

Hot Patching Model Changes in Papyrus-RT

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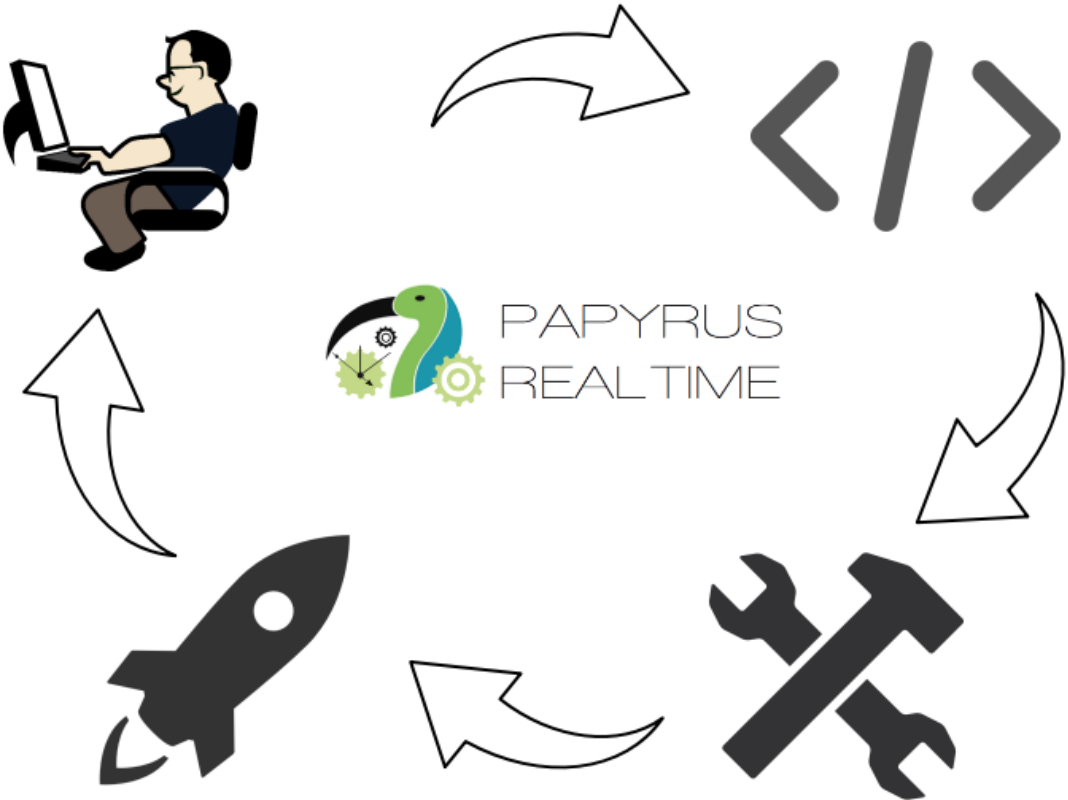
- Dynamic software updating is the process of updating a running piece of software without halting the execution
 - fixing bugs
 - adding new features
- Important for critical non-stop systems
 - telecommunication
 - air traffic control
 - financial transaction processing

Dynamic Software Updating - Examples

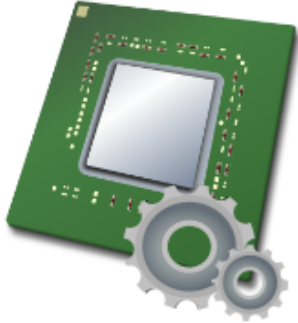
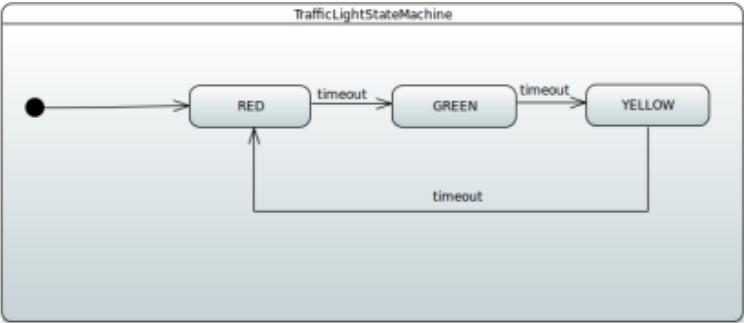


- Unreal Engine
- Crytek Engine
- Bitsquid Engine
- Visual Studio Edit and Continue
- Runtime Compiled C++
- Kitsune for patching the Linux kernel
- Oracle's Java Hotswap VM
- The Erlang programming language
- ...

Papyrus-RT



Hot Patching Model Changes



1. **Dynamic Loading:** code changes are loaded at runtime as shared libraries
2. **Dynamic Linking:** existing references are updated to point to newly loaded definitions
3. **State Transfer:** state of the program must be transferred correctly to the updated program

DEMO