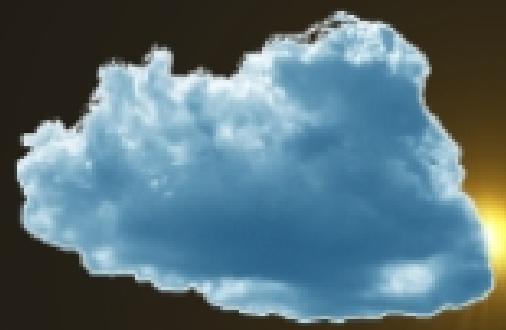
CloudI



A Cloud as an Interface

to All Your Source Code!

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What Is CloudI?

- A flexible application server that supports:
  - Many programming languages
  - Many messaging buses
  - Many databases
  - Scalable process management
  - Fault-tolerance with process isolation
- A Private Cloud Computing Solution
- A Scalable Server for Public Deployment of Online Services

Why Use CloudI?

- To make source code more scalable
- To manage unstable source code that offers critical functionality
  - Provide a method to migrate away from a dependency on unstable source code
- To reuse source code from diverse programming languages
- To simplify development with a flexible integration framework

What Is CloudI For?

- Event Handling
  - Websites, Games, ...
- Data Processing
  - Text processing, numerical computations, …
- System Integration
  - Data routing, access control, ...

How To Develop A CloudI Service

- The CloudI API with:
  Ruby, Python, C/C++, Java or Erlang
  - Service Messaging:
    send_sync, send_async, recv_async, mcast_async
  - Service Advertising:
    subscribe, unsubscribe
  - Service Message Result:
    return, forward
- Passively accepts incoming service messages to resources (names) advertised by the service

How To Develop A CloudI Service...

- A service name prefix is provided by the service configuration, along with thread count and process count
- All subscribe API calls specify a service name suffix, so many destinations within a single service share a common service name prefix
- All service messaging utilizes the complete service name as a destination
- Service messages are automatically load-balanced based on the sending service's config

Configuration

- Dynamic configuration is supported by the CloudI Job API
  - Accessible by JSON-RPC, HTTP, and services
- Access Control Lists (ACL) specify service name destination prefixes that are explicitly allowed or denied (affects sending)
- Service command line, restart characteristics, threads, processes, ACLs, load-balancing, etc., is all defined as a Job to execute

Integration Considerations

- Databases, HTTP, ZeroMQ, etc., integration occurs with separate Erlang CloudI services
- No data format or type is enforced for incoming service messages
  - Non-Erlang (i.e., external) service messages are received as binary data
- ACL definitions can easily isolate a service
- Global data can be stored within a database
- External source code uses service messaging for input and output (stdout and stderr get logged)

Migration To CloudI

1) Develop or modify source code to create a service that handles input as service messages and returns output
2) Add service configuration to create the Job based on load-balancing, fault-tolerance, isolation (ACL), and capacity requirements
3) Any source code that is a scalability bottleneck can be gradually migrated to Erlang as a separate service using the same service name

More Information

- Frequently Asked Questions
  http://cloudi.org/faq.html
- Mailing List
  http://groups.google.com/group/cloudi-questions
- CloudI Expert
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Questions?