Zinc is an essential nutrient for all organisms. Because of the nature of zinc, cells must use proteins that transport zinc to obtain zinc from their environment, as well as proteins that pump zinc into internal compartments in the cell. However, many zinc transporters and their function in intracellular compartments remain unknown. Baker's yeast, \textit{Saccharomyces cerevisiae}, is an excellent model system to identify and characterize zinc transporters and their function in cells. I characterized two zinc transporters in yeast that pump zinc into the endoplasmic reticulum (ER), an internal compartment responsible for folding proteins that will be secreted by cells. These zinc transport proteins, Msc2p and Zrg17p, are needed for the proper function of the ER. For example, cells with mutations in \textit{MSC2} or \textit{ZRG17} induce the unfolded protein response (UPR) in zinc deficient growth conditions. The UPR is a response by cells to deal with an accumulation of unfolded proteins in the ER. Also, ER-associated degradation of proteins was defective in zinc-limited \textit{msc2} mutant cells. Lastly, I obtained evidence that Msc2p and Zrg17p physically interact, a novel finding for two different zinc transporters. Therefore, these data suggest that Msc2p and Zrg17p form a complex to transport zinc into the ER to maintain protein folding and the proper function of this compartment in yeast. I found complementary results in mammalian cells and propose that the need for zinc in the ER and the formation of zinc transport complexes are more universal phenomena.