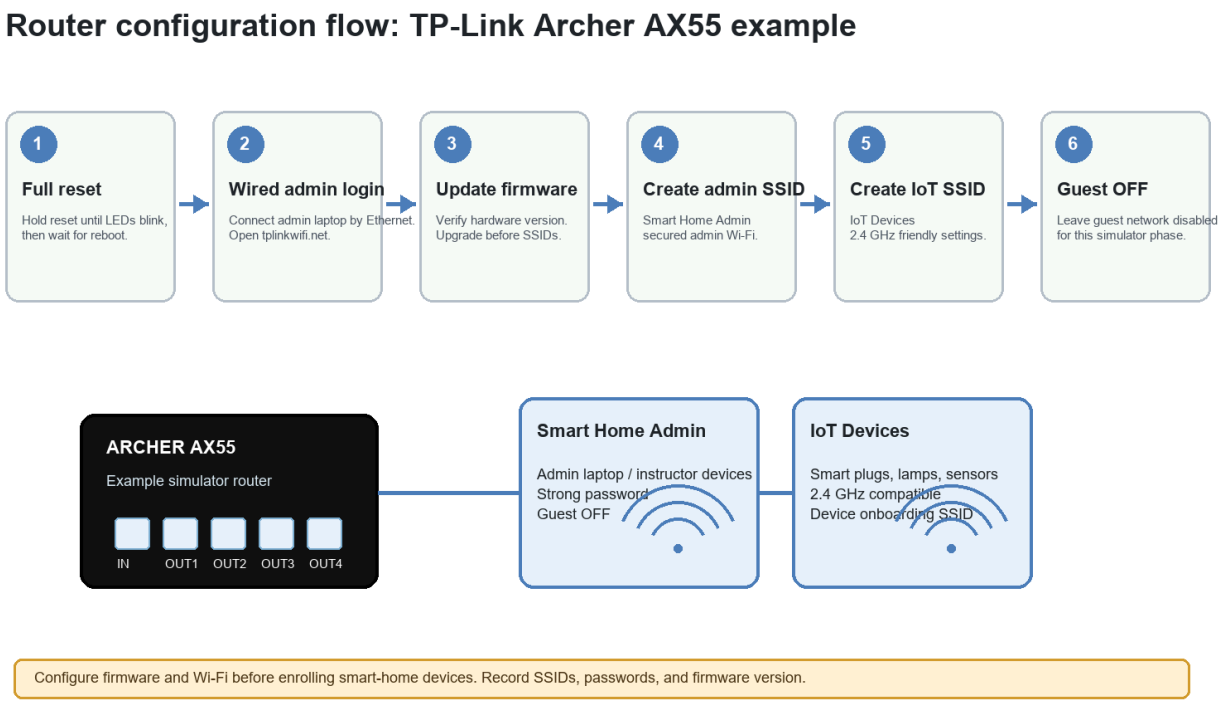

Fig 1 — Recommended router setup sequence for the simulator.

PREP AND FULL RESET

1	Connect for setup Connect the admin laptop to the router by Ethernet. Connect router power. If internet is needed for online firmware update, connect the router IN/WAN side to an internet source temporarily.
2	Perform full factory reset Hold the router Reset button until the LEDs blink or the router restarts. Wait for the router to fully reboot before logging in.
3	Open the web interface Open a browser to tplinkwifi.net. If that does not resolve, use the router IP shown by the admin laptop network settings, commonly 192.168.0.1 or 192.168.1.1.
4	Create router admin login Set a strong administrator password. Store it in the instructor-approved password location, not on the student-facing wall.

ALT LOGIN:	If the laptop cannot connect by wire first, connect to the router's default Wi-Fi, open a browser, and go to 192.168.0.1or 192.168.1.1. If the TP-Link admin page opens, log in using the default password printed on the router label/back of the router. After the first login, immediately change the router admin password and record the new password location in this guide.

UPDATE FIRMWARE BEFORE WI-FI SETUP

1	Find hardware version Check the router label for model and hardware version, such as Archer AX55 V1, V1.6, V4, or V4.6.
2	Use official TP-Link support Use the TP-Link support/download page for the correct country/region and exact hardware version. Wrong firmware can damage the router.
3	Run firmware upgrade In the web interface, go to the firmware update area, check online or upload the correct firmware file, and start the upgrade.
4	Wait without interruption Do not unplug power, close the update page, or move cables during upgrade. Wait for reboot and confirm the router is responsive again.

5 Record firmware version
Write the installed firmware version/date in the configuration worksheet before creating SSIDs.

