

ORACLE®

Mike Donohue
Discoverer Product
Management
Oracle Corporation

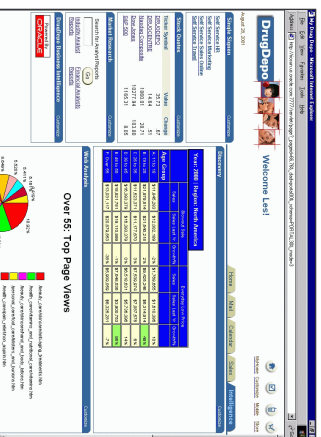
Oracle Discoverer 10g (9.0.4) Best Practices for Performance, Scalability and Troubleshooting

Oracle Discoverer 10g (9.0.4) – Best Practices

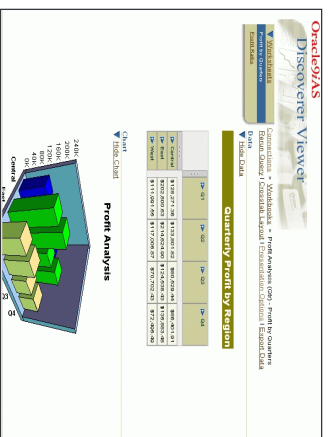
- Architecture
- Performance
- Scalability
- Troubleshooting

Architecture – OracleAS Discoverer

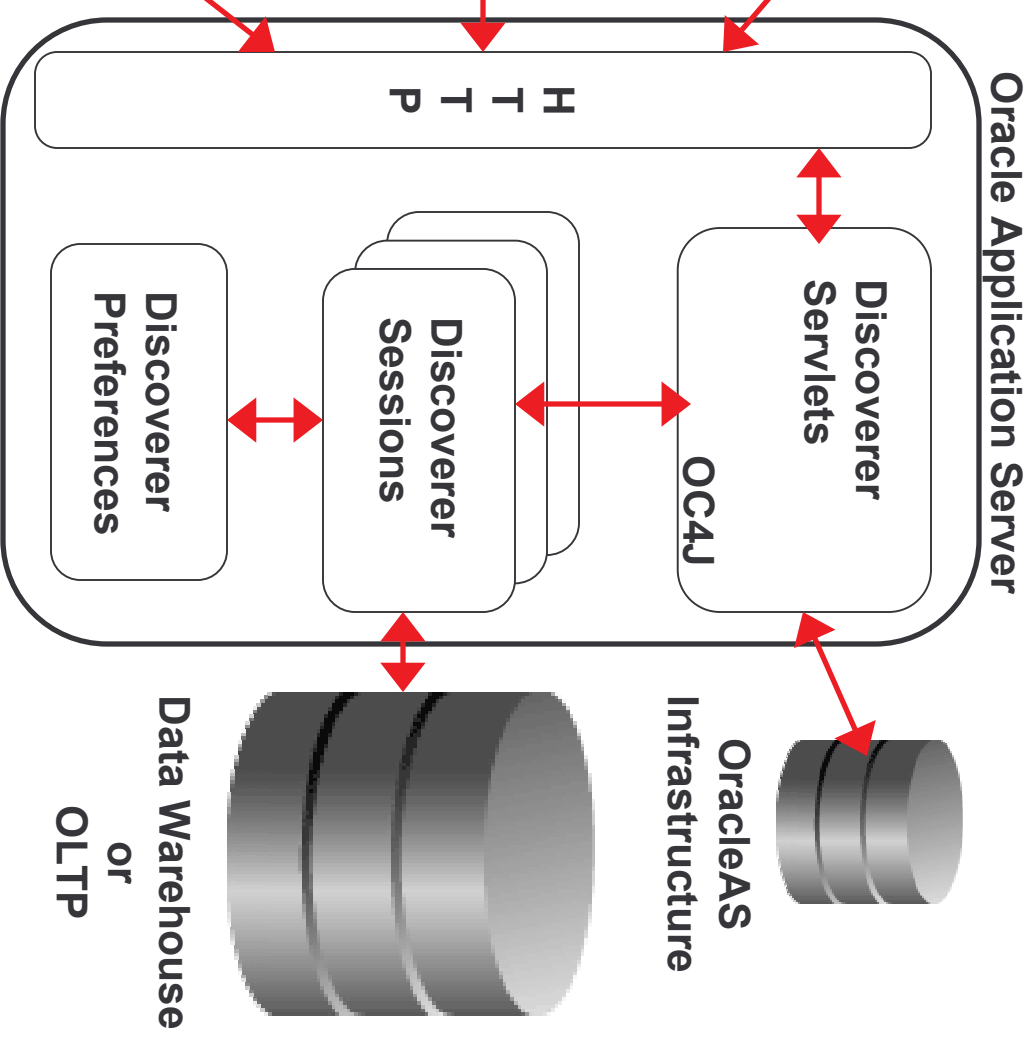
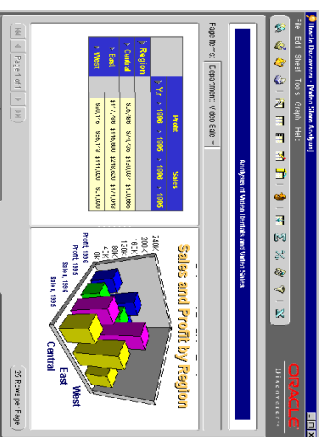
Discoverer Portlets



