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- A Java.net project aimed at building a Clustering Framework
 - > for Java EE/J2EE Application Servers and any other product requiring clustering features
 - > At <https://shoal.dev.java.net>
- Shoal provides a Group Management Service (GMS) that provides
 - > group membership management through discovery of events
 - join, shutdown and failure notifications, delegated recovery initiation, and
 - > state caching facilities
- Applications interact with Shoal's GMS API using their logical identity semantics to communicate with other group members

Three broad feature themes:

- Features providing
 - > a group sensory-action theme.
 - > a group communications theme.
 - > Shared or Distributed Storage theme.

- Provides a set of Client APIs for signalling cluster events. Such Signals include
 - > Lifecycle Signals
 - > Cluster Member(s)
 - joining the cluster at runtime
 - leaving the cluster at runtime
 - going into in-doubt(suspected) state.
 - being confirmed failed
 - > Recovery oriented Signals and Support
 - > Automatic Recovery Member Selection Signal
 - > Protective failure fencing operations

- GMS provides Group Communication Provider SPI
 - > Group communication technologies such as JXTA, JGroups, etc. integrate through SPI
- GMS provides a group messaging handle
 - > to clients to send messages to group or particular member(s),
 - > client components can address messages to specific components in destination
- GMS hands Message Signals in recipient clients
 - > GMS delivers the Signal to the target component

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- GMS provides a Distributed State Cache (DSC) interface
 - > Can be implemented to suit custom requirements
 - > Default Implementation is a shared concurrent hashmap
- DSC can be implemented for in-memory shared/distributed cache for application state
- Group communication providers provide tunable performance properties for better throughput



