GoAhead SelfReliant

Basic Availability Management (SR-BAM)

For application and system developers who require high availability without complexity, GoAhead® SelfReliant® Basic Availability Management (SR-BAM) provides the surest and fastest path to 99.999% availability. Targeted for systems running on rack-mounted, pedestal, or bladed servers, SR-BAM allows developers to quickly make applications highly available. It rapidly detects, isolates, recovers, and sends notifications for application, system, and external services failures. Recovery actions include application start, stop, restart, and fast switchover to a redundant resource.

SR-BAM offers a layered method to quickly and easily implement SelfReliant HA functionality. Many customers start by adding simple, transparent application failover to ensure continuous service. This approach to availability requires no application modification. It is ideal when stateless failover is sufficient HA functionality, or when it is not possible or desirable to modify the application. Transparent availability management can be applied to applications on up to 64 nodes. For many projects, this SR-BAM implementation fully meets the system's availability requirements.

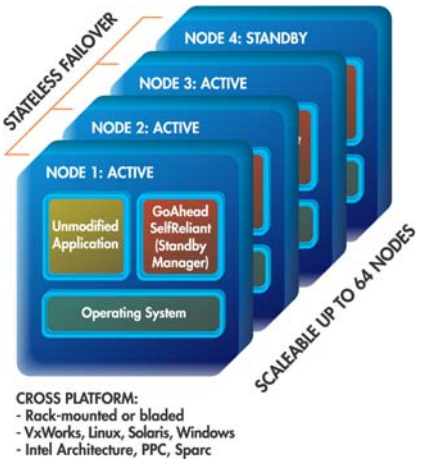
For developers who require more availability control over their applications and services, SR-BAM offers a set of checkpointing APIs to implement failover across application and/or node pairs to ensure critical state is preserved during any type of failure. Active/active and active/standby configurations are supported.

Key SR-BAM Benefits

- **Enables development team to quickly implement fundamental HA capabilities**
- **Pre-integration with third party hardware and software eliminates unproductive development effort and insulates development teams from changes in underlying hardware and software**
- **Platform independence enables development teams to more quickly respond to new technologies and platforms**
- **By seamlessly upgrading to the Advanced Suite, development teams can leverage more sophisticated capabilities**

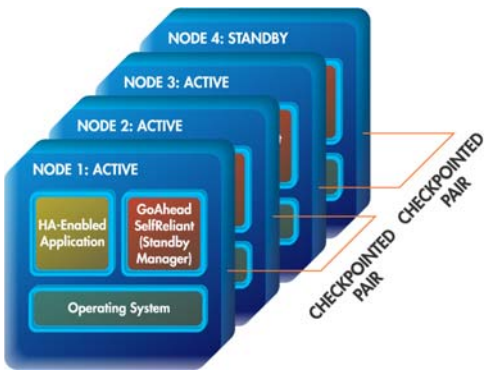
For more complex systems that require more sophisticated failover policies and hardware management, SR-BAM can be easily upgraded to the SelfReliant Advanced Suite (SR-AS). Building upon their initial SR-BAM high availability features, project teams can gracefully upgrade to the Advanced Suite for even greater control of all critical system resources.

Multi-Node Switchover with No Application Modifications



CROSS PLATFORM:
- Rack-mounted or bladed
- VxWorks, Linux, Solaris, Windows
- Intel Architecture, PPC, Sparc

Simple Set of APIs for Checkpointing of Application and/or Node Pairs



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Who Uses SR-BAM

With an easy-to-use interface and a simple set of APIs, SR-BAM is ideal for:

- Project teams who are under severe time pressures to deliver fundamental HA capabilities
- Developers who are building solutions that require only fundamental HA capabilities
- Architects who need a phased approach to HA functionality—starting with fundamental HA capabilities and moving to more sophisticated HA capabilities over time
- Project teams that need to quickly implement a prototype HA solution for field trials, then add more sophisticated HA capabilities for later releases and commercial deployment
- Developers of legacy or commercial applications that must be managed for availability, but the code cannot be modified

Basic Availability Management Services

Transparent Availability Management Service (TAMS)

This feature provides high availability for legacy and third-party applications, as well as applications that preserve state through other methods.

- Application monitoring and control to start, stop, restart, and switchover monitored applications and/or nodes
- Sub-second failover for clusters up to 64 nodes
- Application role assignments: active, standby, unassigned
- Failover of active application to standby application automatically upon fault detection, via manual request or external management interface
- Individual or group failover support, including failover of resources and processes that depend on a failing application
- Configurable retry policies (frequency and time period) to attempt, upon failure, to restart the application on the current node prior to a switchover
- Application and node monitoring via customer-defined text or binary protocol (such as HTTP or PING)
- Virtual IP address support
- Ability to call external applications (such as sending an SNMP trap, set, or external command line) upon a start, stop, restart, and switchover of the application
- Browser-based management console enables remote access to applications in the cluster to start, stop, restart, monitor health, and determine role assignment

Simplified Availability Management Service (SAMS)

This feature provides checkpointing between application and node pairs. It is intended for applications that require fast failover with preservation of application state.

- Simple HA APIs for pairs of applications and/or nodes in active/standby and active/active configurations
- APIs enable replication of application state
- Millisecond stateful switchover
- Support for individual, group, service group, and dependency failover scenarios

SR-BAM Specifications *(measured on Linux CGE 3.1)*

System Requirements

- Run-time memory: 4.5 MB
- Run-time disk space: approximately 10 MB
- Development sisk space: 110 MB
- Operating systems/CPU platforms supported:
  - RedHat Enterprise Linux 3.0 (IA)
  - RedHat Linux 9.0 (IA)
  - MontaVista Linux CGE 3.1 (IA)
  - MontaVista Linux Professional Edition 3.1 (PPC)
  - Windows Server 2003 (IA)
  - Debian 3.0 Linux (IA64)

Performance and Scalability

- Modified application failover time: as low as 10 msec
- Unmodified application failover time: as low as 300 msec
- Steady-state CPU usage: <0.1%
- Number of nodes: up to 64

Languages supported

C and C++ (only applicable for application modification)

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