Discoverer Viewer



Discoverer Plus



Oracle Discoverer Best Practices

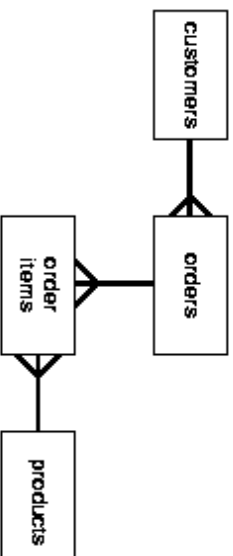
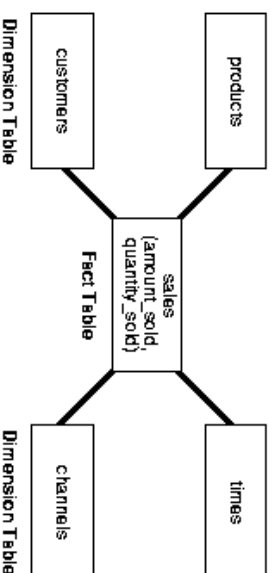
- Architecture
- **Performance**
- Scalability
- Troubleshooting

Performance

- Database
- Business Areas
- Worksheet design
- Discoverer configuration
- Oracle AS configuration

Performance – Database

- Star Schema over 3NF



- Indices
- Materialized Views
 - Database Server Summary Advisor
- Database Parameter Settings

Performance - Business Areas

- SQL Optimization in
 - OracleAS Discoverer 10g (9.0.4)
 - Folders: Simple & Complex first, then Custom
- Try to defer complex aggregation to Worksheet if possible

Performance - Worksheet design

- Table over Crosstab (if appropriate)
- Smart use of parameters and page items
 - parameters reduce data fetched
- Create worksheets that are “human-sized”
 - avoid wide crosstabs (Viewer)
- Remove extraneous worksheets from workbooks
 - reduce time to open
 - reduce time to export
- Use Query Statistics Workbook to identify Worksheets that need tuning

Performance - Worksheet design

The screenshot displays an Oracle worksheet interface. At the top, a navigation pane shows 'Worksheets' with options for 'Tabular Layout' and 'Crosstab Layout' (selected), and 'Sheet 3'. Below this, the 'Connections' pane shows the path 'Worksheets > Video Tutorial Workbook - Crosstab Layout'. The main area is titled 'Video Tutorial Workbook - Crosstab Layout' and includes buttons for 'Rerun Query', 'Presentation Options', 'Export', and 'Printable Page'. A 'Data' pane shows a pivot table with 'Department' (Video Rental) as the filter. The pivot table has 'Region' as the row field and 'Year' (1998, 1999, 2000) as the column fields. The values are summed for 'Profit SUM'.

