

Warpstor Rollback Feature Upgrade Statement of Work

Phase 1 – Ship date of September 1, 2018

1. Ease of upgrade – 200 hours[†]
 - Upgrade entire OS to Debian 9 **stretch**
 - Addition of iscsi package(s)
 - Create Methodics debian kernel package
 - add dependencies to warpstor package to pull in Methodics spec packages like kernel package
 - Conversion of root file system to btrfs
 - development of upgrade program facility
Since we want to add features via the upgrade mechanism which will affect the upgrade mechanism itself, we will need to have the ability to include a program/script with each upgrade which will be able to perform tasks such as reconfiguration or even re-imaging of the root file system (hard drive), creation of subvolumes, downloading of extraneous data from Methodics' such as default file system images and so forth.
 - testing and evaluation
 - Implementation of some kind of Methodics-homed **apt** repository and **apt** proxy service so upgrades would all go through Methodics servers. (Not part of 4 week estimate; possibly performed by other Methodics personages.)

Fixed estimate: \$20,000

Phase 2 – Ship date TBD

1. Upgrade rollback – 140 hours[†]
 - script development to manage subvolumes
 - design of overall subvolume/snapshot scheme and naming convention
 - creation of pre-upgrade snapshot
 - user CLI command to manage/implement the rollback process
 - script development of rootfs build script to boot subvolume
 - testing and evaluation
2. Factory reset – 120 hours[†]
 - script development of user CLI command to manage subvolumes and switch boot sequence to new subvolume
 - development of **grub** entry and corresponding *initrd* for boot time access to factory reset functionality
 - investigation of how to implement the factory reset capability with each upgrade, or only with each dist-upgrade, or with each major version increase in warpstor package
 - testing and evaluation

† All estimates are $\pm 25\%$ accuracy, as exact amount of work cannot be completely envisioned until actual engineering of the tasks ensues.