



Title: *Software Re-use Through Re-hosting*
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Abstract - A major issue facing the Department of Defense today is the time and cost associated with fielding new or upgraded systems to the war fighter. Although this is not a new problem, it is a problem that is greatly exacerbated by the fiscal crisis our country is in and it comes at a time when global unrest seems endless. The decision made by DoD to move toward commercial solutions, following open software development practices and separating tactical software solutions from the platform it performs on (via software middleware), will certainly be a great help in this regard. However, the time and cost of software development and retest for the implementation of new requirements, remains a significant hurdle to fielding systems rapidly and cost effectively. SimVentions, Inc., a small business located in Fredericksburg Virginia, has addressed this issue and is offering at least a partial solution to this challenge.

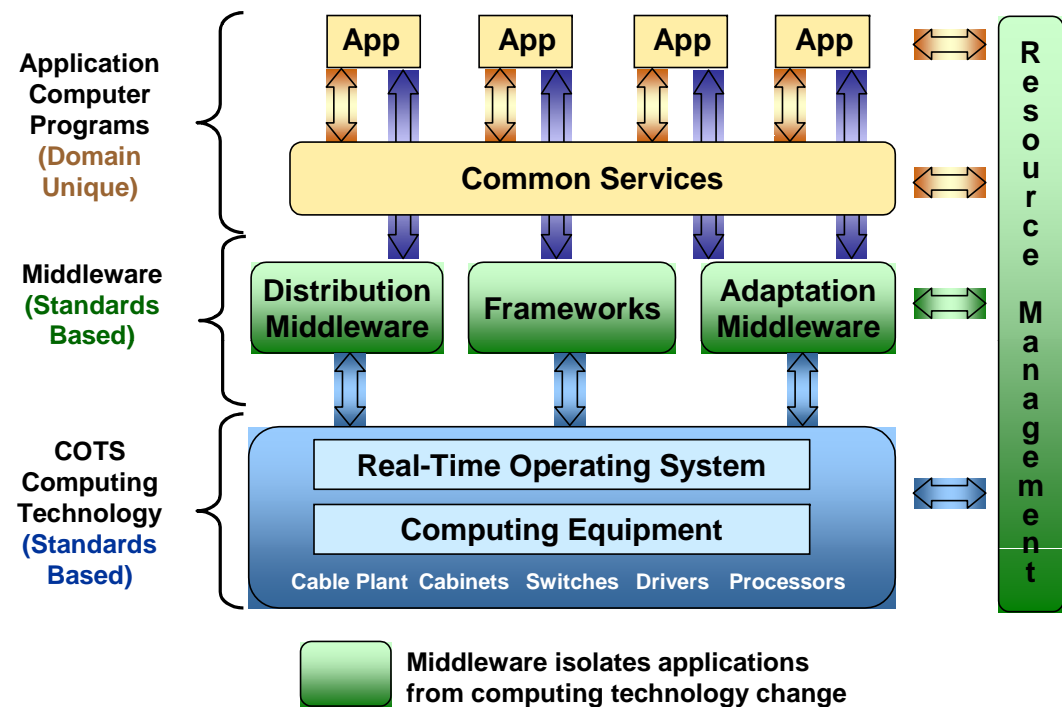
SimVentions has developed the Deployment and EXtraction Tool for sERVICES (DEXTER) tool which automatically re-hosts software capability written for a particular operating system (O/S), platform and middleware combination to run on any O/S, platform and middleware combination. SimVentions has already demonstrated this capability for web services and we are now in the process of applying this technology to any tactical component for which there is a desire for capture or re-use.

