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Resource control implementation (prototype)  
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Acute extends an OCaml core to support distributed development, deployment, and execution, allowing type-safe interaction between separately-built programs. It is expressive enough to enable a wide variety of distributed infrastructure layers to be written as simple library code above the byte-string network and persistent store APIs, disentangling the language runtime from communication.

This requires a synthesis of novel and existing features: (1) type-safe marshalling of values between programs; (2) dynamic loading and controlled rebinding to local resources; (3) modules and abstract types with abstraction boundaries that are respected by interaction; (4) global names, generated either freshly or based on module hashes: at the type level, as runtime names for abstract types; and at the term level, as channel names and other interaction handles; (5) versions and version constraints, integrated with type identity; (6) local concurrency and thread thunkification; and (7) second-order polymorphism with a namecase construct. We deal with the interplay among these features and the core, and have developed a semantic definition that tracks abstraction boundaries, global names, and hashes throughout compilation and execution, but which still admits an efficient implementation strategy.

This deliverable presents a prototype Acute source release that compiles with FreshOcaml. It also comprises a series of examples in the `examples` directory, including an implementation of mobile ambients in Acute. Acute is known to build successfully on Linux, OS X, and FreeBSD 5.1-RELEASE (though for the latter GNU Make is required, not BSD Make). Please see the `README.distro-src` file for full build instructions.