

Technical Specification / Schedule Advanced Network Fault Management

Team 7: Motorola
CSE 498, Collaborative Design

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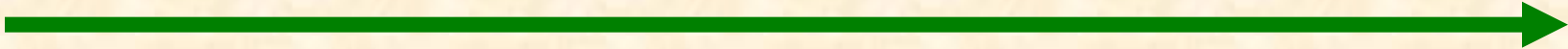
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Project Overview



- Two Types of Network Management:
 - Performance Management is concerned with things like the throughput of the network and the number of packets that are sent across a router interface.
 - Fault Management is concerned with things like failing ports and inoperable fans.
 - Our application will be used by network administrators dealing with fault management.



Project Overview

INFM

Operate Tools Help

Alarm Monitor

Display: Critical Major Minor

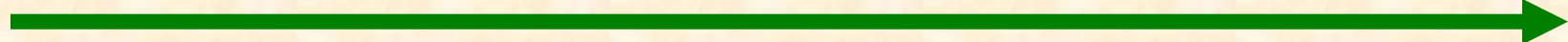
Compress: Correlate Compress&Correlate

Count	DeviceName	OccurTime	OMCRName	EquipmentID	AlarmName	Severity	TotalCount	JobID	Sequence	Description	Additional Inform
2	CBSC-36	2006-08-13 00:20:13			ALARM:14-6512	Minor	2	A000000.00000	028206/152376	CFC Threshold Monitor: Measure...	DESCRIPTION="p
1	MAWI-416-1	2006-08-13 00:20:34			ALARM:1-18004	Minor	1	A000000.00000	282339/152381	SPAN Degraded - Remote Fault Ho...	DEVICE_SUBUNIT
1	MGLI-475-1	2006-08-13 00:21:50			ALARM:1-1711	Major	1	A000000.00000	282347/152421	BTS Relay #11 - Contact Alarm	DEVICE_SUBUNIT
1	MGLI-307-2	2006-08-13 00:22:49			ALARM:1-1033	Critical	57	A000000.00000	298298/152431	MF FAN #3 - Low Speed Alarm	DEVICE_SUBUNIT

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Project Overview



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The screenshot shows the Mozilla Firefox Mockup interface. The browser window title is "Mockup - Mozilla Firefox". The address bar shows a file path: "file:///C:/tibco/gi/tibco-gi-3.5.1-pro-debug/shell.html?jsxappath=..%2F..%2Fproj%2FJSXAPI". The Mockup toolbar includes "Run" and "Stop" buttons. Below the toolbar is an "Alarm Monitor" section with a "Display:" dropdown set to "Critical". There are also buttons for "Compress", "Correlate", and "Compress/Correlate". The main content area displays a list of countries:

	Name
1	United States
2	United Kingdom
3	Afghanistan
4	Albania
5	Algeria
6	American Samoa
7	Andorra
8	Angola
9	Anguilla
10	Antarctica
11	Antigua and Barbuda
12	Argentina
13	Armenia
14	Aruba
15	Australia
16	Austria
17	Azerbaijan

