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# Eclipse the Rich Client Platform

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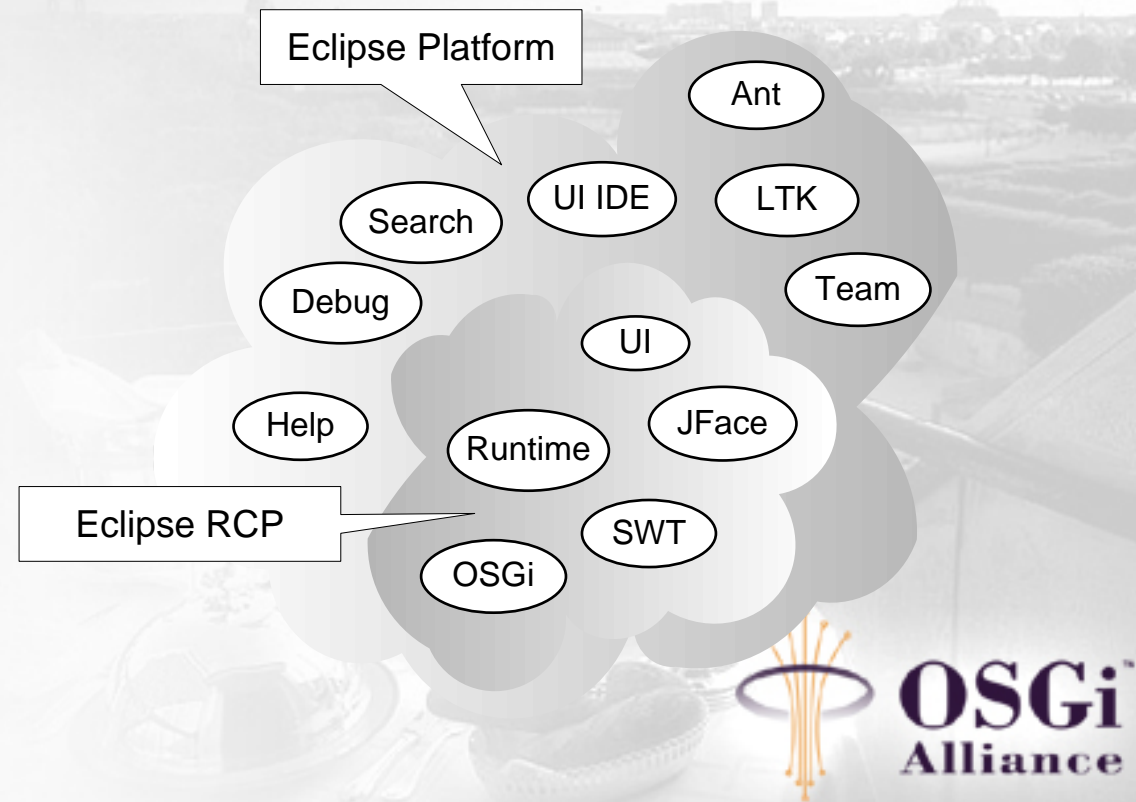


Desktop OSGi Applications

# What is the Eclipse Rich Client Platform

While the Eclipse Platform is designed to serve as an open tools platform, it is architected so that its components can be used to build just about any client application. The minimal set of plug-ins needed to build a rich client application is collectively known as the **Rich Client Platform**.

- A subset of the full Platform
- There are other subsets



# Rich Client Platforms

- Pros:
  - Look good
  - Easy to use
  - Performant
  - Disconnected
- Cons:
  - Larger client
  - Deployment
  - Maintenance

**Eclipse + OSGi = no Cons!**



# RCP Applications

- Wide range of use domains
  - Device management
  - Banking
  - Research
- Secret Sauce



# GumTree – Scientific Instrument Control

**GumTree Platform**  
File Edit User Menu Games Window Help

Scan Resource

**Status**

Reactor: **RUNNING** 10 MW

Experiment: **SETTING UP**

Wavelength (Å): 10    Detector Distance (mm): 10    Ancillary (K): 123

Shutters: shutter 1 **OPEN** shutter 2 **OPEN** shutter 3 **OPEN**

Slits: slit 1: 100    slit 2: 100    slit 3: 100

Control System Status: SICS **OK** MOTORS **OK** COUNTERS **OK**

**TwoD Plot View**

SAMPLE = NaCl, TEMPERATURE = 123.4

Y axis (yunits): 0 to 120  
X axis (xunits): 0 to 120

Select Colour Table: Heat 2

**OneD Plot View**

Scan 1    Monitor 0  
Temperature = 123.4

fixed X     Auto X     fixed Y     Auto Y

Peak position = 0.5    Peak width = 3.1206746

X = 0.9    Y = 308.28137

Gaussian fit

**Scan**

Mode: time    Preset: 1.0    Points: 10

**IDLE**    START SCAN

Progress: [Progress bar]

Time Remaining: 0 m 0 s

Plotting:  1D     2D

Fitting:  Gaussian     Lorentz     Modified Lorentz

Motors: Motor 0: db6    From: 0.0    Step: 0.1    remove

**Plot Ancillary View**

Continue    Stop Plot    temp: 60

Second sensor

Plot ancillary

# IBM Workplace Client Technology, Client Administrator

Help - Actions

OpenFinancial Teller | S1 Enterprise Teller | Customer Service | My Workplace

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IBM *open financial network* IBM

