This paper introduces a new approach of approximating the selectivity of multimedia range queries. Estimating the selectivity of a range query is a prerequisite to optimize a multimedia database query. We use the DBSCAN clustering technique for finding high density areas in the data set. Then, the selectivity is approximated with the help of a density function in combination with the volume of the query's hypersphere. Our approach is fast and accurate which was evaluated on an image data set using the MPEG-7 Scalable Color Descriptor. The technique is integrated with the help of the extensible optimizer architecture in the Oracle multimedia database system.