Stratis Coding Style Guidelines

Last modified: 02/27/2018

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Asking Questions and Making Changes to this Document

This document can be found in the stratis-docs repo, and is written using LyX 2.2.2. Please ask any questions by opening an issue, and propose changes as pull requests.

1 Introduction

A consistent style helps legibility and saves developers from needing to think about issues that are not really important.

For both Rust and Python, there are standard coding conventions, as well as tools that help keep code consistent with these conventions that we will try to use as much as possible. There are also some additional project-specific style guidelines, which we will document here to help developers new to the project.

2 Style (Rust)

1. rustfmt (link) defines spacing, brace placement, and other formatting, and should be followed (or automatically applied) for new Stratis code.
2. All new files must start with the 3-line license as a comment.
3. Ordering of "use" declarations

(a) "use" declarations within a module (such as a source file) should be grouped into up to four sections:

i. declarations from "std"

ii. declarations from other external dependencies except for devicemapper

iii. devicemapper dependencies

iv. declarations from other modules in the same crate

as needed, separated by blank lines. Ordering within blocks is alphabetical.

(b) When importing multiple items from a module, group these with "{}" on a single line. The items should be ordered alphabetically.

4. Use "expect()" instead of "unwrap()" to unwrap things that should always succeed. "unwrap()" is not allowed in new code.

   (a) Output from Linux kernel APIs is considered "super-stable" and should be "expect"ed instead of returning a parse error.

   (b) "expect()" text should say what "should never fail" condition was not met to trigger it.

5. When implementing a trait, the methods should be ordered as they are ordered in the trait definition.

6. TBD: Recommendations on when it's time to break up a single module (file) into submodules

7. TBD: Recommendations on when to define const variables versus when to use string literals

3 Style (Python)

1. Follow PEP 8 (link).

2. Minimum supported Python version is 3.4.

3. Use list comprehensions instead of for-loops when possible. In places where they can be used, comprehensions more clearly communicate the code's intent to filter and/or map a list into another list. Same goes for generator, dict, and set comprehensions.

4. Do not use boolean overloading in conditionals unless the type of the object is unknown. If the type of the object is known, use an explicit comparison such as "is None" or "== []". This way, if an object of an unexpected type arrives, the comparison will generate an error instead of a latent bug.

5. Use os.path methods when assembling or deconstructing paths. We are not concerned with cross-platform usage, so this is for clarity, to make it clear that it's a path, not a string.