Region	Profit SUM		
	1998	1999	2000
Central	\$47,204	\$43,813	\$25,157
East	\$71,756	\$67,249	\$40,402
West	\$39,395	\$37,777	\$23,521

Performance - Discoverer configuration

- **Viewer**
 - WebCache, Stylesheet Pool & Delay Times

Performance - Discoverer configuration

Viewer: WebCache, Stylesheet Pool & Delay Times

Discoverer Viewer Configuration

Discoverer Viewer is a read-only publishing tool that allows users to open workbooks created with Discoverer Plus or Discoverer Desktop. Users can view, drill down, drill out, pivot, sort, and change the layout of data.

Use WebCache
(Hint: Check this box if data at your site is not sensitive, changes infrequently, and is the same for many users.)

Viewer Logging

These logging options only apply to Discoverer Viewer.

Logging Level

[Return to Top](#)

Viewer Stylesheet Pool

Stylesheets can be preloaded into memory, and then pooled for reuse by subsequent requests. If all stylesheets are in use when a request comes in, another stylesheet will be loaded into memory until the maximum number of stylesheets is loaded.

Specify the number of stylesheets to preload (minimum) and the maximum number of stylesheets to allow:

- * Minimum Stylesheets
- * Maximum Stylesheets

TIP Restricting the number of stylesheets in the pool saves memory but causes requests to be queued for a short time if all stylesheets are in use. Generally a poolsize (maximum) equal to the number of CPUs in use gives the best results.

[Return to Top](#)

Viewer Delay Times

Specify the amount of delay time:

- * Query Progress Page (seconds)
- * Export (seconds)

Time to wait before returning the initial query progress page.
Frequency to check for export completion. This should typically be just less than the browser's timeout.

[Return to Top](#)

Performance - Discoverer configuration

- **Viewer**
 - WebCache, Stylesheet Pool & Delay Times
- **Portlet Provider**
 - Session Pool & Stylesheet Pool

Performance - Discoverer configuration

Portlet Provider: Stylesheet Pool & Delay Times

Discoverer Portlet Provider Configuration

The Discoverer Portlet Provider generates portlets for use on OracleAS Portal pages. Discoverer portlets can be created when setting up a Portal page.

[Cancel](#) [OK](#)

Discoverer Sessions

The Discoverer Portlet Provider uses Discoverer Sessions to update cached data for Discoverer Portlets. These Sessions can be pooled for reuse by different Discoverer Portlets, saving CPU and memory.

Specify the maximum number of Discoverer sessions to pool.

* Maximum Sessions

TIP Restricting the number of sessions in the pool saves memory but causes requests to be queued for a short time if all sessions are in use.

[Return to Top](#)

Portlet Provider Logging

These logging options only apply to Discoverer Portlet Provider.

Logging Level

Logging levels are listed in increasing amount of information logged.

[Return to Top](#)

Portlet Stylesheet Pool

Stylesheets can be preloaded into memory, and then pooled for reuse by subsequent requests. If all stylesheets are in use when a request comes in, another stylesheet will be loaded into memory until the maximum number of stylesheets is loaded.

Specify the number of stylesheets to preload (minimum) and the maximum number of stylesheets to allow.

* Minimum Stylesheets

* Maximum Stylesheets

TIP Restricting the number of stylesheets in the pool saves memory but causes requests to be queued for a short time if all stylesheets are in use. Generally a poolsize (maximum) equal to the number of CPUs in use gives the best results.

[Return to Top](#)

[Cancel](#) [OK](#)

[Logs](#) | [Preferences](#) | [Help](#)

Performance - Discoverer configuration

- **Viewer**
 - WebCache, Stylesheet Pool & Delay Times
- **Portlet Provider**
 - Session Pool & Stylesheet Pool
- **Set RowsPerFetch appropriately**
 - in prefs.txt overall
 - in Plus and Viewer Options per user

Performance - Discoverer configuration

Rows Per Fetch in Viewer and Plus

Query Governor

- Warn me if predicted query time exceeds: seconds
(Enter a value of between 1 and 999999)
- Prevent queries from running longer than:
(Enter a value of)
- Limit retrieved query data to:
(Enter a value of)
- Retrieve data incrementally in groups of:
(Enter a value of)
- Cancel list-of-values retrieval after:
(Enter a value of)

Options

Summary Data

Summary data can be set up by your Discoverer manager to improve performance.