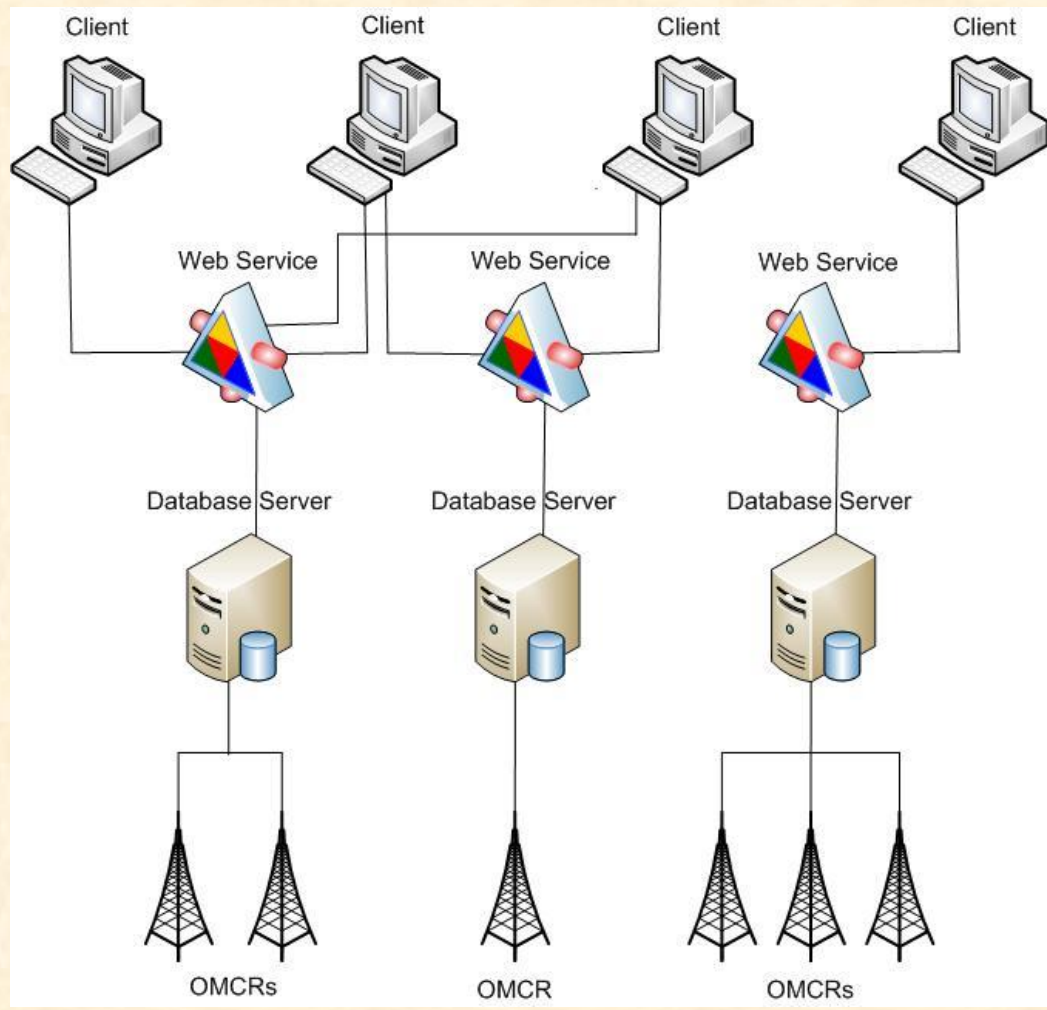
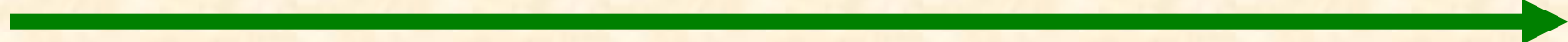


Project Overview

- Start with a standalone Java application
- Isolate the business logic from the GUI logic
- Deploy business logic as a Java Web Service
- Implement the GUI using TIBCO GI and the Model View Controller Pattern
- Connect the new GUI with the Web Service
- Standalone application is now a client-server based application that is easier to deploy and manage.



Project Overview



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Functional Specifications



- Read In Fault Data
 - From a MySQL Database
 - From an OMCR (via FTP)
- Step through faults in temporal order
 - Play, Pause
- Categorize events based on severity
 - Minor
 - Major
 - Critical



Functional Specifications



- Analyze faults based on known rules and past events
 - Compress – group faults that are the same together.
 - Correlate – If Event 1 directly causes Event 2 and Event 3, associate them so that Event 1 can be identified as the cause and fixed first.
- Compute Statistics
 - Search for all events identified by a given rule that occurred in a given time period
 - Search for all events that occurred on a given device that occurred in a given time period



