Overview

What repeaters are and the different device roles available.

- What is a Meshtastic Repeater?
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What is a Meshtastic Repeater?

A Meshtastic repeater is a dedicated node whose purpose is to receive and retransmit messages, extending the reach of the mesh network beyond what any single device can achieve on its own.

In a Meshtastic network, every node participates in relaying messages to some degree - this is the nature of a mesh. But dedicated repeater nodes are optimized specifically for relaying: they run continuously and are placed at elevation for maximum coverage. Depending on the role chosen, an infrastructure node can either rebroadcast with higher priority (without deferring to neighbors) or be configured to stay silent on the mesh. Note that "repeater" is used here as a general concept: in practice these nodes use either the **ROUTER** role (which still broadcasts its own NodeInfo and position) or the **REPEATER** role (which relays silently without broadcasting its own data). These roles are covered in detail on the device-role pages.

Why repeaters matter

In real-world conditions, LoRa range is often limited by terrain, buildings, and vegetation. Range figures are highly variable and depend on preset, antenna, height, TX power, and obstructions. With stock antennas at Long Fast, urban non-line-of-sight range is often well under 1 km up to a few km; rural line-of-sight can be tens of km, and elevated sites with clear line-of-sight have achieved 100+ km. A repeater at elevation with a clear view can bridge gaps that would otherwise isolate parts of the network.

The Meshtastic relay model

Meshtastic uses a **managed flooding** approach: when a message is sent, nearby nodes rebroadcast it, and those nodes rebroadcast to others. A hop counter (default 3, maximum 7) limits how many times a message can be relayed before it is discarded. Dedicated repeaters - placed at strategic high points - maximize the effective reach of each hop.

Device Roles Explained

Meshtastic devices can be assigned one of several roles that control how they participate in the mesh. Choosing the right role for your repeater affects network behavior, power consumption, and visibility.

CLIENT (default)

The standard role for personal devices, and the role official Meshtastic guidance recommends for the overwhelming majority of ordinary nodes. A CLIENT node sends and receives messages via the app and participates in relaying (managed flooding): it rebroadcasts a packet only when no other node has already done so. If a CLIENT hears another node rebroadcast a packet first, it defers and will not rebroadcast it itself.

A CLIENT also ignores any packet (tracked by Packet ID) it has already received, so a given packet is never relayed twice by the same node. This managed-flooding behavior is what prevents broadcast storms.

Best for: personal devices carried by users, and most ordinary stationary nodes.

REPEATER

A dedicated relay node. **REPEATER is deprecated as of firmware ~2.7.x and is no longer recommended as the default for new infrastructure** (see "Which role should I choose?" below). Key behaviors:

- Rebroadcasts each valid packet once, with higher priority - it does not defer to other nodes the way a CLIENT does - subject to channel-activity detection (it still waits for the channel to be clear)
- **Does not appear in the node list** - it sends no NodeInfo, so it is anonymous on the mesh and keeps the network list clean
- Does not broadcast its own GPS or node info (saves network bandwidth)
- Does not force power-saving sleep (its radio stays active)
- Can be paired with the `ALL_SKIP_DECODING` rebroadcast mode for maximum efficiency (see below)

Note: `ALL_SKIP_DECODING` is a `device.rebroadcast_mode` value - a separate setting from the device role - that relays packets without decrypting them, so a REPEATER can forward traffic on channels

whose PSK it does not hold. Role and rebroadcast mode are independent settings; REPEATER is not "formerly ALL_SKIP_DECODING."

Best for: legacy deployments on older firmware where an anonymous, node-list-invisible relay is specifically wanted. For new infrastructure, prefer ROUTER.

ROUTER

The recommended role for stationary, well-placed community infrastructure nodes. A ROUTER is **visible in the node list** and originates its own NodeInfo (and GPS position if configured), which makes it trackable and useful for network monitoring. A ROUTER automatically enables power-saving sleep (this cannot be turned off) and defaults its app connectivity - BLE, Wi-Fi, and Serial - to OFF, so you don't normally text it directly even though it can still originate and receive messages at the protocol level. It is designed for stationary, well-placed nodes.

Best for: fixed community infrastructure and backbone relay nodes where you want visibility on the network and reliable rebroadcasting.

ROUTER_LATE

A relay role that rebroadcasts only after all other nodes have had a chance to do so - it is **not** a prioritized router. It defers to every other node and relays last, which reduces redundant transmissions in dense areas while still ensuring coverage in gaps. Use it for nodes that should rebroadcast only after others.

Best for: filling specific dead spots in a network that already has primary coverage, or as a deliberately low-priority backup relay.

Comparison table

Role	Visible in node list	Rebroadcast strategy	Prioritized routing	Sends own data	Power
CLIENT	Yes	Deferred (managed flooding)	No	Yes (if set)	Moderate
REPEATER (deprecated)	No	Once, higher priority, no deferral	Yes	No	High (LoRa active, no force-sleep)

Role	Visible in node list	Rebroadcast strategy	Prioritized routing	Sends own data	Power
ROUTER	Yes	Once, higher priority, no deferral	Yes	Yes	Force power-saving sleep; app radios off by default
ROUTER_LATE	Yes	After all other nodes	No (relays last)	Yes	High (LoRa always on)

Note: appearing on a public map such as meshmap.net is independent of role - it requires an MQTT uplink to the internet (a gateway), not a particular device role.

Which role should I choose?

- For most ordinary nodes, official Meshtastic guidance is to leave the role at **CLIENT**.
- Use **ROUTER** for fixed, well-placed community infrastructure that should rebroadcast reliably and appear on the network - this is the recommended choice for backbone nodes.
- **REPEATER** is deprecated as of firmware ~2.7.x and is no longer recommended as a default; reserve it for legacy firmware or the narrow case where you specifically want an anonymous, node-list-invisible relay.
- Use **ROUTER_LATE** for a backup node in an area that already has primary coverage, where you want it to relay only after every other node.