

# RDC Troubleshooting Methods Tutorial



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# Acknowledgements

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- Many thanks to the OHSUG for this opportunity to present this tutorial.
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- Many thanks to everyone who participated in the development of this presentation.



# Assumptions/Scope/Disclaimer

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- Assumption: Audience has a basic understanding of the OLS 4.5.x/4.6.x architecture.
- Scope: OC 4.5.3/RDC 4.5.3/OC 4.6/RDC 4.6
- Disclaimer: These methods are for debugging production environment problems. They are not intended for bypassing security measures or regulatory policies, and nothing in this presentation should be construed as intended for such purposes.



## **Requirements for Debugging and Problem Analysis Within Production OLS environments (1)**

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- OLS production environments, especially those running RDC or with a global user base, have close to 24x7 usage and availability requirements.
- This type of environment increasingly presents problems and issues which must be debugged and analyzed in the production environment due to
  - critical time constraints
  - dependency on production infrastructure or components which are part of the issue
  - dependency on production data which does not exist elsewhere



## **Requirements for Debugging and Problem Analysis Within Production OLS environments (2)**

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- While creating refreshed copies/clones of the production environment and reproducing a production issue is the best analytical method, it is not always practical because:
  - Production environments are more complex and sometimes can not be duplicated 100% in their entirety in a test environment (such as load balanced servers, public-facing network components, secure data)
  - Sufficient infrastructure (such as disk space and servers) may not exist to make copies of the production environment
  - Downtime may be required to create production copies which may not be available
  - System Administrator/DBA/Application Administrator resources and availability may not exist or may not be available in time



## **Requirements for Debugging and Problem Analysis Within Production OLS environments (3)**

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- Executing many debugging techniques as documented can:
  - Cause short outages/downtimes which impact multiple users
  - Negatively impact performance for all users
  - Generate an excessive amount of debugging information/large logs, making it difficult to isolate a problem
- Having a way to debug a specific user's issue without effecting the production environment performance, causing downtime, or generating excessive debug files is a tremendous advantage in a production environment



# Method 1: Setting User Logon Triggers

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- Allows tracing of a session change to start at the time of the user logon
- Useful when:
  - an entire job submitted by a user needs to be traced
  - the user's session fails during the login process
  - a session modifiable parameter needs to be changed/tested at the user level
    - Very useful in performance tuning, when combined with local schema objects

## **Setting User Logon Triggers: Method (1)**

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- If the users themselves have CREATE TRIGGER privilege at the RDBMS level, a trigger can be compiled of the following form shown below.
- This example shows a tracing trigger than can be enabled for the specific user's session only.

```
connect ops$<USER>
create or replace trigger ops$<USER>.on_logon after logon on ops$<USER>.schema
declare
lcommand varchar(200);
begin
execute immediate 'alter session set max_dump_file_size=unlimited';
execute immediate 'alter session set timed_statistics=TRUE';
lcommand := 'alter session set events ''10046 trace name context forever, level 12'';
execute immediate lcommand;
end;
/
```





## Setting User Logon Triggers: Method (2)

- The trigger can be enabled at any time
  - `alter trigger ops$<user>.on_logon enable;`
- This is especially useful for job tracing if a user must first interactively log on, and then submit a job. The trigger is enabled only **AFTER** the user initially logs on

## **Setting User Logon Triggers: Method (3)**

- Be sure to disable or drop the trigger when tracing or testing is complete
  - alter trigger ops\$<user>.on\_logon disable;
  - drop trigger ops\$<user>.on\_logon;
- A Logoff trigger can also be defined to reverse any changes from the Logon Trigger:

```
create or replace trigger ops$<USER>.on_logoff before logoff on ops$<USER>.schema
declare
lcommand varchar(200);
begin
execute immediate 'alter session set timed_statistics=FALSE';
lcommand := 'alter session set sql_trace=false';
execute immediate lcommand ;
end;
/
```



## **Method 2: Setting User Logon Triggers: Isolating potential RDBMS changes (1)**

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- Sometimes, this method is extremely useful to isolate potential RDBMS level changes to a specific user, so that they can be tested at the user level before impacting an entire production RDBMS.
- Changes to optimizer settings can be evaluated in this way, and optimizer bugs can be isolated if setting a User Logon trigger changes the behavior of a specific function

## Method 2: Setting User Logon Triggers: Isolating potential RDBMS changes (2)

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- In the case below, the Cost-Based Optimizer (CBO) settings for index caching and index costing are being tested at the user level before being changed at the RDBMS level
- If a specific script or database object, such as view, is being tested for performance, a local copy can be made in OPS\$<USER>'s schema to evaluate these specific optimizer settings on that specific script or database object for isolated performance testing.

```
connect ops$<USER>
create or replace trigger on_logon after logon on ops$<USER>.schema
declare
  lcommand varchar(200);
begin
  execute immediate 'alter session set optimizer_mode=CHOOSE';
  execute immediate 'alter session set optimizer_index_caching=20';
  execute immediate 'alter session set optimizer_index_cost_adj=80';
  execute immediate 'alter session set optimizer_dynamic_sampling=4';
end;
/
```



## **Method 3: Cross Referencing Desktop Client session to Application Tier to RDBMS (1)**

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- The Windows process ID is the same as the first part of the process column in v\$session in the RDBMS level.
- in environments where multiple Middle Tiers can connect to the same instance, when querying v\$session, be sure to include:
  - username
  - process
  - program
  - AND terminal column
- This allows the correct identification of the Middle Tier and the correct forms executable process

## **Method 3: Cross Referencing Desktop Client session to Application Tier to RDBMS (2)**

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- The second part of the process column is the Windows thread id.
- The thread ID can NOT be seen through the normal Task Manager process list and different utilities are required to see the thread ID.
- The OS-level process ID can be identified by joining PADDR in v\$session to ADDR in v\$process.
- The SPID is the process ID of the corresponding TNS listener process on the RDBMS Server if Dedicated Listener is being used.

# PROBLEM: Page Does not Open

The screenshot shows the Oracle RDC Onsite: Data Entry application interface. The main content area contains a form with fields for Doc#, Visit Name, Study Name, Visit#, Patient, Site, Investigator, and Comment. Below these fields are checkboxes for Inclusion Criteria (YES/NO). An error dialog box is overlaid on the form, displaying the following message:

**Error**  
This application has encountered a fatal error and will shut down.  
XMLHttpRequest failed: 4714124725 (Servlet error: IO Exception.  
Unable to proceed further.)