Functional Specifications



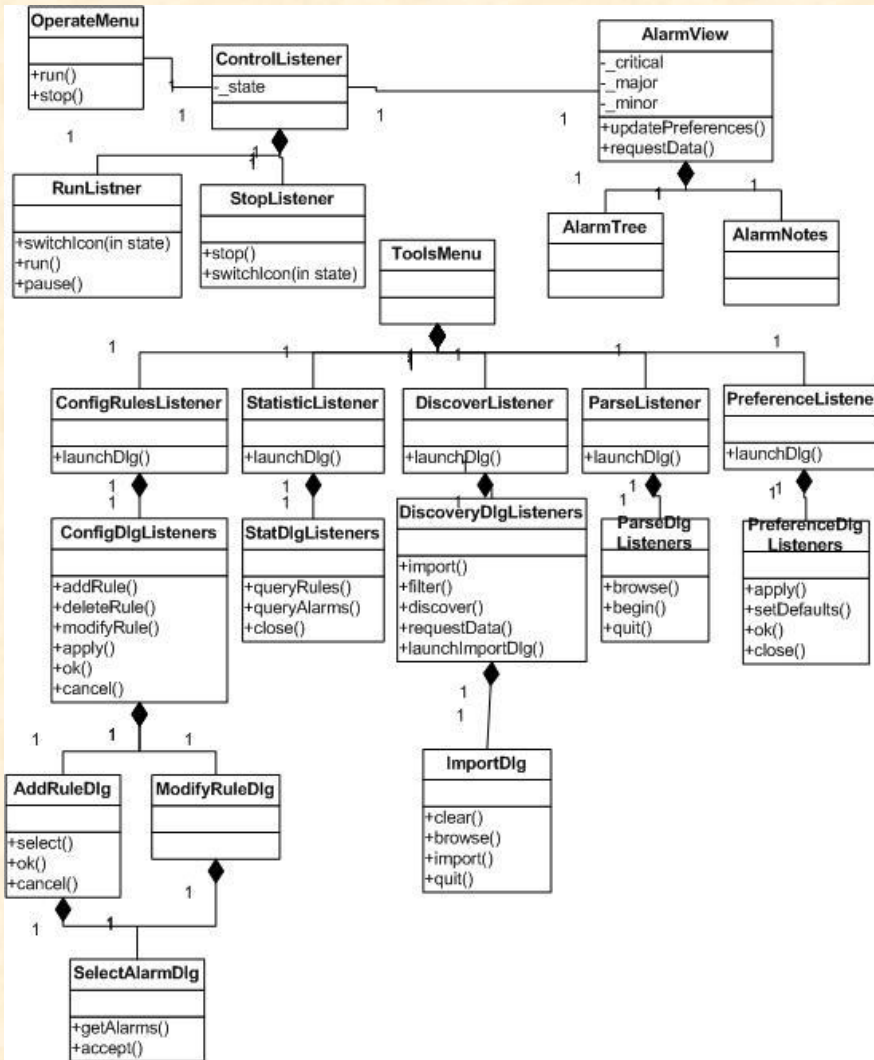
- Allow the rules logic to be configured
 - Add New Rules
 - Delete Existing Rules
 - Modify any attribute of an existing rule
- Discover Rules
 - Ability to automatically discover new rules by applying given artificial intelligence algorithms to known events.



