

Deployment Best Practices

Plan before you deploy

A poorly placed repeater can add network congestion without meaningfully extending coverage. Before deploying:

- Check the network map for existing nodes near your intended location
- Use coverage- and line-of-sight-planning tools (such as the Meshtastic Site Planner and HeyWhatsThat) to estimate coverage from candidate locations - see the network-map page for the full list of planning tools
- Walk or drive the coverage area with a personal node to measure real-world signal before committing to a permanent install

Avoid hop gobbling

Each relay uses one hop ("hop gobbling" means a relay that uses up a hop without adding meaningful range). If a repeater is only marginally better positioned than surrounding nodes, it will consume a hop without significantly extending message range. Place repeaters where they add substantial coverage - bridging a gap or reaching a new area - not just adding a small increment to existing coverage.

Spacing between repeaters

Overlapping coverage is good for resilience, but too many repeaters within range of each other creates redundant retransmissions that congest the network. A general guideline is to space repeaters so each covers a distinct area, with just enough overlap for redundancy.

Test after deployment

After installing, walk or drive the intended coverage area and verify that messages successfully reach destinations through the repeater. Test at the edges of expected coverage, not just close in.

Note that a quiet walk-test proves coverage, not capacity: for networks intended for emergencies, also validate behavior under realistic concurrent traffic (multiple users sending at once), and re-test coverage periodically, since foliage, new construction, and changing neighbor RF can all shift it over time.

Document your deployment

Record the hardware, firmware version, configuration, location coordinates, and power system details for each repeater you deploy. This makes firmware updates, troubleshooting, and handoff to other maintainers much easier. Consider contributing your repeater location to the community map.

Maintain firmware

Meshtastic releases updates regularly with performance improvements, bug fixes, and new features. Keep your repeater firmware updated using the web flasher at flasher.meshtastic.org.

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