A red arrow points from the error message to a larger red text overlay below it:

**This application has encountered a fatal error and will shut down. XML Http request failed: 4714124725 (Servlet error: IO Exception. Unable to proceed further.)**



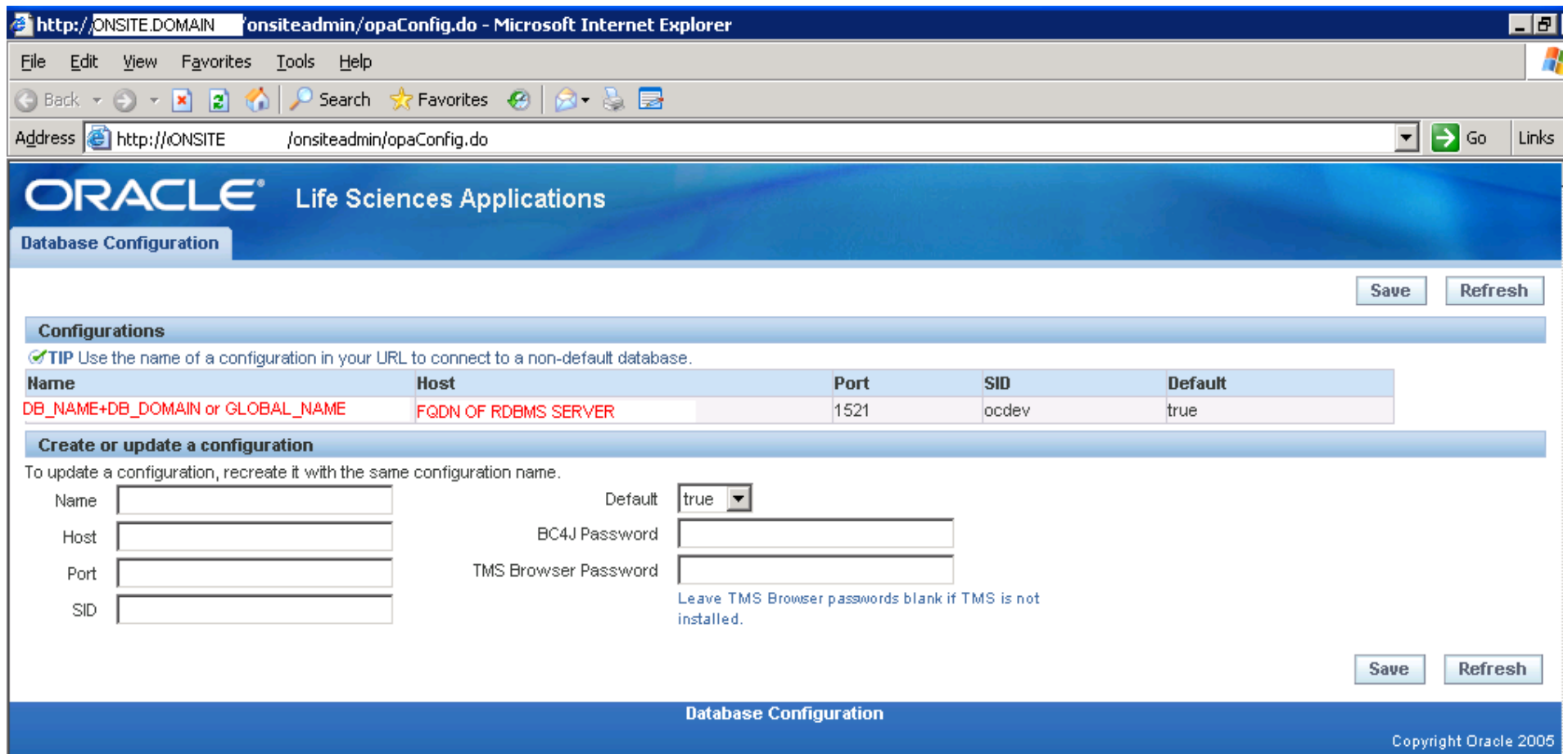
## Method 4:

### RDC 4.5.3 Individual URL debugging (1)

- All parameters listed here are from: **Metalink DocID: 400219.1: Configuration/Debug for RDC OnSite**
- The general URL is of the form:
  - `http://<Middle_Tier.domain>/olsa/oc/rdcLogin.do?event=doSetup&db=<OPA_CONFIG_NAME>&debug=<options>`
- This url also support additional debug parameters with &debug added to the end of the URL:
  - dcapi (Debug DCAPI, similar to OPA\_DCAPI\_PDF\_DEBUG registry key = Y)
    - `%OPA_HOME%\log\dcapiHtml_<userid>_<ts>.dbg`
    - `%OPA_HOME%\log\dcapiJaveDebug_<userid>_<ts>.dbg`
  - surround (Debug the Servlet, similar to setting the debug in the web.xml file)
    - `%OPA_HOME%\log\RdcOnsite0.xml`
  - all (Enable both dcapi and surround and opa\_trace)




# **Configuration Name for RDC OnSite Debugging**



[Save](#)   [Refresh](#)

**Configurations**

 **TIP** Use the name of a configuration in your URL to connect to a non-default database.

Name	Host	Port	SID	Default
DB_NAME+DB_DOMAIN or GLOBAL_NAME	FQDN OF RDBMS SERVER	1521	ocdev	true

**Create or update a configuration**

To update a configuration, recreate it with the same configuration name.

Name:   
 Host:   
 Port:   
 SID:

Default:   
 BC4J Password:   
 TMS Browser Password:

Leave TMS Browser passwords blank if TMS is not installed.

[Save](#)   [Refresh](#)

Copyright Oracle 2005



## Method 5: Review Debug Files on the RDC ONSITE Server (1)

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```
rdconsite0.xml.14Oct2008
RdcOnsite0.xml
DcapiHtml_ops$opapps_1223982406609_dbg
1869495750616775704.log
DcapiJava_ops$opapps_1223982406609_dbg
de log0.log
```

- RdcOnsite0.xml: This is a continuous log with all errors encountered in the RDC OnSite spreadsheet historically kept.
  - A backup copy is required to open the .xml file in wordpad while OnSite is running



## **Method 5: Review Debug Files on the RDC ONSITE Server (2)**

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- Delog0.xml: Contains J-Initiator like servlet-errors, also historically kept, usually related to disconnections of a data entry page
  - A backup copy is required to open the .xml file in wordpad while OnSite is running
- olsardcapi.dll authentication log: Contains specific arguments to the calls to the Java Servlet functions and their result

# Errors from DcapiHtml and DcapiJava Debug file

```
DcapiHtml_ops$opapps_1223982406609 - Notepad
File Edit Format View Help
Tue Oct 14 06:06:52.250 2008 : ----- In populateCrfDetails
Tue Oct 14 06:06:52.281 2008 : Error returned from database : Error - No record found
---- In validate_pdf_dcapi_call, status is 1, strlen of combinedresponsestring is 0
      Function getCrfDetails returned error -1:Error returned from database : Error - No record
found
of type 0.
---- End of validate_pdf_dcapi_call, PdfDcapiFailure is 1, PdfDcapiWarning is 0

---- In handle_pdf_dcapi_status ..., PdfDcapiFailure is 1, PdfDcapiWarning is 0,
PdfDcapiReturnDiscrep
is 0, DcapiRedisplayVal is 0
      In handle_pdf_dcapi_status combinedresponsestring is 80getCrfDetails - -1:Error returned
from
database : Error - No record found|
.
---- End of handle_pdf_dcapi_status ret_status is 1
```

