

Central Point Mesh

(CPmesh)

A.R.E.D.N

Amateur Radio Emergency Data Network

In keeping with the purpose of the North Rogue Valley Repeater Group's mission of providing emergency communications during disasters or communication outages, we have begun building a data network to enhance our repeater network.

The plan for the emergency data network is to establish network nodes throughout the valley providing data communications to emergency groups and first responder organizations. Eight nodes are currently in operation covering northwest to Blackwell Hill, Roxy Ann and Central Point. Expansion plans will include Baldy into Ashland.

There are no dues or membership requirements except having an interest in Amateur radio and willingness to experiment. We may have meetings to discuss expansion plans and/or node placement.

If you want to join this project please contact KL7VK, Kirby at kwheeler@ccountry.com or 541-301-8832 (Cell) or W9PCI, Arlen at w9pci@w9pci.com or 541-941-4474.

Please read the following guidelines for getting involved in the project.

1. Members will provide equipment such as radios, antennas, cables, phones, cameras, mounting hardware, etc. Members must have some sort of back-up power source such as battery, solar or UPS.
2. We currently use Ubiquiti, MikroTik and GL-inet radios. More on these radios when we meet with you to detail the project.

Node “Dashboard Title” construction:

a. KL7VK-hAPacl-CP-15-307 (example only)

Call sign-type radio-Radio number if more-location-height above ground-direction pointed if directional or OMNI if vertical.

NOTE: AREDN OLSR protocol asks that the “Dashboard Title” be kept short as this information is propagated throughout the mesh network. “OLSR is a proactive link-state routing protocol, which uses hello and topology control (TC) messages to discover and then disseminate link state information throughout the mobile ad hoc network. Individual nodes use this topology information to compute next hop destinations for all nodes in the network using shortest hop forwarding paths.” Additionally, the add-on tunnel package (vtun) has a character limitation on the client node name which could prevent a tunnel from connecting. Keep node names as short as possible in order to avoid this issue; suggested max is 22 – 25 characters.

The “Notes” section in the “Dashboard” is a good place to provide a more detailed description of your node and clarify info such as location, intended link to other nodes, etc.

3. Firmware must be current on all nodes; however, some nodes will be selected to test new releases prior to updating all other network nodes. We understand that some legacy radios may not be supported with new releases of f/w. In these cases, the radios cannot be updated and should be retired from the network.
4. Node “Function/Purpose” must be declared and coordinated with the network administrator. For example, node is intended to serve as a “hub” or “spoke”. Hub nodes are generally placed to provide a backbone for the CPMesh network whereas “spokes” may include end of network user radios as well as provide “RF” paths to other nodes.
5. AREDN tunnels may be used to provide connections to nodes that have no “RF” path to the mesh network. In keeping with the intent of the AREDN mesh networks, tunnels may not be available during an emergency. This will break communications with nodes served only by tunnels.

6. Node passwords are important. Initially, all nodes with the exception of nodes that have access to a user's LAN will have a unique password assigned by the network administrator. It is recommended that each node user configure a managed device with VLAN to isolate AREDN network nodes from their personal LAN. Use of a HAPacl type device that permits WiFi connection may be an option for users to access the AREDN mesh network.
7. Broadcasted "Services" and node "IP reservations" are to be discussed with the network administrator to determine potential mesh network loading.

We will train how to load current AREDN firmware and maintenance of your node(s). The AREDN website has information on how to update your node radio and covers the most popular manufacturer's and models.

All nodes must be coordinated with the group prior to joining the network. "Network Manager(s)" will review all node types, verify setup configuration and manage access security.

A PBX is under construction to provide telephone service to some nodes. Those nodes will usually be at places such as homes, hospitals, police and fire departments, Mercy Flights, etc.