Cashen Chikmoroff

ATW 1024 Summary and Observations

As can be seen in the graph, which depicts the different tests done with starting level and number of active stations varied for a network with 1024 stations total, the general trend is that as more stations are active, more probes are successful the higher (lower down the tree) the starting level is. The opposite is also true in that when there are less stations active starting higher up the tree (lower starting level number) success is higher.

A special line on the graph is the bonus algorithm line. This line used the "advanced algorithm" to probe the stations instead of the "basic" one like the other lines. Before comparing the bonus algorithms trend to the others it should be noted that the starting level is determined by the algorithm to always be optimal, as such there is only this one line to compare for any starting level input. When comparing the basic algorithm lines to this one it can be seen that the advanced algorithm outperforms them in every case. The only times when the basic algorithms come close in performance is when they are given the same optimal starting level as the advanced algorithm. However, due to the extra checks performed by the advanced algorithm it still outperforms even in these cases.

One last observation to note is that in some cases a line would go against its trend and either end in a peak or trough. This could possibly be occuring because given that lines starting level and the number of active stations, the way the active stations were laid out in the bus resulted in a drastic change of number of collisions due to some sort of resonation with the number of nodes in that starting level.

For the graph shown a logarithmic scale was not chosen. This is because displaying the labels exact values on the graph caused each line to have the same form as using a logarithmic x-axis, but this way the exact values are displayed. As such, each line can be more easily compared.