```
DcapiJava_ops$opapps_1223982406609 - Notepad
File Edit Format View Help
[Tue, Oct 14, 2008 at 06:06:52 CDT] [DCAPI Debug 90381] Calling sendAndReceiveMessage
[Tue, Oct 14, 2008 at 06:06:52 CDT] [DCAPI Debug] Inside sendAndReceiveMessage
[Tue, Oct 14, 2008 at 06:06:52 CDT] [DCAPI Debug] Inside sendData
[Tue, Oct 14, 2008 at 06:06:52 CDT] [DCAPI Debug] Failed to send message(Connection reset by peer:
socket write error). will try to reconnect and send message again
[Tue, Oct 14, 2008 at 06:06:53 CDT] [DCAPI Debug] Inside method - disconnect (force = true)
[Tue, Oct 14, 2008 at 06:06:53 CDT] [DCAPI Debug 90381] Calling sendAndReceiveMessage
[Tue, Oct 14, 2008 at 06:06:53 CDT] [DCAPI Debug] Inside sendAndReceiveMessage
[Tue, Oct 14, 2008 at 06:06:53 CDT] [DCAPI Debug] Inside sendData
[Tue, Oct 14, 2008 at 06:06:53 CDT] [DCAPI Debug] Inside close of DcapiMessenger
```



## Method 5 continued:

### RDC 4.5.3 Individual URL debugging (2)

- OPA\_TRACE package can be invoked with:
  - `http://<Middle_Tier.domain>/olsa/oc/rdcLogin.do?event=doSetup&db=<OPA_CONFIG_NAME>&opaTrace=TRUE&debug=<options>`
- Populates entries in the OPA\_DEBUG table (see `opadebug_verbose.log`)
- Enable session level SQL Tracing
  - `http://<Middle_Tier.domain>/olsa/oc/rdcLogin.do?event=doSetup&db=<OPA_CONFIG_NAME>&sqlTrace=TRUE&debug=<options>`
  - May not have bind variables available
  - Useful since RDC 4.5.3 and TMS 4.6 create multiple sessions for each new page/form



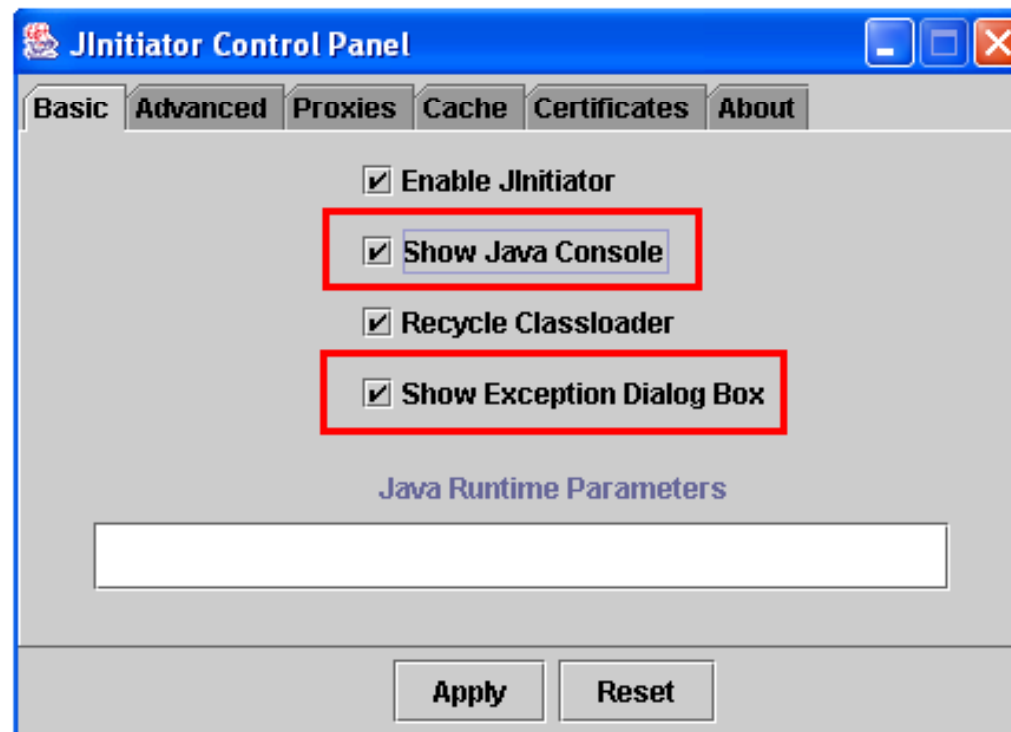
## **Logon Triggers for more precise SQL tracing**

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- Compile trigger for a specific user but make the trigger disabled
- Log into RDC/TMS/AERS with a normal URL: NO DEBUGGING OPTION
- BEFORE opening page or form with error, ENABLE the trigger
- AFTER opening page or form, DISABLE the trigger
- Copy the .trc file immediately to prevent further writes

# Java Console Debugging

- For 9i Forms, located in the Control Panel for 1.3.x Java versions (TMS 4.6/AERS 4.6)
- Console and Show Exception dialogue can be enabled:





## Method 6: Network-Based http debugging (1)

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- More sophisticated network debugging can be used with http level trapping tools such Paros Proxy
  - Paros Proxy is a free tool completely written in Java
  - All HTTP and HTTPS data between server and client, including cookies and form fields, can be intercepted and modified
  - <http://www.parosproxy.org/>
- Each argument for servlet communication can be analyzed when examining an issue, for example, a specific CRF page not opening in RDC Onsite





## **Method 6:**

# **Network-Based http debugging (2)**

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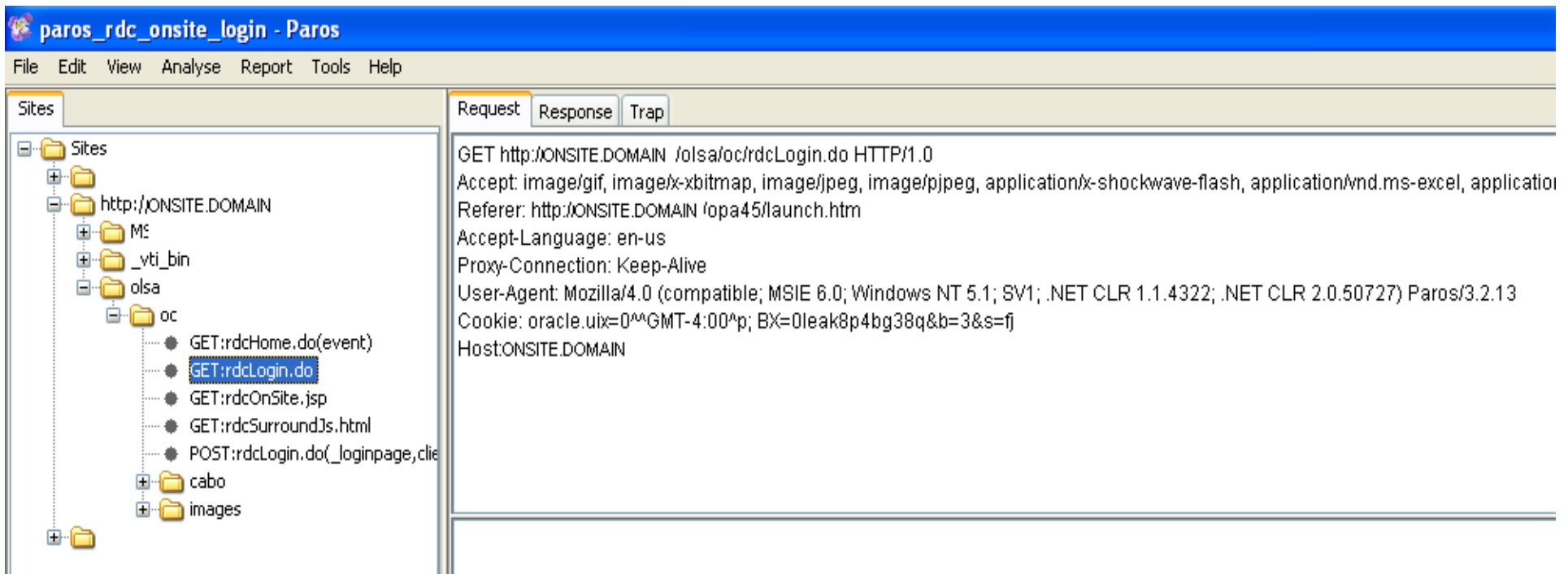
- Combine with the debug options to determine if the issue is related to the:
  - Study Design
  - Data
  - Application
- The key is to set the IE Browser to have a proxy of 127.0.0.1 while Paros is running
  - This traps the browser traffic and then sends it to the application tier destination

# Set the local proxy Server to 127.0.0.1:80

The image shows two overlapping Windows dialog boxes. The background box is 'Internet Options' with the 'Connections' tab selected. It shows a list of dial-up connections: 'AT&T Dial-up Pennington NJ USA' and 'NationalAccess - BroadbandAccess'. Under 'Local Area Network (LAN) settings', there is a 'LAN Settings...' button. The foreground box is 'Local Area Network (LAN) Settings'. It has a section for 'Automatic configuration' with two unchecked checkboxes: 'Automatically detect settings' and 'Use automatic configuration script'. Below this is an empty 'Address' text box. The 'Proxy server' section has a checked checkbox 'Use a proxy server for your LAN (These settings will not apply to dial-up or VPN connections)'. Below this, the 'Address' field is set to '127.0.0.1' and the 'Port' field is set to '8080'. There is also an unchecked checkbox 'Bypass proxy server for local addresses'. At the bottom are 'OK' and 'Cancel' buttons. A red watermark 'DBMS Consulting Training and Documentation' is visible at the bottom of the screenshot.

# Sample Output from Paros

- Each http request and response is logged with the FULL URL actually passed to OLS
- These requests can be stored or modified to debug specific URL-related issues



The screenshot displays the Paros Proxy application window titled "paros\_rdc\_onsite\_login - Paros". The interface includes a menu bar (File, Edit, View, Analyse, Report, Tools, Help) and a "Sites" tree on the left. The tree shows a hierarchy of sites, with the selected site being "http://ONSITE.DOMAIN". Underneath, there are folders for "ME", "\_yti\_bin", and "olsa". The "olsa" folder is expanded to show a sub-folder "oc" containing several GET requests and a POST request. The selected request is "GET:rdcLogin.do".

The main pane shows the details of the selected request, with tabs for "Request", "Response", and "Trap". The "Request" tab is active, displaying the following information:

