

# Single-Linkage Clustering Approach for Kdd Dataset

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## Abstract

*This paper presents a type of clustering-based intrusion detection using single-linkage clustering algorithm. Basic methods for clustering include the Linkage based and K-means techniques. The K-means method generally produces a more accurate clustering than linkage based methods, but it has a greater time complexity and this becomes an extremely important factor in network intrusion detection due to very large dataset sizes. Intrusions pose a serious security risk in a network environment. Although systems can be hardened against many types of intrusions, often intrusions are successful making systems for detecting these intrusions critical to the security of these system. New intrusion types, of which detection systems are unaware, are the most difficult to detect. Single-linkage clustering-based intrusion detection method is able to detect many different types or intrusions, while maintaining a low false positive rate as verified over the KDD CUP 1999 dataset.*