

Rhapsody Interface Management and Administration

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Welcome

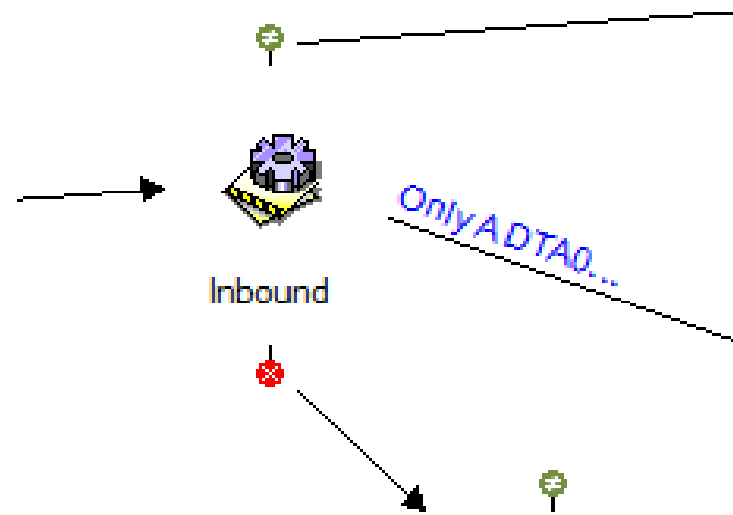
- **The Rhapsody Framework and Message Handling**
- **Web Management Console**
- **Monitoring and Management**
- **Engine Management, Best Practices, and Common Performance issues**
- **Users and Groups**
- **Notifications and Watch Lists**
- **Q&A – Chat and Live**

The Rhapsody Framework

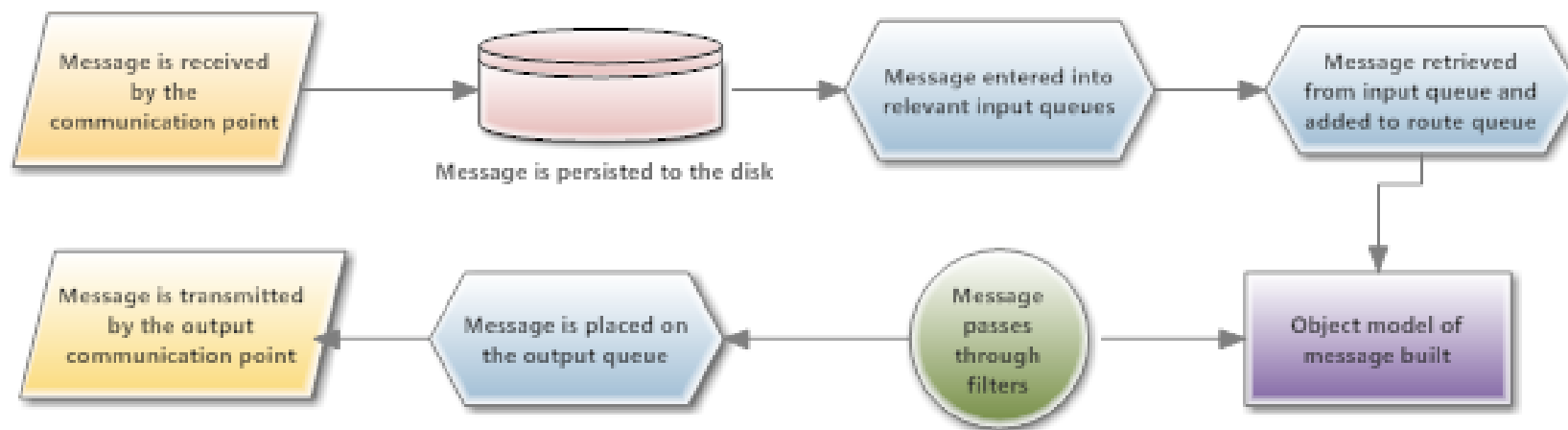
- **Rhapsody- receives messages, processes messages, and sends messages to other applications.**
- **If a message is received, the message will be sent to the expected recipient or placed in an error queue.**
- **This process is guaranteed by a persistence store that is managed by the engine.**