```
GET http://ONSITE.DOMAIN /olsa/oc/rdcLogin.do HTTP/1.0
Accept: image/gif, image/x-bitmap, image/jpeg, image/pjpeg, application/x-shockwave-flash, application/vnd.ms-excel, application/msword, application/x-ms-application, application/xhtml+xml, application/vnd.ms-xsl+xml, application/xhtml+xml, application/vnd.ms-xsl+xml
Referer: http://ONSITE.DOMAIN /opa45/launch.htm
Accept-Language: en-us
Proxy-Connection: Keep-Alive
User-Agent: Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.1; SV1; .NET CLR 1.1.4322; .NET CLR 2.0.50727) Paros/3.2.13
Cookie: oracle.uix=0^GMT-4:00^p; BX=0leak8p4bg38q&b=3&s=fj
Host:ONSITE.DOMAIN
```

# Identify specific failing request and response

The screenshot shows the 'paros\_rdc\_onsite\_login2 - Paros' application window. The 'Response' tab is active, displaying the following details:

```

HTTP/1.1 200 OK
Cache-control: max-age=63072000
Expires: Mon, 11 Oct, 2010 10:54:08 -0500
Content-Type: text/html
Set-Cookie: JSESSIONID=0ab40f0330d83763359f77284d5abf26b73bca93dd19.e3uNbxqOcheSe34MbN0QbNqTbhn0n6jAmIjGr5XDqQLypAe; path=/olsa/oc
Connection: Close
Server: Oracle-Application-Server-10g/10.1.2.0.2 Oracle-HTTP-Server OracleAS-Web-Cache-10g/10.1.2.2.0 (N;ecid=965604018556,0)
Content-Length: 22652
Date: Tue, 14 Oct 2008 13:30:42 GMT
    
```

The HTML content includes a form element:

```

<div class="PageDivider" id="pagenum_1" style="width:792pt;">page 1 </div>
<div class="CRF" id="page_1" style="width:792pt;height:612pt;">
  <div id="body_1" style="position:absolute;z-index:1;left:54pt;top:36pt;width:684pt;height:540pt;">
    <v:rect style="left:568.7pt;top:46.4pt;width:82pt;height:16pt;" filled="false"/>
    <input type="text" style="left:568.7pt;width:82pt;top:46.4pt;height:16pt;font-size:9pt;font-family:Arial;text-align:left;" tabindex="12" maxlength="200" name="RDCIDCI_
    d="RDCIDCI_TIME_I0" gPos="9"/> <div class="highlighter" id="RDCIDCI_TIME_I0_h1" style="left:568.7pt;width:83pt;top:46.4pt;height:17pt;" ></div> <v:rect style="left:85.0pt
    pt,width:72pt,height:16pt;" filled="false"/>
    