When do you want to use summary data?

- Always, when available
- Only when summary data is not out of date (stale)
- Never

Query Governor

- Warn me if predicted query time exceeds: mins:secs
- Prevent queries from running longer than: mins:secs
- Limit retrieved query data to: rows
- Retrieve data incrementally in groups of: rows
- Cancel list-of-values retrieval after: mins:secs

Help OK Cancel

Performance - Discoverer configuration

- **Viewer**
 - WebCache, Stylesheet Pool & Delay Times
- **Portlet Provider**
 - Session Pool & Stylesheet Pool
- **Set RowsPerFetch appropriately**
 - in prefs.txt overall
 - in Plus and Viewer Options per user
- **Session timeout values for Plus and Viewer**

Performance - Oracle AS configuration

- OC4J JVM memory settings
- OC4J number of JVMs
 - machine resources permitting, 1 per 2 CPUs

Performance - Oracle AS configuration

OC4J JVM Memory Settings

ORACLE Enterprise Manager 10g
Application Server Control

Farm > Application Server: BIF_904_Prod/dwsun80.us.oracle.com > OC4J: OC4J_BI_Forms > Server Properties

Server Properties

General

Name **OC4J BI_Forms**

OC4J JVM Memory Settings

Multiple VM TIP If OC4J

OC4J Options `-properties -userThreads java Options /u/p:/vol04/AS9.0.4/BIF_904_Prod/broker4/lib/objboot.jar -Xmx512M`

Select Name	Value
<input checked="" type="radio"/> DISPLAY	localhost:0
<input type="radio"/> LD_LIBRARY_PATH	/u/p:/vol04/AS9.0.4/BIF_904_Prod/lib:/vol