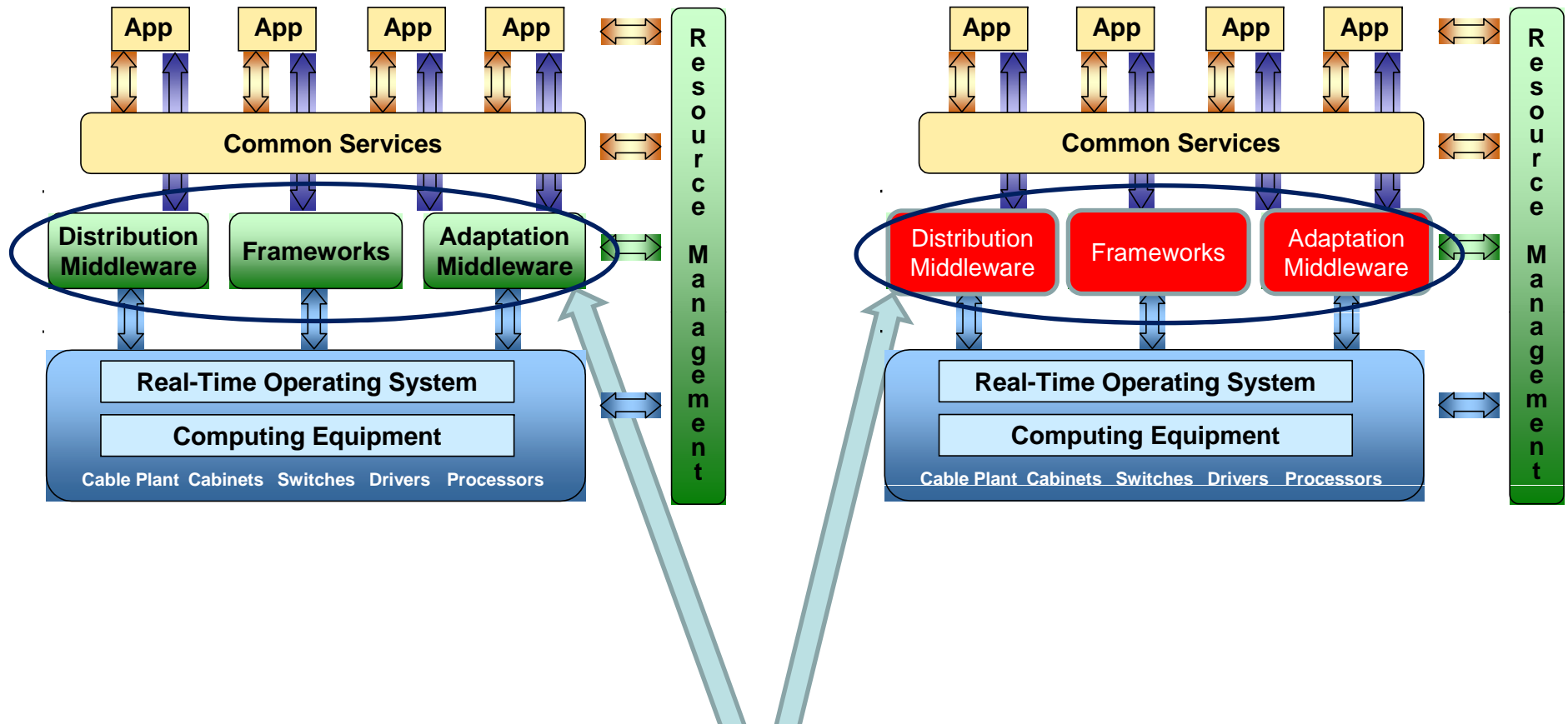
The What

- Component-ize applications into logical and replaceable segments/product lines
- Move to open source/ commercial hardware and operating system
- Separate applications from hardware Via commercial middleware adaptation layer
- Maximize opportunity for application re-use within and across projects

The Why

- Component-ize'd architecture provides for easier and more frequent upgrades
- Using open source platforms enables DoD to capitalize on the huge investment and progress being made in the commercial marketplace
- Separating applications from hardware and operating systems provides for greater portability and migration to improving hardware
- Application re-use means less development and reduced testing cost