```

The network log table below shows the sequence of requests:

Line	Method	URL	Response Code	Response	Time
71	GET	http://jolsa/oc/de/shell_onsite_4.5.3.10.6_2704914271_0_.html	200 OK		7703ms
73	GET	http://jolsa/oc/cabo/js/Libs/Common2_3_6.js	304 Not Modified		266ms
74	GET	http://jolsa/oc/de/css/Shell_4.5.3.10.6.css	200 OK		765ms
76	GET	http://jolsa/oc/de/css/CRF_4.5.3.10.6.css	200 OK		750ms
77	GET	http://jolsa/oc/cabo/images/swanft.htm	304 Not Modified		281ms
78	GET	http://jolsa/oc/de/css/VML_4.5.3.10.6.css	200 OK		344ms
79	GET	http://jolsa/oc/de/css/SVG_4.5.3.10.6.css	200 OK		250ms
80	GET	http://jolsa/oc/de/css/Print_4.5.3.10.6.css	200 OK		266ms
81	GET	http://jolsa/oc/de/css/UIBlocker_4.5.3.10.6.css	200 OK		266ms
82	GET	http://jolsa/oc/de/css/Calendar_4.5.3.10.6.css	200 OK		406ms
83	GET	http://jolsa/oc/de/js/OLSRDC_4.5.3.10.6.js	200 OK		35031ms
92	GET	http://jolsa/oc/de/js/clientParams_4.5.3.10.6.js	200 OK		531ms
124	GET	http://jolsa/oc/de/blank.htm	200 OK		235ms
125	POST	http://jolsa/oc/de/derun	200 OK		1313ms
126	GET	http://ONSITE.DOMAIN/olsa/oc/de/derun?c0=getHtmlForCRF&p0=%7B%22cid%22%3A%2230101%22%2C%22dcVersion%22%3A%221%2...	200 OK		844ms
145	GET	http://jolsa/oc/de/css/Dialon_4.5.3.10.6.css	200 OK		609ms

## **Method 7: Forms 9i Debugging (1)**

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- Enable trace with:
  - `http://<Middle_Tier.Domain>/forms/frmservlet?config=opa46&record=forms&tracegroup=0-199`
- Perform actions which require tracing
- Examine `forms_<PID>.trc` in `%ORA_10gMT_HOME%\forms\trace`

## **Method 7: Forms 9i Debugging (2)**

---

- Parse the trace files with:
  - set ORACLE\_HOME=<ORA\_10gMT\_HOME>
  - set  
CLASSPATH=%ORA\_10gMT\_HOME%\forms\java\frmxmlate.jar;  
%ORA\_10gMT\_HOME%\forms\java\f90all.jar
  - FOR XML: %ORA\_10gMT\_HOME%\jdk\bin\java  
oracle.forms.diagnostics.Xlate Datafile=forms\_<PID>.trc  
Outputfile=forms\_<PID>.xml OutputClass=WriteOut
  - FOR HTML: %ORA\_10gMT\_HOME%\jdk\bin\java  
oracle.forms.diagnostics.Xlate Datafile=forms\_<PID>.trc  
Outputfile=forms\_<PID>.html OutputClass=WriteOutHTML



# **Additional Debugging Methods for RDC Session Level errors**

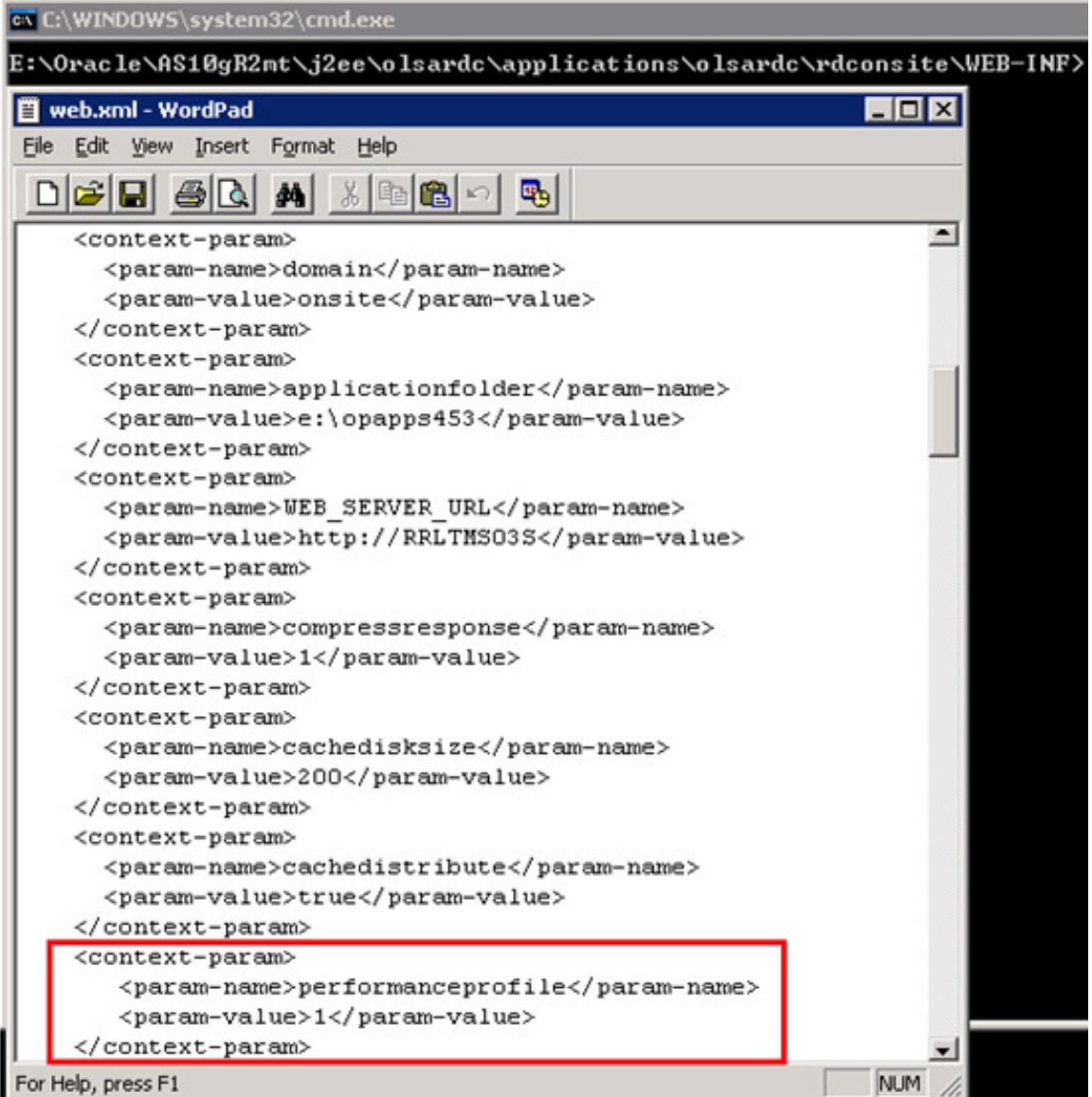
---

- System Profiling
  - Provides excellent timing metrics for each actual page
    - Add: `?event=doSetup&deparams=profile:1`  
to the RDC URL
- Enable DE general logging
  - Modify `dataentrylogger.properties` file
  - Set `level=FINE` or `FINER` or `FINEST` for advanced debugging, default to `WARNING`
- Excellent documentation reference:
  - RDC 4.6 Administration Guide: DocID: 859750.1, Section 14.5, "Debugging the RDC OnSite Application" and 14.6 "Debugging Performance issues in the Data Entry Window"

 [https://RDCTier.domain /olsa/oc/rdcLogin.do?event=doSetup&deparams=xhrd:200,profile:1](https://RDCTier.domain/olsa/oc/rdcLogin.do?event=doSetup&deparams=xhrd:200,profile:1)

**Add this section to the URL**

## Method 7a: web.xml changes and URL for Session Profiling



```
C:\WINDOWS\system32\cmd.exe
E:\Oracle\AS10gR2nt\j2ee\olsardc\applications\olsardc\rdconsite\WEB-INF>
web.xml - WordPad
File Edit View Insert Format Help
<context-param>
  <param-name>domain</param-name>
  <param-value>onsite</param-value>
</context-param>
<context-param>
  <param-name>applicationfolder</param-name>
  <param-value>e:\opapps453</param-value>
</context-param>
<context-param>
  <param-name>WEB_SERVER_URL</param-name>
  <param-value>http://RRLTMS03S</param-value>
</context-param>
<context-param>
  <param-name>compressresponse</param-name>
  <param-value>1</param-value>
</context-param>
<context-param>
  <param-name>cachedisksize</param-name>
  <param-value>200</param-value>
</context-param>
<context-param>
  <param-name>cachedistribute</param-name>
  <param-value>true</param-value>
</context-param>
<context-param>
  <param-name>performanceprofile</param-name>
  <param-value>1</param-value>
</context-param>
```



# System Profile Example

