While all of the basic primitives required for universal quantum computing (QC) have been demonstrated in trapped-ion qubits with high fidelity, it is currently not possible to simultaneously realize the highest achieved fidelities in a single ion species - typically two species are required. This is a serious impediment to the development of practical quantum computers. However, there is the possibility for achieving high-fidelity, full functionality in a single species: augmentation of an existing species with new functionality via novel encoding schemes in metastable states. This allows for user-selectable, ion-specific activation of the necessary functions on demand (e.g. storage, coupling to motion, cooling, and state preparation and measurement).