Abstract

Intrusion Detection System (IDS) is a tools or application to monitor events that happened in computer system and give alert when a danger activity occurs. The process to recognize the danger activity is learning from the activity before. This process is called misuse Intrusion Detection System which use classification techique.

In this Final Project the author implements Random Forest (RF) and Classification and Regression Tree (CART) methods to build classification models that used in misuse IDS. The characteristics of KDD Cup 1999 dataset which used in this final project are unbalanced dataset, and there are many features in it. The excellences in that method are wiiling to give solutions of the problem in the dataset to improve the accuracy of intrusion detection.

Testing is done by evaluating confusion matrix and calculating the value of precion, recall and F Measure. The result showed that implementation of RF and CART could classify the minority classes in KDD Cup 1999 dataset with a little modification in RF method that is balancing the number of records of majority and minority classes. This modification named Balanced Random Forest (BRF). The accuracy is not quite high because of the limited number of records used in training phase after BRF was implemented. Limited number of records couldn't give detail characteristics of each class in the dataset.

Key word: C*lassification, Ranfom Forest, Classification and Regression Tree, KDD Cup 1999,Confusion matrix, Balanced Random Forest.*