```

<b>initialize</b> - [ Count: 1 ] [ Duration: <b>78</b> ]
  Timed Event : 1 [ <b>initialize_1</b> ] [ Duration : <b>78</b> ]<br>
<b>loadCrfDoc</b> - [ Count: 1 ] [ Duration: <b>4469</b> ]
  Timed Event : 1 [ <b>loadCrfDoc_1</b> ] [ Duration : <b>4469</b> ]
    <b>getHTML</b> - [ Count: 1 ] [ Duration: <b>4281</b> ]
      Timed Event : 1 [ <b>loadCrfDoc_1_getHTML_1</b> ] [ Duration : <b>4281</b> ]
        <b>getHtmlForCRF_getRemoteData</b> - [ Count: 1 ] [ Duration: <b>3094</b> ]
          Timed Event : 1 [ <b>loadCrfDoc_1_getHTML_1_getHtmlForCRF_getRemoteData_1</b> ] [ Duration : <b>3094</b> ]<br>
        <b>catchGetHtml</b> - [ Count: 1 ] [ Duration: <b>625</b> ]
          Timed Event : 1 [ <b>loadCrfDoc_1_getHTML_1_catchGetHtml_1</b> ] [ Duration : <b>625</b> ]<br>
        <b>collectFields</b> - [ Count: 1 ] [ Duration: <b>0</b> ]
          Timed Event : 1 [ <b>loadCrfDoc_1_getHTML_1_collectFields_1</b> ] [ Duration : <b>0</b> ]<br>
      <b>getJSON</b> - [ Count: 1 ] [ Duration: <b>3484</b> ]
        Timed Event : 1 [ <b>loadCrfDoc_1_getJSON_1</b> ] [ Duration : <b>3484</b> ]
          <b>cmdDocData_cmdPostInitialLoad_cmdGetSettings_cmdOpenConfirm_getRemoteData</b> - [ Count: 1 ] [ Duration: <b>3484</b> ]
            Timed Event : 1 [ <b>loadCrfDoc_1_getJSON_1_cmdDocData_cmdPostInitialLoad_cmdGetSettings_cmdOpenConfirm_getRemoteData_1</b> ] [ Duration : <b>3484</b> ]<br>
          <b>catchGetCrfJson</b> - [ Count: 1 ] [ Duration: <b>0</b> ]
            Timed Event : 1 [ <b>loadCrfDoc_1_getJSON_1_catchGetCrfJson_1</b> ] [ Duration : <b>0</b> ]<br>
        <b>reload</b> - [ Count: 1 ] [ Duration: <b>188</b> ]
          Timed Event : 1 [ <b>loadCrfDoc_1_reload_1</b> ] [ Duration : <b>188</b> ]
            <b>updateShellState0</b> - [ Count: 1 ] [ Duration: <b>141</b> ]
              Timed Event : 1 [ <b>loadCrfDoc_1_reload_1_updateShellState0_1</b> ] [ Duration : <b>141</b> ]
                <b>prevHighlight0</b> - [ Count: 1 ] [ Duration: <b>125</b> ]
                  Timed Event : 1 [ <b>loadCrfDoc_1_reload_1_updateShellState0_1_prevHighlight0_1</b> ] [ Duration : <b>125</b> ]<br>
            <b>initFields0</b> - [ Count: 1 ] [ Duration: <b>0</b> ]
              Timed Event : 1 [ <b>loadCrfDoc_1_reload_1_initFields0_1</b> ] [ Duration : <b>0</b> ]
                <b>field_deco_events</b> - [ Count: 1 ] [ Duration: <b>0</b> ]
                  Timed Event : 1 [ <b>loadCrfDoc_1_reload_1_initFields0_1_field_deco_events_1</b> ] [ Duration : <b>0</b> ]<br>
            <b>CallSetupPage0</b> - [ Count: 1 ] [ Duration: <b>16</b> ]
              Timed Event : 1 [ <b>loadCrfDoc_1_reload_1_CallSetupPage0_1</b> ] [ Duration : <b>16</b> ]<br>
          <b>highlightFields</b> - [ Count: 1 ] [ Duration: <b>93</b> ]
            Timed Event : 1 [ <b>highlightFields_1</b> ] [ Duration : <b>93</b> ]<br>
        <b>setupPage0</b> - [ Count: 1 ] [ Duration: <b>16</b> ]
          Timed Event : 1 [ <b>setupPage0_1</b> ] [ Duration : <b>16</b> ]<br>

```

# Method 7b: Server Profile Example

Server Profile Data				
Profile Name	Number of calls	Min. Time	Max. Time	Avg. Time
cmdApproveDoc	0	-	-	-
cmdRelVal	0	-	-	-
cmdDeleteDoc	0	-	-	-
cmdDocData	1	1532	1532	1532
cmdSetSettings	1	0	0	0
cmdUpdateField	0	-	-	-
cmdLov	0	-	-	-
cmdGetDiscrepancyDetails	0	-	-	-
cmdHelp	0	-	-	-
cmdGetDeleteDocDlgInfo	0	-	-	-
cmdGetUserNameForApproval	0	-	-	-
getConnection	7	0	157	22
InitController	1	1078	1078	1078
cmdPostInitialLoad	1	62	62	62
cmdContextHelp	0	-	-	-
getHtmlForCRFPages	0	-	-	-
cmdUpdateFieldDiscrepancy	0	-	-	-
cmdGetBlankFlagDlgInfo	0	-	-	-
cmdPreviousDoc	0	-	-	-
cmdUpdateFieldReasonPlusDiscrepancy	0	-	-	-
initializeDcapi	1	719	719	719
getHtmlForCRF	1	15	15	15
cmdVerifyDoc	0	-	-	-
cmdCrfHelp	0	-	-	-
cmdDrc	0	-	-	-

