Bosonic Mixtures in one-dimensional optical lattices II ANZI HU, JQI, UMD, and NIST, Gaithersburg, LUDWIG MATHEY, NIST, Gaithersburg, and JQI, UMD, IPPEI DANSHITA, JQI, UMD, and Waseda University, Tokyo, CHARLES CLARK, NIST, Gaithersburg, and JQI, UMD, CARL WILLIAMS, JQI, UMD, and NIST, Gaithersburg — Using a Time-evolving Block Decimation (TEBD) approach, we study the quantum phases of bosonic mixtures in one dimension. With this numerical approach we determine how various phases appear for both finite and infinite systems. In particular, we relate the different phases of this system to the microscopic parameters of the underlying Bose-Hubbard model and calculate the correlation functions that characterize the phases in different parameter regions. Furthermore, for a finite system, we discuss the effects of a global trap on the state of the system.