Environment Variables

Related Tracing Links Properties

Revert Apply

Oracle Discoverer Best Practices

- Architecture
- Performance
- **Scalability**
- Troubleshooting

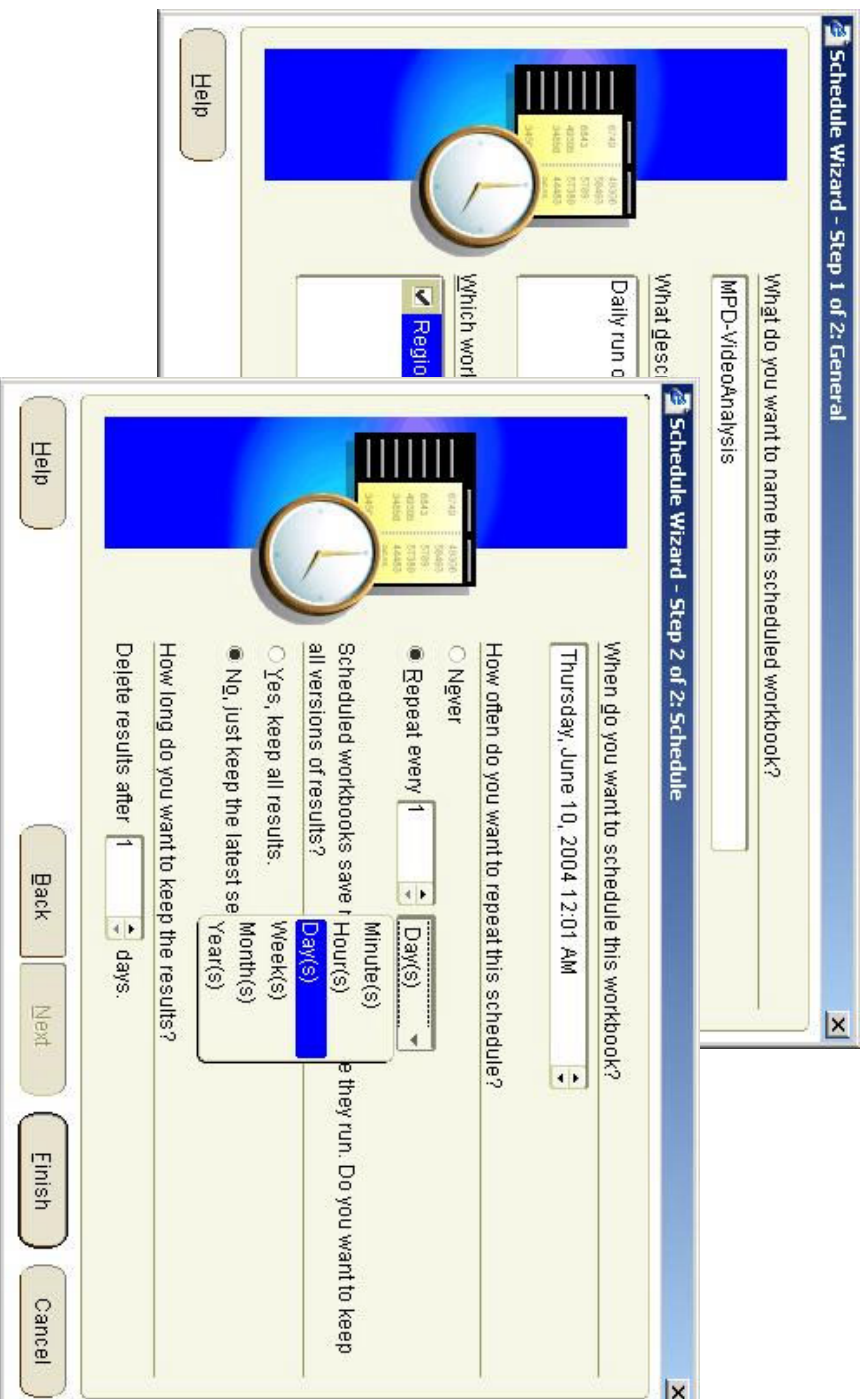
Scalability

- Deployment Considerations
- Load Balancing

Scalability - Deployment

- Consider user population, uses and right mix
 - Portlet Provider
 - Viewer
 - Plus
- Scheduling

Scalability - Deployment Scheduling



Scalability - Load Balancing

- Install Oracle AS Discoverer on multiple machines
 - Oracle AS WebCache
 - Commercial HTTP/IP Router load balancers

Oracle Discoverer Best Practices

- Architecture
- Performance
- Scalability
- **Troubleshooting**

Troubleshooting

- checkdiscoverer script
- Monitor Performance
- Enable Logging

Troubleshooting - checkdiscoverer

- Use when nothing works
- Checks
 - Discoverer Activation processes
 - OAD and OSAgent
 - Discoverer Session
 - Discoverer Preferences
 - NICs
- collectlogs script

Troubleshooting - Monitor Performance

- Use Application Server Control
 - Discoverer Services

Troubleshooting - Monitor Performance Services

ORACLE Enterprise Manager 10g
Application Server Control

Farm > Application Server: M5test.insn113e.idc.oracle.com > Discoverer

Components Related Links

Discoverer

Home Performance

Page Refreshed Jun 9, 2004 2:58:40 PM

Discoverer Sessions

Sessions 3

Display Top 10 CPU Usage All Sessions

Session ID	OS Process ID	Component	Total CPU Usage (%)	Total Memory Usage (MB)	DBUser@DB - FULL	SSO User	View Log
2004060904571012301	12301	Portlet Provider		14.21	TEST@oradisc	guestuser	
2004060904430410754	10754	Portlet Provider		13.12	VIDE031_ASK@oradisc	guestuser	
2004060904355510015	10015	Plus		9.89	VIDE031_ASK@oradisc		

Troubleshooting - Monitor Performance

- Use Application Server Control
 - Discoverer Services
 - Discoverer Components
 - Plus
 - Viewer
 - Portlet Provider

Troubleshooting - Monitor Performance Components

The screenshot displays the Oracle Enterprise Manager 10g Performance page for an Application Server Control. The breadcrumb trail is: Farm > Application Server: M5test.insn113e.idc.oracle.com > Discoverer > Discoverer Plus. The page title is "Discoverer Plus" and the sub-section is "Discoverer Plus Sessions". There is one session listed with a CPU usage of 0.0%. The page was refreshed on Jun 9, 2004 at 2:45:52 PM.