```

Untitled - Notepad
File Edit Format View Help
Profile Name Number of calls Min. Time Max. Time Avg. Time
cmdApproveDoc 0 - - -
cmdRelVal 0 - - -
cmdDeleteDoc 0 - - -
cmdDocData 1 1532 1532 1532
cmdSetSettings 1 0 0 0
cmdUpdateField 0 - - -
cmdLov 0 - - -
cmdGetDiscrepancyDetails 0 - - -
cmdHelp 0 - - -
cmdGetDeleteDocDlgInfo 0 - - -
cmdGetUserNameForApproval 0 - - -
getConnection 7 0 157 22
InitController 1 1078 1078 1078
cmdPostInitialLoad 1 62 62 62
cmdContextHelp 0 - - -
getHtmlForCRFPages 0 - - -
cmdUpdateFieldDiscrepancy 0 - - -
cmdGetBlankFlagDlgInfo 0 - - -
cmdPreviousDoc 0 - - -
cmdUpdateFieldReasonPlusDiscrepancy 0 - - -
initializeDcapi 1 719 719 719
getHtmlForCRF 1 15 15 15
cmdVerifyDoc 0 - - -
cmdCrfHelp 0 - - -
cmdDrc 0 - - -
cmdSaveDoc 0 - - -
generateRdcidata 1 1407 1407 1407
cmdGetHLFields 0 - - -
parseJson 1 31 31 31
cmdAvm 0 - - -
returnConnection 7 0 0 0
cmdCloseDoc 0 - - -
cmdGetDocJson 0 - - -
cmdAudit 0 - - -
createRdc 1 32 32 32
RuntimeController 3 0 1937 1250
getDialog 0 - - -
cmdGetSettings 1 125 125 125
getFromCache 1 15 15 15
cmdDeleteFieldRepeat 0 - - -
cmdAvh 0 - - -
cmdUpdateDisplayAlertMode 0 - - -
cmdInvHist 0 - - -
cmdSetPreferenceSettings 0 - - -
cmdNextDoc 0 - - -
cmdOpenConfirm 1 16 16 16
cmdUndoUpdateField 0 - - -
addToCache 1 15 15 15
cmdStdText 0 - - -
cmdUpdateBlankFlags 0 - - -
closeDcapi 0 - - -
cmdGetDhs 0 - - -
loadDciform 1 79 79 79
  
```

# Server Profile on 2 Pages

Server Profile Data				
Profile Name	Number of calls	Min. Time	Max. Time	Avg. Time
cmdApproveDoc	0	-	-	-
cmdRelVal	0	-	-	-
cmdDeleteDoc	0	-	-	-
cmdDocData	2	157	1532	844
cmdSetSettings	2	0	0	0
cmdUpdateField	0	-	-	-
cmdLov	0	-	-	-
cmdGetDiscrepancyDetails	0	-	-	-
cmdHelp	0	-	-	-
cmdGetDeleteDocDlgInfo	0	-	-	-
cmdGetUserNameForApproval	0	-	-	-
getConnection	13	0	157	12
InitController	2	16	1078	547
cmdPostInitialLoad	2	31	62	46
cmdContextHelp	0	-	-	-
getHtmlForCRFPages	0	-	-	-
cmdUpdateFieldDiscrepancy	0	-	-	-
cmdGetBlankFlagDlgInfo	0	-	-	-
cmdPreviousDoc	0	-	-	-
cmdUpdateFieldReasonPlusDiscrepancy	0	-	-	-
initializeDcapi	2	0	719	359
getHtmlForCRF	2	15	31	23
cmdVerifyDoc	0	-	-	-
cmdCrfHelp	0	-	-	-
cmdDrc	0	-	-	-

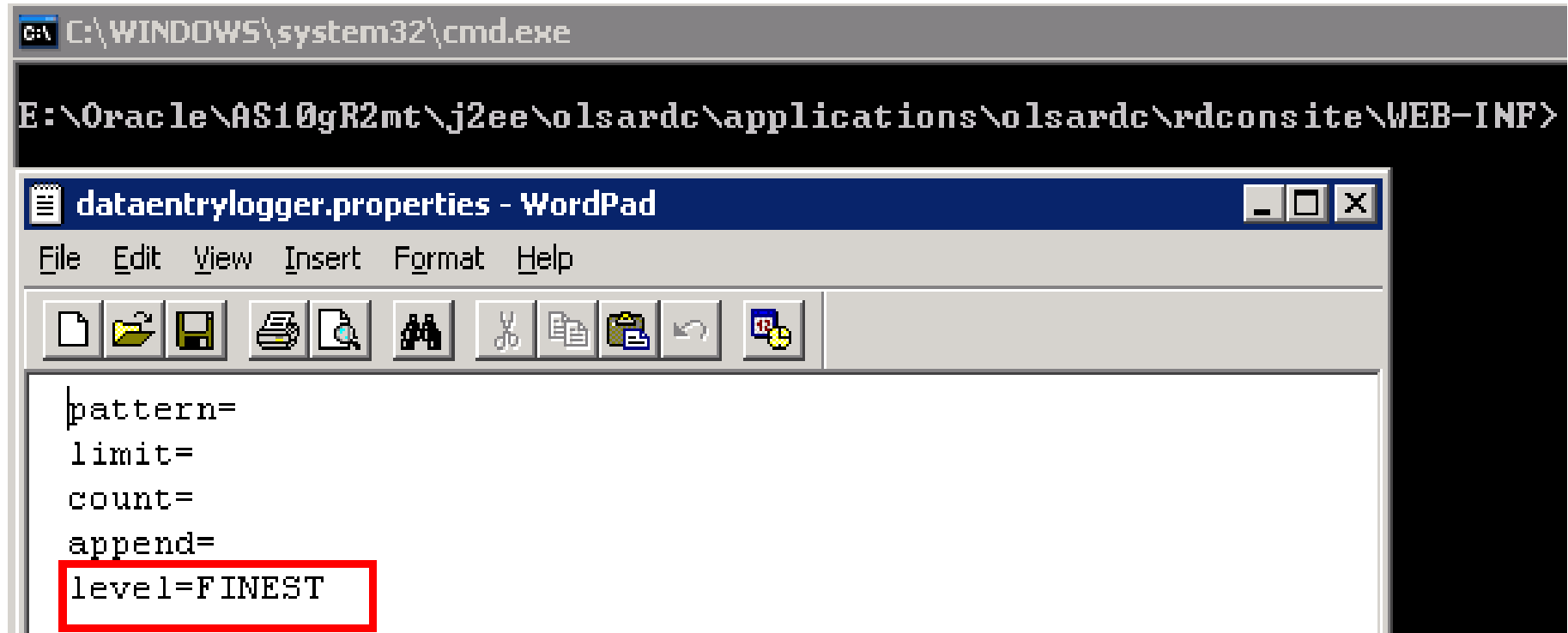
```

Untitled - Notepad
File Edit Format View Help
Server Profile Data
Profile Name Number of calls Min. Time Max.
Time Avg. Time
cmdApproveDoc 0 - - -
cmdRelVal 0 - - -
cmdDeleteDoc 0 - - -
cmdDocData 2 157 1532 844
cmdSetSettings 2 0 0 0
cmdUpdateField 0 - - -
cmdLov 0 - - -
cmdGetDiscrepancyDetails 0 - - -
cmdHelp 0 - - -
cmdGetDeleteDocDlgInfo 0 - - -
cmdGetUserNameForApproval 0 - - -
getConnection 13 0 157 12
InitController 2 16 1078 547
cmdPostInitialLoad 2 31 62 46
cmdContextHelp 0 - - -
getHtmlForCRFPages 0 - - -
cmdUpdateFieldDiscrepancy 0 - - -
cmdGetBlankFlagDlgInfo 0 - - -
cmdPreviousDoc 0 - - -
cmdUpdateFieldReasonPlusDiscrepancy 0 - - -
initializeDcapi 2 0 719 359
getHtmlForCRF 2 15 31 23
cmdVerifyDoc 0 - - -
cmdCrfHelp 0 - - -
cmdDrc 0 - - -
cmdSaveDoc 0 - - -
generateRdcData 2 125 1407 766
cmdGetHLFields 0 - - -
parseJson 2 31 32 31
cmdAvm 0 - - -
returnConnection 13 0 0 0
cmdCloseDoc 1 79 79 79
cmdGetDocJson 0 - - -
cmdAudit 0 - - -
createRdc 2 0 32 16
RuntimeController 7 0 1937 582
getDialog 0 - - -
cmdGetSettings 2 0 125 62
getFromCache 2 15 31 23
cmdDeleteFieldRepeat 0 - - -
cmdAvh 0 - - -
cmdUpdateDisplayAlertMode 0 - - -
cmdInvHist 0 - - -
cmdSetPreferenceSettings 0 - - -
cmdNextDoc 0 - - -
cmdOpenConfirm 2 0 16 8
cmdUndoUpdateField 0 - - -
addToCache 2 15 31 23
cmdStdText 0 - - -
cmdUpdateBlankFlags 0 - - -
closeDcapi 0 - - -
cmdGetRhs 0 - - -

```

# Method 8: Modify dataentrylogger.properties to FINEST

---



```
C:\WINDOWS\system32\cmd.exe

E:\Oracle\AS10gR2mt\j2ee\olsardc\applications\olsardc\rdconsite\WEB-INF>

dataentrylogger.properties - WordPad
File Edit View Insert Format Help

pattern=
limit=
count=
append=
level=FINEST
```



# Previous delog0.xml has SEVERE messages only

---