Rhapsody Message Processing

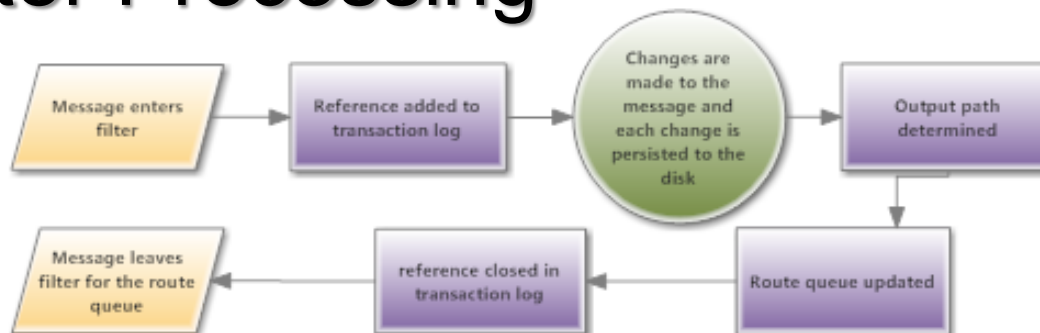
- **Rhapsody Components**
 - Communication Points
 - Routes
 - Filters
 - Connections



Message Handling



Filter Processing



The Persistence Store

- The persistence (or data) store is a single folder repository with two primary purposes:
 1. As a repository for active messages and their associated meta-data.
 2. As a repository for historical messages
- The persistence store does not differentiate between active messages and messages for which processing has been completed
- The size of the persistence store is managed to constrain the size of the archive
- Messages older than the limit of the archiving period are normally backed up to system storage devices.

Web Management Console

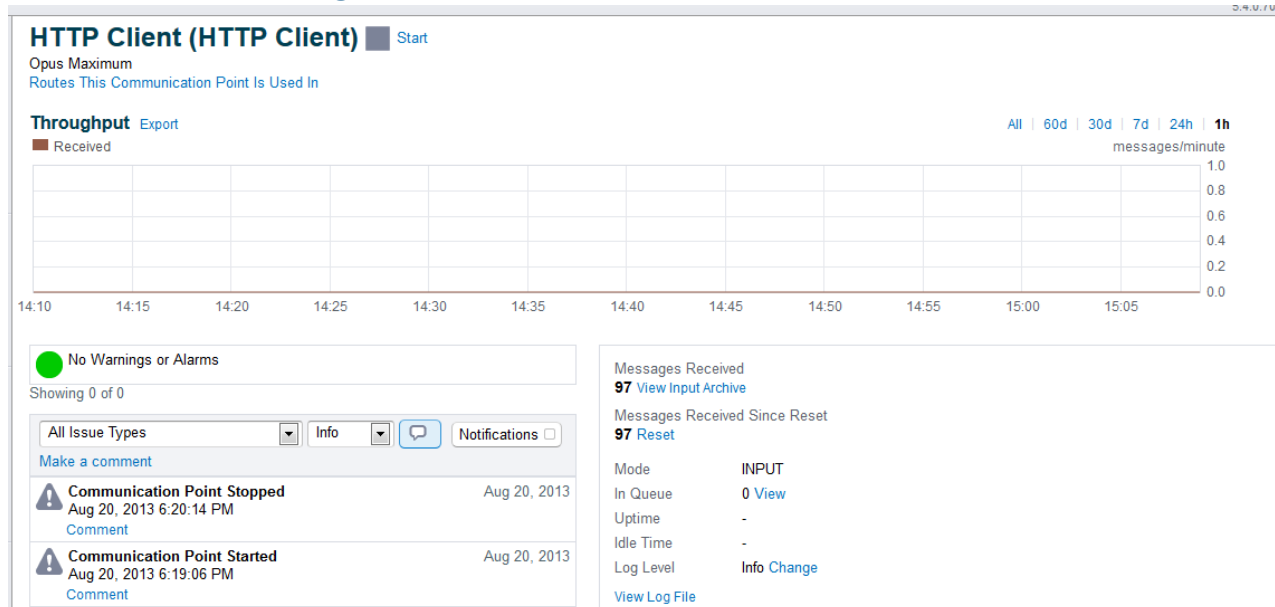
- Monitoring and control tool for the Rhapsody engine.
- https://<server_name>:8444
- http://<server_name>:8081
- Landing page of the Web Management Console is the Engine Monitor page under the Monitoring menu
- Engine Monitor provides a snapshot of the Engine Uptime, total Messages Processed and message Throughput for the Rhapsody engine.

