

## Abstract

The rapid development of technology pose a serious problem to the security system. Intrusion Detection System (IDS) is a system to detect attack on network computer system. Attacks that destructive network computer system was known as an anomaly. In this research will be discussed the anomaly detection on IDS using artificial neural network modified backpropagation algorithm with polak ribiere conjugate gradient. KDD Cup 1999 Dataset about IDS used to tes the performance of modified backpropagation. The result of the tests obtained from the modified backpropagation is performance of recall, precision, and f\_measure for each class. From the tests were obtained performance in Dos intrusion class is 71% for recall, 35.36% for precision, and 47.21% for f-measure. In Probe intrusion class is 47.89% for recall, 79.66% for precision, and 59.28% for f-measure. In R2l intrusion class is 33.74% for recall, 8.25% for precision, and 13.25% for f-measure. While performance in Normal class is 90.79% for recall, 97.18% for precision, and 93.88% for f-measure.

**Keywords:** Anomaly, Intrusion Detection System(IDS), Artificial Neural Network, Backpropagation, Polak Ribiere Conjugate Gradient.