```

<record>
  <date>2009-08-09T20:49:53</date>
  <millis>1249831193898</millis>
  <sequence>10</sequence>
  <logger>oracle.pharma.rdc.de.servlet.RuntimeController</logger>
  <level>SEVERE</level>
  <class>oracle.pharma.rdc.de.servlet.RuntimeController</class>
  <method>doPost</method>
  <thread>11</thread>
  <message>[4877170621] [90906744359246910] Exception in RuntimeController
oracle.pharma.rdc.de.exception.IllegalOperationException: The operation derun is illegal.
    Reason is: Window context/storage lost or missing on server.
    at oracle.pharma.rdc.de.servlet.RuntimeController.doPost(RuntimeController.java:268)
    at javax.servlet.http.HttpServlet.service(HttpServlet.java:760)
    at javax.servlet.http.HttpServlet.service(HttpServlet.java:853)
    at com.evermind.server.http.ServletRequestDispatcher.invoke(ServletRequestDispatcher.java:834)
    at com.evermind.server.http.ServletRequestDispatcher.forwardInternal(ServletRequestDispatcher.java:340)
    at com.evermind.server.http.HttpRequestHandler.processRequest(HttpRequestHandler.java:830)
    at com.evermind.server.http.AJPRequestHandler.run(AJPRequestHandler.java:228)
    at com.evermind.server.http.AJPRequestHandler.run(AJPRequestHandler.java:133)
    at com.evermind.util.ReleasableResourcePooledExecutor$MyWorker.run(ReleasableResourcePooledExecutor.java:192)
    at java.lang.Thread.run(Thread.java:534)
</message>
</record>
<record>
  <date>2009-08-09T21:41:50</date>
  <millis>1249834310050</millis>
  <sequence>17</sequence>
  <logger>oracle.pharma.rdc.de.servlet.RuntimeController</logger>
  <level>SEVERE</level>
  <class>oracle.pharma.rdc.de.servlet.RuntimeController</class>
  <method>doPost</method>
  <thread>12</thread>
  <message>[generic] User is not logged into Data Entry.</message>
</record>
<record>
  <date>2009-08-09T21:41:50</date>
  <millis>1249834310050</millis>

```

## Delog0.xml with FINEST enabled

```
<record>
  <date>2009-10-05T23:49:20</date>
  <millis>1254766760859</millis>
  <sequence>3</sequence>
  <logger>oracle.pharma.rdc.de.servlet.DataEntryServletHelper</logger>
  <level>FINE</level>
  <class>oracle.pharma.rdc.de.servlet.DataEntryServletHelper</class>
  <method>initDataEntryApp</method>
  <thread>10</thread>
  <message>[generic] Enter method.</message>
</record>
<record>
  <date>2009-10-05T23:49:21</date>
  <millis>1254766761187</millis>
  <sequence>4</sequence>
  <logger>oracle.pharma.rdc.de.servlet.DataEntryServletHelper</logger>
  <level>FINE</level>
  <class>oracle.pharma.rdc.de.servlet.DataEntryServletHelper</class>
  <method>initDataEntryApp</method>
  <thread>10</thread>
  <message>[generic] Exit method. Return Value: null</message>
</record>
<record>
  <date>2009-10-05T23:52:50</date>
  <millis>1254766970667</millis>
  <sequence>7</sequence>
  <logger>oracle.pharma.rdc.de.servlet.InitController</logger>
  <level>FINE</level>
  <class>oracle.pharma.rdc.de.servlet.InitController</class>
  <method>doGet</method>
  <thread>11</thread>
  <message>[generic] Enter method.</message>
</record>
<record>
  <date>2009-10-05T23:52:50</date>
  <millis>1254766970667</millis>
  <sequence>8</sequence>
  <logger>oracle.pharma.rdc.de.servlet.InitController</logger>
  <level>HIGH_VERBOSE</level>
  <class>oracle.pharma.rdc.de.servlet.InitController</class>
  <method>doGet</method>
  <thread>11</thread>
  <message>[generic] Forwarding to doPost</message>
</record>
```

Help, press F1

## **RDC 4.6 vs RDC 4.5.3 debug file comparisons**

---

- RDC 4.6 Administration Guide: DocID: 859750.1, Section 14.5, “Debugging the RDC OnSite Application”
- RDC 4.5.3 Administration Guide: DocID: 467191.1, Section 17.2, “Debugging RDC Onsite”



## **Method 9: Combine the analysis of the DE Session Profiling with possible performance tuning**

---

- Compare to Metalink ID: **550768.1**, Configuring RDC 4.5.3 for Performance and Scalability
  - Reference Metalink ID: 873743.1 Configuring Oracle Clinical Remote Data Capture Onsite 4.6 for Performance and Scalability
- Check for WebCache space allocation
- Check for local IE cache settings
- Possible implications for changing page design
- Possible implications for ON-LINE vs ON-LINE/DCM procedure categorization



## **Method 10: MDR troubleshooting (1)**

---

- For AS10g Infra Home (controls OID and the OEM HTTP listener)
  - OID can be manually restarted with oidctl
  - A new instance number can be set if oidctl does not start correctly. It could also be an issue with the ODS schema account in the MDR
  - Ldapbind must be run manually afterward
  - Then opmnctl startall should work

## **Method 10: MDR troubleshooting (2)**

---

- For the AS10g MT Home (controls OC4J olsardc applications)
  - MDR can be resynched with the Application Tier files or Application Tier can be resynched with MDR
  - dcmctl in shell mode is very useful for extended help
  - updateconfig -force -d <IAS\_INSTANCE>
    - Usually, force is required for updating .xml config files
  - resynchinstance -force -d <IAS\_INSTANCE>
    - Usually, force is required for updating MDR
  - olsardc can be removed and reinstalled
    - dcmctl removeComponent -co olsardc



# Question and Answers

---

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# Biographies (1)

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## Sunil G. Singh, President & CEO, DBMS Consulting, Inc.

- Sunil is a Global Oracle Health Sciences deployment expert for DBMS Consulting. He has been an active member of the OHSUG community since 1996 and is extremely grateful for this opportunity to make these presentations at OHSUG 2010.

## Jose Garcia, Vice President, DBMS Consulting, Inc.

- Jose is the VP of systems architecture and performance/capacity planning for DBMS Consulting. He is responsible for developing methodologies and standards and best practices for architecting high throughput enterprise class Oracle RDBMS based solutions. He is also responsible for developing methodologies for the troubleshooting of performance problems on Oracle RDBMS based systems. Jose has over 13 years of experience assisting clients in both the health and financial services sectors.



## Biographies (2)

---

Dr. Letian Liu, Director DBMS APAC, DBMS Consulting, Inc.

- Dr. Liu has recently moved back after 16 years in the US to Shanghai, to head the Asia Pacific operations for DBMS Consulting. Dr. Liu brings in 20 years of experience with clinical trials and data-management, Pharmaceutical R&D and applied chemistry. Prior to joining DBMS Consulting, Dr. Liu was technical lead for Oracle Clinical/ePower with Covance, and Senior Architect for Oracle Clinical/TMS/RDC/ePower/AERS/IRReview at Ingenix(i3); and as research scientist at REVLON. Dr. Lucy Liu holds a Ph.D. in Analytical Chemistry from The City University of New York, a BS degree in Engineering from Zhejiang University in China.

Jason Essig, Senior Siebel Architect Expert, DBMS Consulting, Inc.

- Jason is a Senior Siebel Architect Expert for DBMS Consulting, with 10+ years of Siebel configuration and architecture experience.