Route Details

- Provides a summary view of all routes in the system, including their current state, traffic and processing load.
- Waiting column provides a numerical indicator of any messages queuing on the route
- Currently Processing column is an indicator of messages that have not yet completed processing
- Route Details - lists all Input and Output communication points associated with this route, along with any filters that may be present
- Ability to view throughput of route
- Warnings or Alarms - lists potential problems and issues

Communication Point Details

- Top section identifies whether the communication point is running or not and includes a link to changing this status
- **Warnings or Alarms** - lists potential problems and issues
- Ability to view Notification Settings
- Link to view messages



View Messages

- The message view has four sections
 1. **Message Events** - lists the path which the message has followed as it traverses the engine
 2. **Event Tree**-allow for navigating within the Message Events tree
 3. **Message Properties** - displays a read-only list of the properties (meta data) associated with the message at each stage of its processing
 4. **Message Body** - displays the content of the message
- The download link at the bottom left of the panel saves the message locally
 - These messages can then be viewed in another application such as HL7 spy

Handling Message Errors

- Unhandled processing errors result in the associated messages being placed onto the Error Queue
- Messages listed on the Error Queue can be selected for further processing
 - **Reinject** - The message is reinjected into the engine at its original point of entry
 - **Edit**-allows you to edit the message before redirection
 - **Redirect** - The message is redirected to a selected filter or communication point.
 - **Reprocess** - The message is sent back to the filter on which the error originally occurred
 - **Delete** - The message is removed (deleted) from the queue and no additional processing is performed on the message
 - **Download** - The message is downloaded as a compressed file

Message Searching

- Web Management Console provides the ability to search for messages held in the persistence store, including messages which are still active and have not yet completed processing
- The Find Messages section of the WMC menu provides a number of templates for search operations and also provides for re-use of common query structures:
 - Input Search: standard template for locating messages by the input communication point
 - Output Search: standard template for locating messages which have completed processing
 - Route Search: standard template for locating messages by route
 - Saved Searches: a search may be saved for re-use
 - Recent Results: presents a list of the 10 most recent searches

Monitoring Engine Health

- A well managed Rhapsody instance has high reliability and is not likely to require much system attention. Continuous uptimes in excess of 400 days is not unusual
- Traits of a healthy engine system
 - Is configured defensively to ensure that processing exceptions are rapidly noted and acted upon
 - Utilizes memory effectively and has sufficient spare disk capacity to comfortably manage the work load
 - Ensures that information placed in log files efficiently reports issues
 - Maintains small to non-existent queues
 - The volume of logging is sufficiently low so that significant issues may be readily identified rather than being difficult to locate due to the volume of logging

Archive Cleanup Process

- Once message processing is complete and no updates are written to the store the messages are available for historical analysis
- The persistence store can grow at a rate of 30-50 GB per day in high load environments
- The archive cleanup service can be configured to ensure that disk limits are not exceeded

Archive Cleanup

Automatic Cleanup

Keep archive data for *

Keep logs for * days

Cleanup notification event history

Cleanup

Every * hours

At minutes past the hour

Cleanup Status

Available Disk Space	24.3 GB
Automatic Cleanup Status	Last cleanup finished at 24 September 2013 14:00:00. The cleanup took 0 secs and removed 0 files (0 MB).
Manual Cleanup Status	Never run since last Rhapsody startup.

