

Health Maintenance System: An Application of Recovery Oriented Computing for HPEC Systems

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Until recently, the primary, single aspect of HPEC systems that has been most critical has been "performance", in terms of processor speeds and I/O throughput. As processor speeds and I/O throughput has continued to increase, and as the capability to build larger and larger systems has improved, the need for raw performance is becoming less critical. Now, it is the ability to achieve a high level of application availability that is becoming as critical as performance.

In this paper, we will present a CORBA based framework upon which highly available applications can be constructed. This framework, known as the Health Maintenance System, provides the application, system managers, and management tools with the ability to "manage" all resources within a system such that the "health" of the system can be maintained. The management of these resources involves the ability to "sense" the state of the resource, to control the resource, and to run tests on the resource in order to pro-actively detect any latent problems.

The primary facet of the framework is the "resource manager". The resource managers provide local management support for all system resources. In addition, the resource managers provide management access to clients, e.g., the application. This access is provided via a set of "client interface" modules that provide a wide variety of interfaces, e.g., APIs, agents, etc. It is this combination of resource managers and client interface modules that allow the framework to be easily configured for a specific HPEC system.