Home Performance Application Server Control ORACLE Enterprise Manager 10g Application Server Control Logs Preferences Help

Farm > Application Server: M5test.insn113e.idc.oracle.com > Discoverer > Discoverer Plus
Related Links

Discoverer Plus

Home Performance

Discoverer Plus Sessions

Sessions 1

Display Top CPU Usage All Plus Sessions

Session ID	OS Process ID	Total CPU Usage (%)	Total Memory Usage (MB)	DBUser@DB - EUL	SSO User	View Log
2004060904355510015	10015	0.0	8.13	VIDEO31_ASK@oradisc		

Page Refreshed Jun 9, 2004 2:45:52 PM

Troubleshooting – Enable Logging

- Use Application Server Control
 - Discoverer Services

Troubleshooting - Logging Services

[Return to Top](#)

Discoverer Services Logging

These logging options only apply to Discoverer Session processes on the Discoverer Services tier. For a more complete view of Discoverer Plus, Viewer or Portlet Provider activity, logging should also be enabled for the respective Discoverer component. These options are accessible from the component home pages.

Logging Level listed in increasing amount of information logged:

None
Error
Warning
Notification
Trace

[Logs](#) | [Preferences](#) | [Help](#)

Copyright ©1996, 2003, Oracle. All rights reserved.
[About Oracle Enterprise Manager 10g Application Server Control](#)

Troubleshooting – Enable Logging

- Use Application Server Control
 - Discoverer Services
 - Discoverer Components
 - Plus
 - Viewer
 - Portlet Provider

Troubleshooting - Logging Components

The screenshot displays the Oracle Enterprise Manager 10g Application Server Control interface. The top navigation bar includes 'ORACLE Enterprise Manager 10g', 'Application Server Control', and utility links for 'Logs', 'Preferences', and 'Help'. The main content area is divided into several sections:

- Discoverer Plus C**: A description of Discoverer Plus as an ad hoc and drill outs, pivot, sort, and Portlets.
- Communication Pr**: Radio buttons for 'Default' (selected), 'Tunneling', and 'Secure Tunneling'. A note states: 'This method only supports Discoverer Plus is a Java'. A red circle highlights the 'Secure Tunneling' option.
- Plus Logging**: A section titled 'These logging options on' with a table for 'Logging Level':

None
None
Error
Warm
Notify
Trace
- Log File: log2004060904355510015.xml**: A table of log file entries:

Log File	Component Name	Component Type	Modified	Size (bytes)
/home2/M5AS/discoverer/logs/log2004060904355510015.xml	Discoverer Server Process log	Discoverer	Jun 9, 2004 2:41:57 PM	16354
- Log File Contents**: A note: 'Below are the most recent log entries from the specified log file. A maximum of 100 log entries is displayed.' Below this is a 'Log Entry: June 9, 2004 4:35:55 AM GMT+05:00' with a table of details:

Component	Discoverer
Message Type	Unknown
Host Name	2004060904355510015
Message Level	0
- Message Text**: 'Logging Started'
- Supplemental Text**: XML code: '<MSG_GROUP><MSG_GROUP> <PROCESS_ID>10015</PROCESS_ID> <FILE_NAME> .jol1/ollo</LOG_TIME>Wed, Jun 9, 2004 4:35:55 AM GMT+05:00'.