[Cleanup Now](#)

Backups

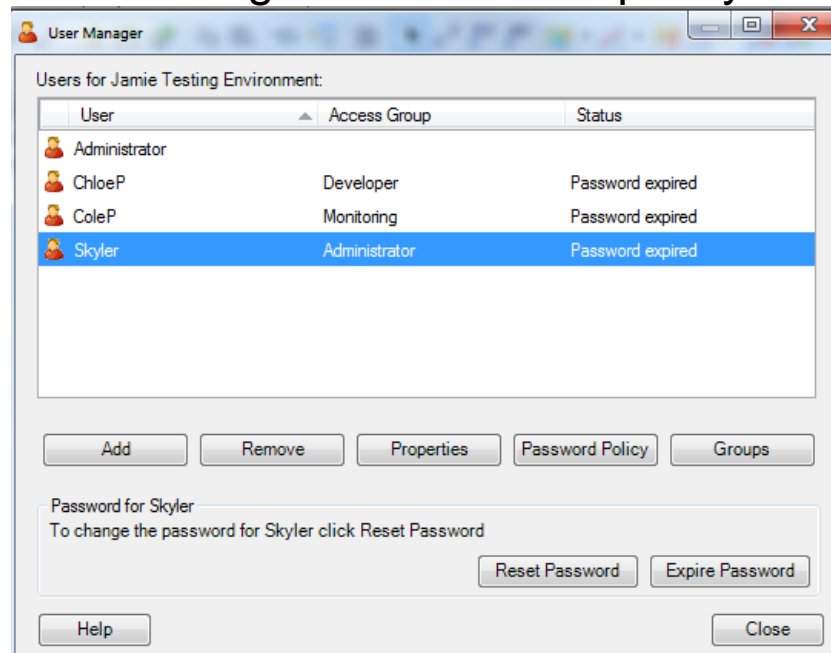
- Backups can be scheduled as full or incremental
- Backup schedules may be defined for
 - Administration components: notably the user store and schedules for backup and cleanup
 - Configuration: the engine configuration including watch lists, notifications and tracking schemes
 - Message store: including the active messaging and logs
 - All: the complete engine state
- **Good practice model-** weekly full back up followed by nightly incremental backups

Log Levels

- The operation of the Rhapsody environment is continually monitored by the logging components and events are reported as they occur
- Five different log level
 - FATAL: report only fatal (very severe) events
 - ERROR: report only error and fatal events
 - WARN: report warnings, errors and fatal events
 - INFO: include information events in the logs as well
 - TRACE: provide trace level logging as supported by the underlying code
 - DEBUG: provide more detailed information on the events normally useful for application debugging