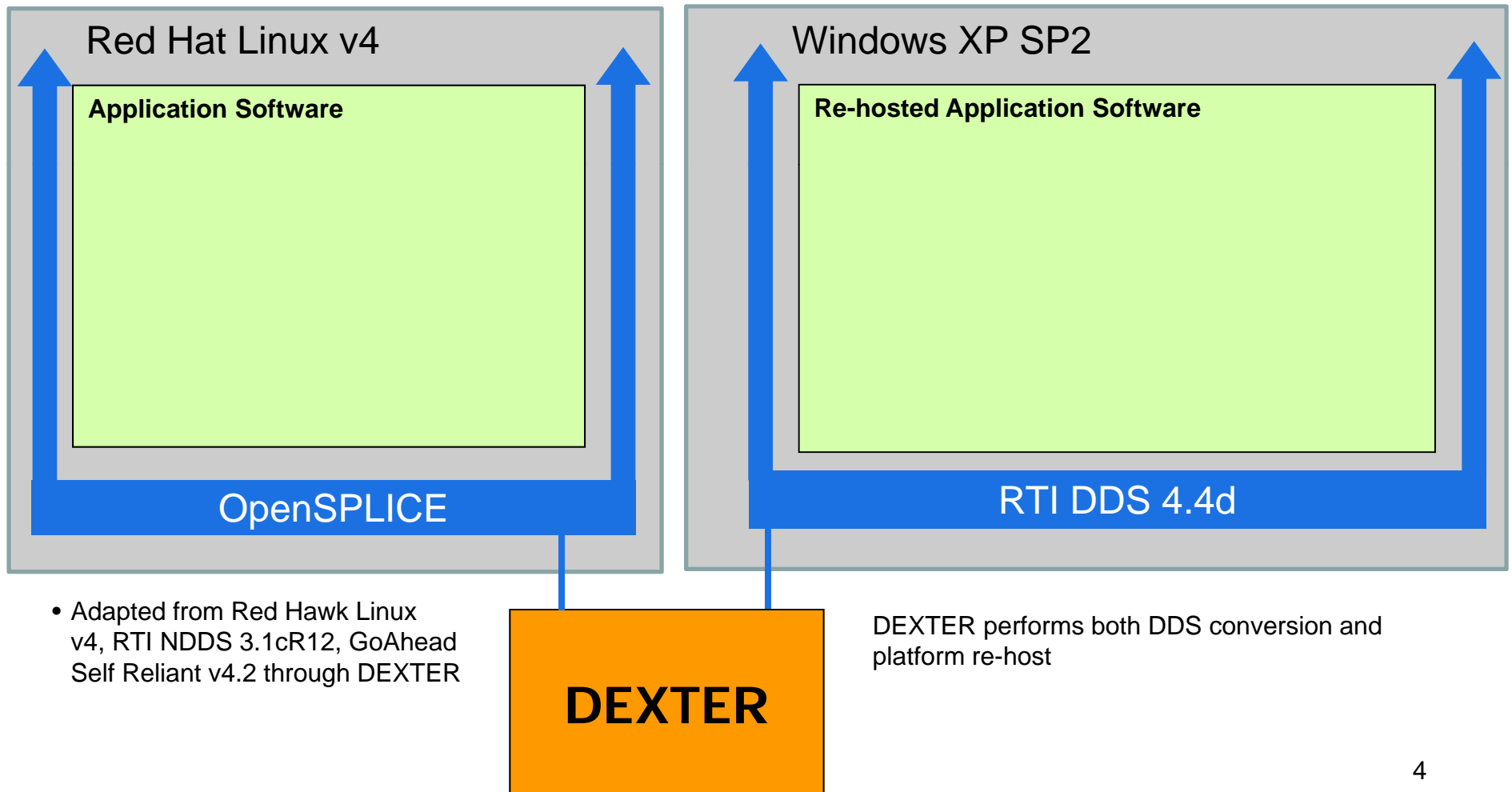


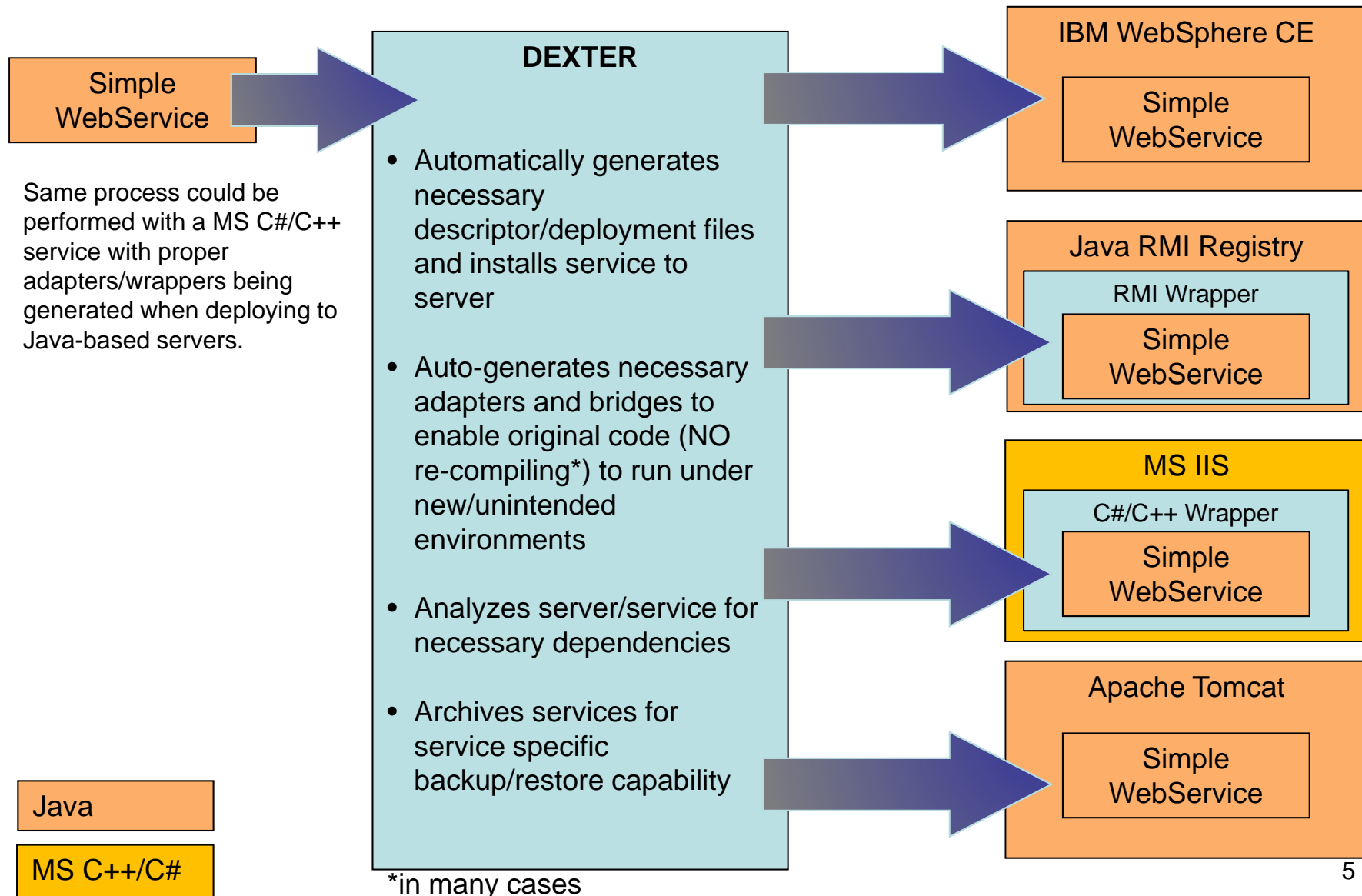
What happens when commercial middleware standards change?

- Option #1 - Stay with an outdated/unsupported standard?
- Option #2 - Rewrite and retest application software to conform?
- Option #3 - Build and test additional translation software?