Customer Search | Account Search

Enter Lastname:  Search

Enter Firstname:  Search

Enter SSN:  Search


Enter Account:  Search

All Accounts:  Search

10 accounts are found

Customer Profile

Name: John William SSN: 123-45-6789 ★★★★★



Address: 345 Anderson St  
New York, NY-10001  
USA

Email: abc@xyz.com

Phone Home: 123-456-7890  
Phone Work: 231-456-7890

Accounts

Account Number	Account Type	Available	Balance
294311310736	Checking	5400.0	6400.0

Customer Search Results

First Name	Last Name	SSN
Alice	Sheen	123-45-6789
John	Smith	333-22-2323
Jane	Doe	999-11-2839
John	William	123-45-6789
John	Carter	123-45-9876
Jane	Mary	999-11-2839
Karen	Mary	333-22-2323
Alfred	Garcia	469-57-8279
John	Walker	687-43-6587
Mike	Blair	745-98-6775

Account Details

Number: 294311310736 Type: Checking  
Balance: 6400.0 Available: 5400.0

Customers

John William 123-45-6789

Recent Transactions

Date	Transaction Type	Amount	Balance
11/4/04	Cash Withdraw	-4500.0	6400.0
11/4/04	Cash Deposit	900.0	10900.0
8/10/04	Cash withdraw	-500.0	10000.0

Account Search Results

Account Number	Account Type	Account Balance
294311310536	Checking	23099.0
294311310535	Savings	40198.0
294311310736	Checking	6400.0
294311310735	Savings	364344.0
294311310836	Checking	1000.0
294311310835	Savings	6000.0
3456876554328754	Visa	12934.0
4708294311310836	Mastercard	59.39
294322330936	Checking	2300.0
294322330935	Savings	3000.0

Deposit Withdraw

Account Number: 294311310736  
Transit Number: 12345  
Type: Checking  
Balance: 6400.0  
Available: 5400.0

Deposit Amount:

Deposit Type:  Cash  Check

Deposit

Extras | Shutdown | Logoff | Lockup | Task List | Change Password | Locale | Keyboard



# Maestro – NASA Space Mission Management

The screenshot displays the Maestro software interface, which is used for mission management. The main window shows an orbital view of the lunar surface with a green path and 34 numbered sites. A blue box highlights a specific area on the path. The right-hand side features an EDR Search View window with a table of product IDs, instruments, and sequence numbers.

**EDR Search View Table:**

Product ID	Instrument	Sol	Seq ...
2F134356767EFF2600P1212L0M1	FRONT_HAZCAM_LEFT	90	p1212
2F134449644EFF2700P1212L0M1	FRONT_HAZCAM_LEFT	91	p1212
2F134614869EFF2700P1403L0M1	FRONT_HAZCAM_LEFT	93	p1403
2F134615161EDN2700P1131L0M1	FRONT_HAZCAM_LEFT	93	p1131
2F135147950EDN2700P1131L0M1	FRONT_HAZCAM_LEFT	99	p1131
2F135148174ESP2700P1127L0M1	FRONT_HAZCAM_LEFT	99	p1127
2F135149189EDN2700P1141L0M1	FRONT_HAZCAM_LEFT	99	p1141
2F135149794EDN2700P1141L0M1	FRONT_HAZCAM_LEFT	99	p1141
2F135150380EDN2700P1141L0M1	FRONT_HAZCAM_LEFT	99	p1141
2F135150997EDN2700P1141L0M1	FRONT_HAZCAM_LEFT	99	p1141
2F135151610EDN2700P1141L0M1	FRONT_HAZCAM_LEFT	99	p1141
2F135152416EDN2700P1141L0M1	FRONT_HAZCAM_LEFT	99	p1141
2F135152602EFF2700P1212L0M1	FRONT_HAZCAM_LEFT	99	p1212
2F135153765EDN2700P1111L0M1	FRONT_HAZCAM_LEFT	99	p1111

# What do these have to do with OSGi?

- Implemented on top of OSGi
- OSGi component architecture is key
- Bundles assembled into applications





# Think beyond the device

- Server
- Neutron Beam Instruments
- Hand held
- Desktop
- Medical instruments
- Cars

**Everything is a device**  
**Focus on components**



# Components change the game

- Components enable composition
  - Isolate and insulate
  - Provide terminology for defining interaction
- NASA Maestro
  - Distributed development teams
  - Assemble applications/suites frequently and quickly
  - Control function availability
  - World-class features and function

# Demo

- Developing an RCP application
- Kiosk





# RCP Summary

- Rich set of functionality
  - Help, Update, COM/OLE, Reporting, ...
- Pervasive Plug-in/Bundle architecture
- Extensible
- Scalable
  - Supports large products (e.g., RAD, Lotus Workplace)
  - Scales down to embedded devices (eRCP, JCL/Foundation)
- Customizable (see examples)
- Dynamic

**OSGi-based  
Middleware for Applications**



# Reference Material

- Eclipse – <http://eclipse.org>
- RCP – <http://eclipse.org/rcp>
- Equinox – <http://eclipse.org/equinox>
- RCP Book – <http://eclipse.org/rcpbook>