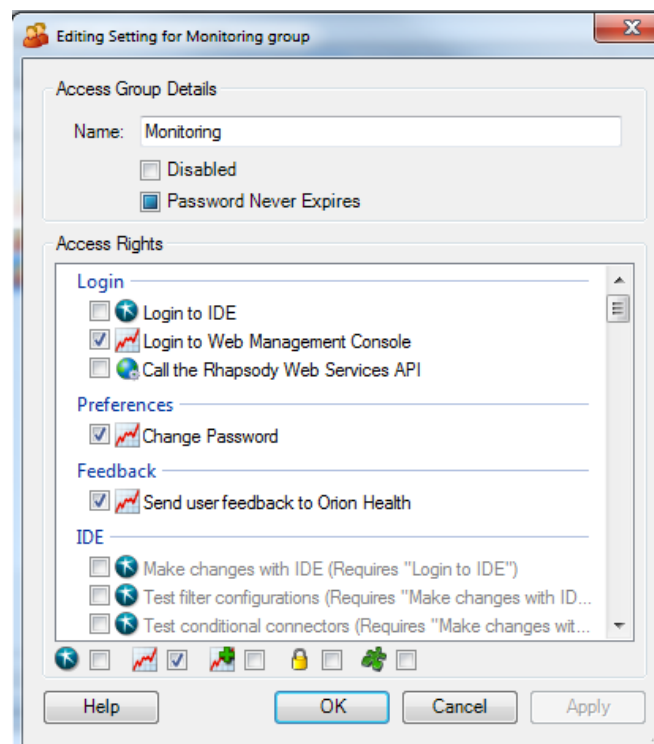
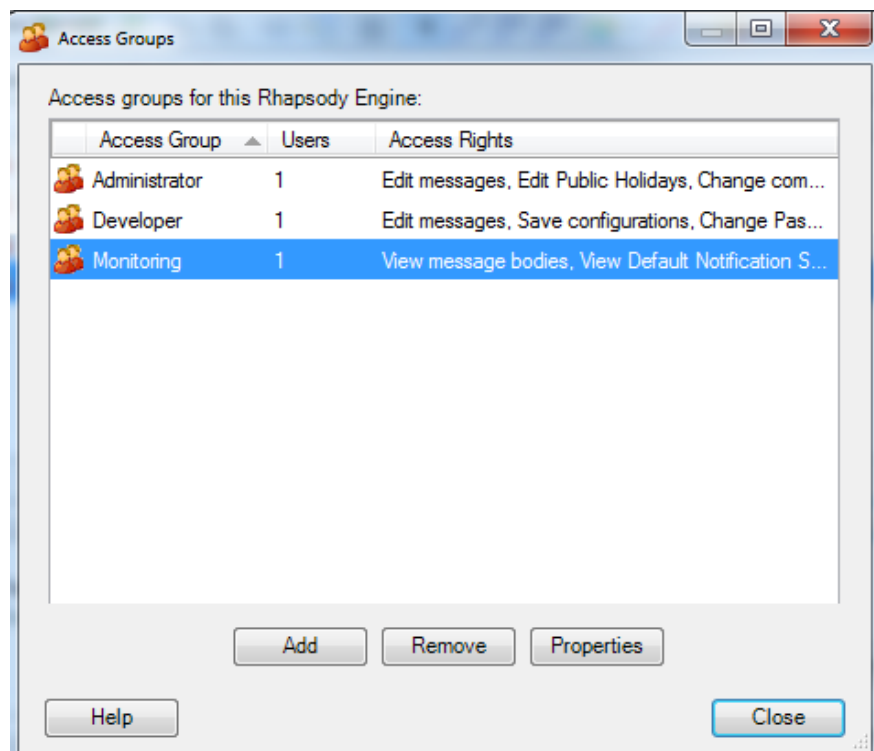
Users

- Assigning users provides many benefits for organizations
 - Permits the creation of user accounts with limited access to Rhapsody
 - The ability who has a Rhapsody component checked out
 - The ability to tailor the way each user receives notifications from the Rhapsody elements they have been subscribed to
 - Users and Groups are managed from the Rhapsody IDE via the User Manager



Groups

- The list of Access Groups is accessible by clicking the Groups button on the User Manager
- An administrator is able to add a new, modify an existing scheme or delete an access group when no longer required



Tasks and Responsibilities

- Maintaining and managing a Rhapsody site generally requires three groups of activities.
 - Site Administration tasks: responsible for the server and integration with site networks
 - Analyst / Developer: responsible for building and managing the configuration and ensuring the correct operation of interfaces
 - Monitoring / support: responsible for monitoring the state of the system and first point of contact for issues

Access Schemes

- Login to IDE - provides read access to the Rhapsody Integrated Development Environment (IDE).
- Login to Web Management Console - provides read access to the Management Console.
- Call the Rhapsody Web Services API - can call operations in the Rhapsody Web Services API.

Watch Lists

- **Building and managing a watch list**
 - Each watchlist may be managed by clicking on its link on the Notifications / Watchlists page
 - Management of the recipient list for notifications
 - Management of the components associated with the list.
- **Building a watch list schedule**
- **Watch lists and public holidays**
- **Watch lists and user schedules**
 - The vacation support is available in the My Leave section of the Notifications / My Notifications page for the user