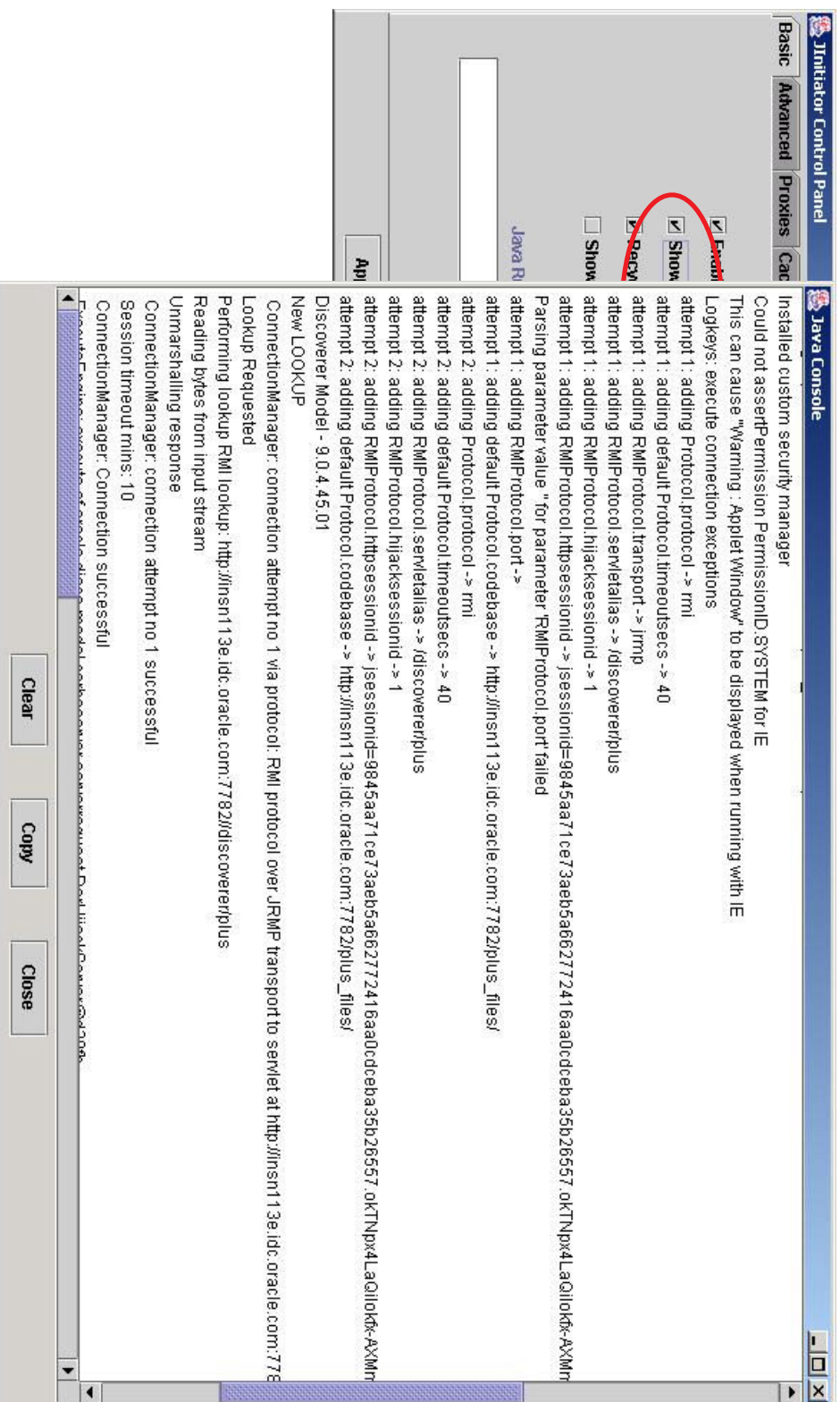
At the bottom left, there is a red bar with the 'ORACLE' logo.

Troubleshooting – Enable Logging

- Use Application Server Control
 - Discoverer Services
 - Discoverer Components
 - Plus
 - Viewer
 - Portlet Provider
- Plus Java Console

Troubleshooting - Logging

Plus Java Console



Best Practices - References

- Oracle® Application Server Discoverer Configuration Guide 10g (9.0.4)
 - http://download-west.oracle.com/docs/html/B10273_01/toc.htm
- Oracle® Discoverer Administrator Administration Guide 10g (9.0.4)
 - http://download-west.oracle.com/docs/html/B10270_01/toc.htm
- Oracle® Application Server 10g Performance Guide 10g (9.0.4)
 - http://download-west.oracle.com/docs/cd/B10464_02/core.904/b10379/toc.htm
- Oracle® Database Data Warehousing Guide 10g Release 1 (10.1)
 - http://download-west.oracle.com/docs/cd/B13789_01/server.101/b10736/toc.htm
- Diagnostics for Discoverer 10g (9.0.4)
 - <http://metalink.oracle.com/metalink/plsql/showdoc?db=NOT&id=273901.1>

FIN

ORACLE®

ORACLE®