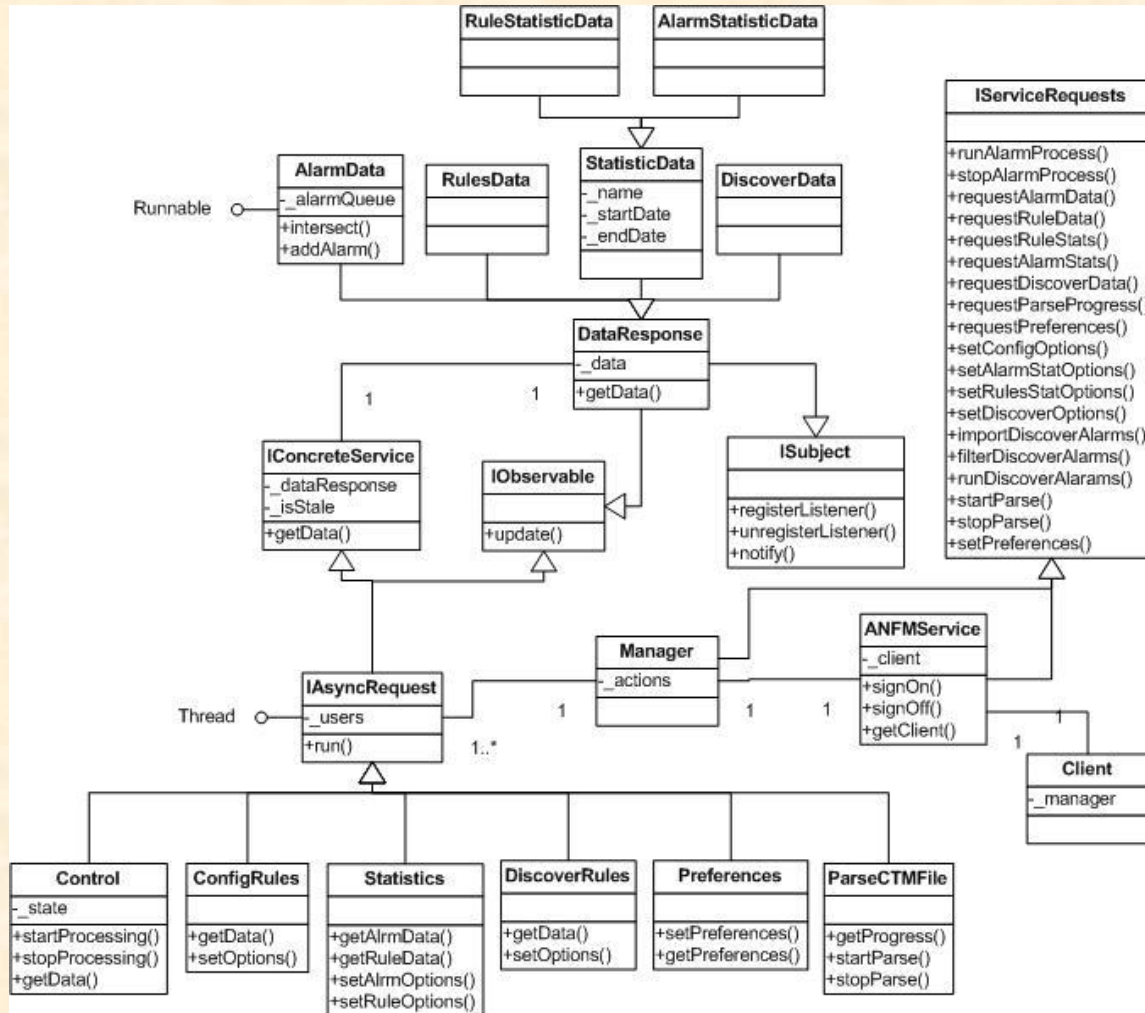
System Components

- Hardware Platforms
 - Platform Independent
 - Client-Server Based
 - Web Service Based
- Software Platforms / Technologies
 - Business logic implemented in Java and reused where appropriate
 - Web services implemented in Java/JAX-WS
 - GUI Developed in TIBCO UI
 - JavaScript, AJAX, SOAP, XML, etc.

Architecture Illustrated



Architecture Illustrated



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Risks

- Mastering Java Web Services
 - Learning how to deploy existing code as a service
 - We have already completed a mock-up of a simple client-server interaction using Java Web Services.
- Feature Creep
 - We have already identified functional improvements that could be made.
 - Focus on getting it working first, then improvement as time permits.



Project Schedule

1. Java Web Services

- a) Simple client-server interaction demo
- b) January 22, 2008 – COMPLETED

2. Technical Specification

- a) First Major Draft of Tech. Spec. Complete
- b) January 28, 2008

3. Draft GUI

- a) Limited functionality GUI demo
- b) February 4, 2008

4. Alpha Demonstration

- a) Alpha version complete and delivered to client
- b) February 14, 2008



Project Schedule

5. Formal Testing

- a) Formal testing of alpha version begins
- b) February 14, 2008

6. Beta Version

- a) Beta version complete and delivered to client
- b) March 14, 2008

7. Project Video

- a) Complete project video
- b) March 28, 2008

8. Design Day

- a) Formal presentation of ANFM Software
- b) April 25, 2008