Notifications

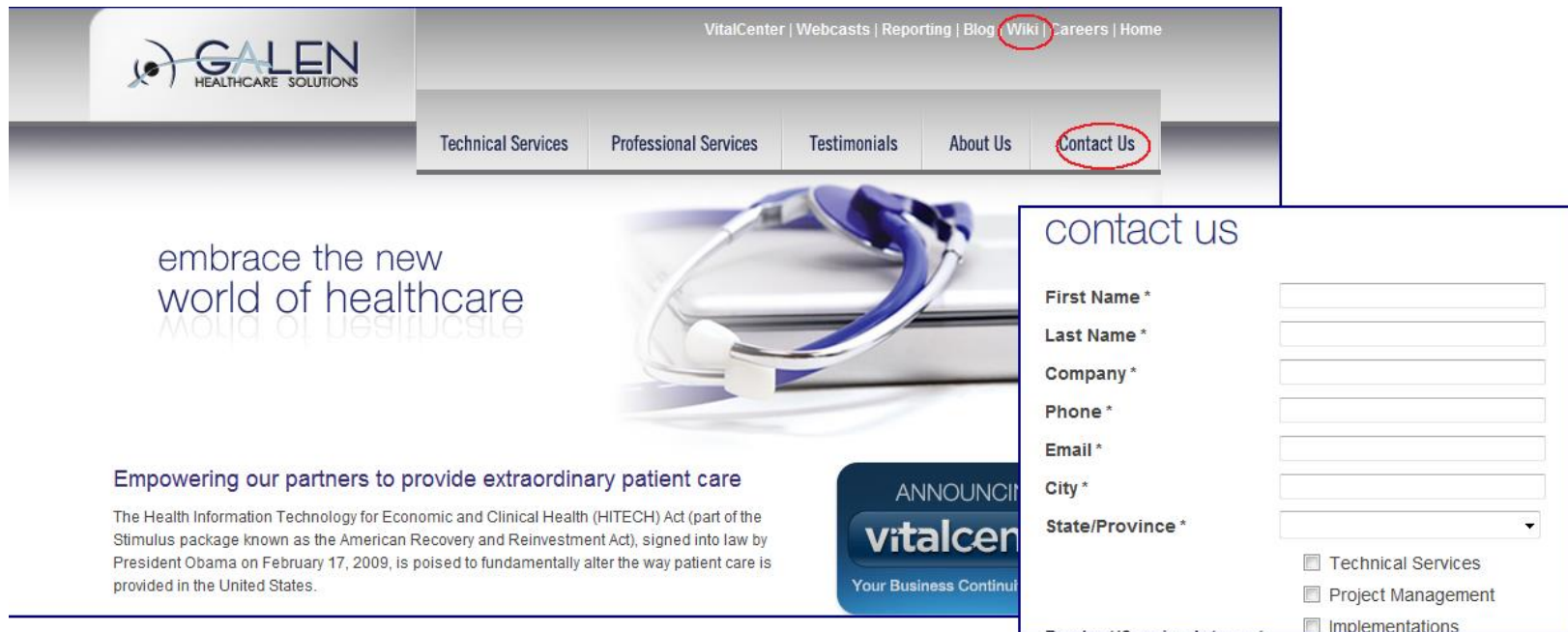
- The issue event
 - Warning-indicates an issue considered relatively benign but requires attention (ops team receive emails)
 - Alarm-indicates an issue which requires immediate attention (Team Lead receives SMS)
 - Escalation-indicates an issue raised in an Alarm state which has not been resolved in a defined time period (Manager)
- Managing Notification Delivery
 - Email, SMS via an Email bridge, Pager via an Email bridge, SNMP
- Default Notifications
- Default Thresholds
 - Trigger Event
 - Threshold

Best Practices

- Ensure the persistence store is maintained in a secure environment
- Ensure the archive cleanup parameters are correctly defined, and that message queues are dealt with efficiently
- Ensure that disk usage is monitored
- Understand the purpose of backups and implement appropriately
- Establish procedures for Disaster Recovery and restoration of the configuration
- Ensure the configuration is tuned to minimize the volume of logging

Thank you for joining us today, for additional assistance....

You can contact us through our website at www.galenhealthcare.com



The screenshot shows the Galen Healthcare Solutions website. The navigation menu includes: VitalCenter | Webcasts | Reporting | Blog | Wiki | Careers | Home. The main navigation bar contains: Technical Services | Professional Services | Testimonials | About Us | Contact Us. The contact form is titled "contact us" and includes the following fields: First Name *, Last Name *, Company *, Phone *, Email *, City *, and State/Province *. Below the form are three checkboxes: Technical Services, Project Management, and Implementations. The website also features a stethoscope image and a section titled "Empowering our partners to provide extraordinary patient care" with text about the HITECH Act.