

Date: January 29, 2010

Subject: Packet Network Update

Attention: All ECs, AECs, MACs and other Santa Clara County Packet Users

This Packet Network Notice covers the following topics:

- Backbone status
- Traffic Optimization
- Outpost and PacForms
- Future Plans

Please read this information thoroughly and pass along to any packet users in your local area.

Backbone Status

The new backbone performed well during the County's quarterly drill held last Saturday, Jan. 23rd. System and traffic logs were captured and reviewed. The feedback received during the review on the Tuesday night net was positive. The Packet Committee met Wednesday, Jan. 27th to review all input. As a result:

The new backbone will remain in place. The old BBS will be decommissioned.

We have much more work to do and more phases to roll out, but the first phase of the roll-out was a great success.

Traffic Optimization – A “Eureka” Moment

A careful review of the traffic logs confirmed that user TNC configurations are in need of optimization. (“user” refers to anyone who accessing the BBS, including EOCs and individuals). Testing performed since the drill has confirmed that throughput can be dramatically increased and delay can be dramatically reduced if several adjustments are made to all user TNCs. In some cases, the improvement can be as high as 80%! One member of the team called the discovery a “Eureka” moment.

The adjustments can be grouped into two general categories. The first set of adjustments concern the way the TNC accesses the radio channel. There are several key parameters involved, and the radio channel works most efficiently if all TNCs use the same values for these parameters. The problem is that different manufacturers have different defaults. As a mixed system, the resulting interaction degrades performance on the channel for everyone.

The second set of adjustments concerns how Outpost interacts with the TNC when sending PacFORMS messages. With the current default settings, each PacFORMS message is sent as many small packets, rather than just a few larger packets. After some simple optimizations are applied, the number of packets sent can be dramatically reduced. By sending fewer packets AND by accessing the channel in a more optimized way, throughput can be increased and delay can be reduced by as much as 80%.

Jim Oberhofer is investigating the incorporation of these changes into a future version of Outpost. But in the short term, we will be distributing a document that explains how to make these settings on your TNC and in Outpost. The process is simple and takes just a few minutes. We anticipate distributing the instructions within a week.

Outpost and PacFORMS

In order for the packet network to function efficiently, it's important that all users (cities, agencies and individuals) use the proper applications. During the drill last Saturday, we discovered one agency which had not upgraded Outpost. We also had one agency which did not send ICS-213 messages with PacFORMS (they used the ICS213mm tool which is distributed with Outpost instead).

Everyone should be using at least Outpost version 2.3.0 c30. If you haven't upgraded yet, you need to upgrade to the latest version right away.

Also, everyone should be using the latest version of PacFORMS for all forms-type message traffic, including ICS-213, Logistics Requests, City Scan/Flash Reports, and other forms.

Future Plans

Several short term improvements have been scheduled for development within the next couple of months. These include: the use of aliases for distributing to multiple destinations, bulletins for persistent announcements, login verification, and continued study and review of busy conditions. Some of these improvements will involve changes to JNOS or Outpost or both. More information will be forthcoming as the work proceeds.

Work continues on the additional backbone nodes. The nodes themselves have been up and running for some time. But they are not currently located at their ultimate locations. We'll announce a schedule just as soon as we get better schedule information from the site owners.

Questions / Comments / Concerns

That's all for this update. If you have any questions, comments or concerns, it is likely that someone else does, too. So it would be helpful if you direct them to the scc-packet Yahoo group. That way, everyone can see the answer.

Michael - N6MEF

Santa Clara County ARES/RACES Packet Committee