dotNyet

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Distributed computational systems are all about allowing one machine on a network to tap into the computational resources of one or more other systems connected to the same network. Popular frameworks for this range from commercial systems such as Microsoft's .NET to large open source projects such as the Globus Grid. One characteristic common to these systems is the relatively high level of complexity in their architectures, deployment requirements, and development resources. The dotNyet system is Tcl's answer to the complexity of these other systems. dotNyet exploits a handful of uniquely-Tcl-empowered technologies to provide a simple yet powerful platform for the easy development and safe deployment of secure platform-agnostic distributed Tcl applications over untrusted network environments.

The first of these technologies is a package called PoliTcl. This package provides for stand-alone Tcl programs capabilities similar to the policies package provided by the Tcl browser plugin. PoliTcl allows pre-defined policies to be associated with particular modules of mobile code, so that those modules, once cryptographically authenticated, can be provided with discrete custom-designed execution sandboxes which provide limited access to the resources of the host computer. These sandboxes can be finely tuned, via the policy mechanism, to the specific needs of the particular application and the particular useage context. The Cryptkit package provides support for cryptographic signatures, authentication of code, and secure communication channels. Finally, the messaging and control layer for distributed processing is provided by Tequila. These pieces are woven together in the dotNyet system to allow a safe and secure environment for Tcl-based applications to span multiple locations, with components that can move freely among these locations and tap into selected resources across the network.