

magnetic cassettes, magnetic tape, magnetic disk storage or other magnetic storage devices, or any other medium which may be used to store the desired information and which may be accessed by a computer.

[0195] “Communication media” typically embodies processor-readable instructions, data structures, program modules, or other data in a modulated data signal, such as carrier wave or other transport mechanism. Communication media also includes any information delivery media.

CONCLUSION

[0196] The techniques, described herein, may be implemented in many ways, including (but not limited to) program modules, general- and special-purpose computing systems, network servers and equipment, dedicated electronics and hardware, and as part of one or more computer networks. The techniques, described herein, may be implemented, for example, on a computer system depicted in FIG. 7. More particularly, these techniques may be implemented, for example, by an operating system on a computer system depicted in FIG. 7.

[0197] Although the one or more above-described implementations have been described in language specific to structural features and/or methodological steps, it is to be understood that other implementations may be practiced without the specific features or steps described. Rather, the specific features and steps are disclosed as preferred forms of one or more implementations.

1. A computing system comprising:

a processor configured to execute processor-executable instructions;

a memory coupled to the processor;

a storage sub-system coupled to the processor and configured to persist multiple self-describing software artifacts, the artifacts being representative of software components of the computing system.

2. A system as recited in claim 1, wherein each of the multiple self-describing software artifacts has an associated persisted manifest comprising declarative descriptions of the manifest’s software artifact.

3. A system as recited in claim 1, wherein each of the multiple self-describing software artifacts has an associated persisted manifest comprising primarily declarative descriptions of the manifest’s software artifact.

4. A system as recited in claim 1, wherein each of the multiple self-describing software artifacts has an associated persisted manifest comprising completely declarative descriptions of the manifest’s software artifact.

5. A system as recited in claim 1, wherein the software components of the computing system comprise operating system elements and applications.

6. A system as recited in claim 1, wherein the software components of the computing system comprise operating system elements and applications, the elements and applications being installed on the computing system and configured for execution on the processor.

7. A system as recited in claim 1, wherein a persisted system manifest comprises declarative descriptions of the multiple self-describing software artifacts.

8. A system as recited in claim 1 further comprising an artifact manager configured to manage the self-describing software artifacts.

9. A system as recited in claim 1 further comprising an artifact manager configured to update the self-describing software artifacts.

10. A system as recited in claim 1 further comprising an artifact manager configured to optimize use of self-describing software artifacts for generating a set of processor-executable instruction.

11. A system as recited in claim 1 further comprising an execution gateway configured to allow execution of only processor-executable instructions associated with a self-describing artifact only if conditions for allowed execution described by the associated self-describing artifact exist.

12. A system as recited in claim 1 further comprising an execution gateway configured to limit execution of functional components of the self-describing software artifacts when a manifest associated with the functional components of the self-describing software artifacts includes a conditional declarative description that the execution gateway determines is met.

13. A system as recited in claim 1 further comprising an execution gateway configured to audit a self-describing artifact to determine if the artifact differs from the artifact’s own self-description.

14. A system as recited in claim 1 further comprising a system verifier configured to perform acts comprising:

examining the self-describing artifacts to gather information about the artifacts;

performing a verification of the self-describing artifacts;

reporting results of the verification.

15. A system as recited in claim 1 further comprising an operating system configured to perform acts comprising facilitating creation of an instance of an application, wherein the source components of the application are derived from one or more of the self-describing artifacts.

16. A system as recited in claim 1 further comprising an optimization tool configured to perform acts comprising:

examining the self-describing artifacts to gather information about the artifacts;

optimizing the components of self-describing artifacts;

persisting the self-describing artifacts with optimized components.

17. A system as recited in claim 1 further comprising an error detection tool configured to perform acts comprising:

examining the self-describing artifacts to gather information about the artifacts;

analyzing the self-describing artifacts to detect potential errors;

reporting results of the analysis.

18. One or more processor-readable media having processor-executable instructions thereon that, when executed by a processor, performs acts comprising:

facilitating persistence of multiple software artifacts on a computing system, the artifacts being representative of functional operating system components or functional applications, such components and applications being installed on the computing system;