In the present work we study those compacti cations such that every autohomeomorphism of the base space can be continuously extended over the compacti cation. These are called H-compacti cations. We characterize them by several equivalent conditions and we prove that H-compacti cations of a given space form a complete upper semilattice which is a complete lattice when the given space is supposed to be locally compact. Next, we describe all H-compacti cations of discrete spaces as well as of countable locally compact spaces. It is shown that the only H-compacti cations of Euclidean spaces of dimension at least two are one-point compacti cation and the Cech-Stone compacti cation. Further we get that there are exactly 11 H-compacti cations of a countable sum of Euclidean spaces of dimension at least two and that there are exactly 26 H-compacti cations of a countable sum of real lines. These are all described and a Hasse diagram of a lattice they form is given.