SSID PLAN

Simulator SSID plan

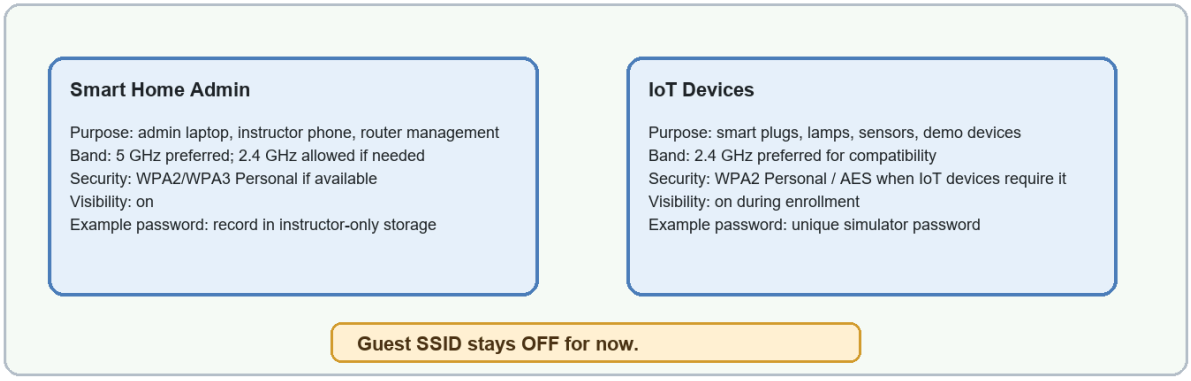

Fig 2 — Simulator wireless plan: Smart Home Admin and IoT Devices enabled; Guest Wi-Fi disabled.

NETWORK	SSID	PURPOSE	RECOMMENDED SETTINGS
Administration	IOT Smart Home - Admin	Admin laptop, instructor phone, router management	Strong password; WPA2/WPA3 if available; hide password from student-facing labels.
IOT Devices	IOT Smart Home - Devices	Alexa show, Tablet or phone for Alexa App, Smart plugs, lamps, sensors, and demo smart-home devices	2.4 GHz friendly; WPA2 Personal/AES when needed for compatibility.
Guest	OFF	Not used in this phase	Leave disabled until a later lab requires guest isolation.

CONFIGURE WIRELESS NETWORKS

1 Configure Smart Home Admin
In Wireless settings, set the admin SSID to Smart Home Admin. Use a strong password and security mode approved by the instructor. This network is for trusted admin devices.

2 Configure IoT Devices
Create or enable the IoT wireless network if the firmware provides one. Set SSID to IoT Devices. Prefer 2.4 GHz compatibility for smart plugs, lamps, and sensors.

3 **Use fallback if no IoT menu exists**
If this AX55 firmware does not show a separate IoT Network menu, use the normal 2.4 GHz wireless network for IoT Devices and reserve the other SSID/band for Smart Home Admin.

4 **Turn Guest Network off**
Open Guest Network settings and confirm guest SSID is disabled for both bands. Do not publish a guest SSID in this phase.

5 **Save and reboot if prompted**
Apply settings and let the router restart if required. Reconnect the admin laptop to Smart Home Admin only after the settings are saved.

CONFIRM DHCP SETTINGS

LATER LAB:	Access control lists, device isolation rules, firewall tuning, and router hardening are intentionally saved for a later security lab. For this phase, confirm basic DHCP and Wi-Fi operation only.

1 **Open LAN / DHCP settings**
In the router web interface, open the LAN or DHCP Server settings area. Menu names may vary by Archer AX55 firmware version.

2 **Confirm DHCP server is enabled**
The simulator router should hand out IP addresses automatically unless the instructor has provided a static-address lab plan.

3 **Record LAN IP and subnet**
Write down the router LAN IP, subnet mask, DHCP start address, DHCP end address, lease time, and DNS settings in the worksheet.

4 **Check DHCP range size**
Make sure the range has enough addresses for the admin device, IoT devices, and test devices used in the class.

5 **Verify client leases**
Connect devices. Confirm each receives an IP address, subnet mask, gateway, and DNS from the router.

TEST SIMULATOR WI-FI

TEST	DEVICE	EXPECTED RESULT	STATUS
Admin SSID visible	Admin laptop / phone	Smart Home Admin appears and accepts password.	[ ] Pass
IoT SSID visible	Smart device or phone	IoT Devices appears and accepts password.	[ ] Pass
Guest disabled	Admin laptop / phone	No guest SSID is visible.	[ ] Pass
DHCP admin lease	Admin laptop	Receives IP, gateway, and DNS from router DHCP.	[ ] Pass
DHCP IoT lease	IoT/test device	Receives IP, gateway, and DNS from router DHCP.	[ ] Pass
Patch-panel path	Laptop through keystone 7/8	Link light and network connectivity work through the patched path.	[ ] Pass
Router login	Admin laptop	Router admin page opens only from approved admin device/network.	[ ] Pass

CONFIGURATION WORKSHEET

FIELD	VALUE
Router model	
Hardware version	
Firmware version/date	
Admin password storage location	
Smart Home Admin password	
IoT Devices password	
Guest SSID status	
DHCP server status	
Router LAN IP	
Subnet mask	
DHCP range	
Lease time	
DNS settings	
ACL / hardening status	Deferred to later lab

Router management URL/IP	tplinkwifi.net / _____

NEXT PHASE — ADD SMART HOME DEVICES

READY FOR DEVICE ENROLLMENT Smart plugs Smart lamps / light sockets Sensors Controller app Device labels	DO NOT SKIP Firmware updated DHCP confirmed Guest SSID off Passwords recorded safely SSID tests passed Patch-panel path verified ACL/hardening deferred

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