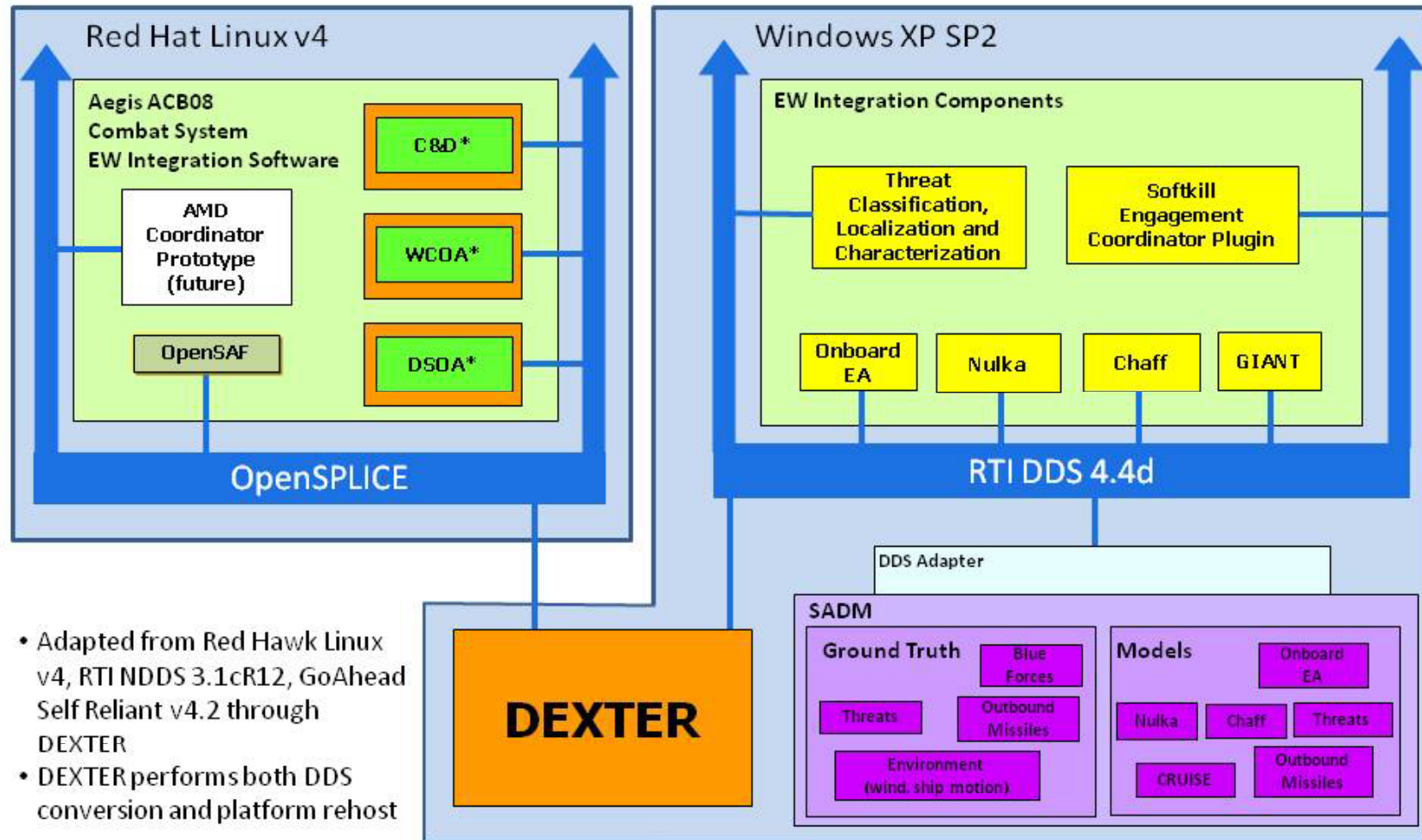
What's the Solution?

Option #4 – Build an automated tool that re-host applications from one middleware standard/version to another without involving software developers. **D**eployment and **EX**traction Tool for **sER**vices (**DEXTER**)





Notional Example



- Adapted from Red Hawk Linux v4, RTI DDS 3.1cR12, GoAhead Self Reliant v4.2 through DEXTER
- DEXTER performs both DDS conversion and platform rehost

The potential savings from automated re-hosting are enormous:

- Reduced labor cost and schedule time due to software that does not have to be rewritten
- Reduced testing time and cost – testing can account for up to 80% of overall software development cost
- Constant improvement of application as it is re-used in new environments
- Cost savings in middleware licenses purchased