

# Middleware upgrade to Oracle FMW12c. Real Case stories.

## Andrey Chervonets (Андрей Червонец)

- working with Oracle products since 2001
- Senior technical expert, DBA (Oracle, DB2, MySQL, ...)
- Certified as:
  - Oracle Database Administrator (8i-11g)
  - Oracle Application Server Administrator (9i/10g)
  - Oracle WebLogic Administrator
  - IBM DB2 Database Administrator
- has founded SIA CoMinder un 2011:
  - to provide better DBA expert services
  - for customers interested in improvements

web: <http://www.cominder.eu/>

LinkedIn: <http://www.linkedin.com/in/andreychervonets>

# Agenda

- Project 1: to Oracle FMW 12.1.3
- Project 2: to Oracle Reports Server 12.2.1
- Summary.
- Q + A

# Introduction

## to Upgrade...

# Why this topic?!

- Software Continuous improvements (including Installation and Setup)
  - no more challenging work for DBA/Admin?
  - let's show
- Old Upgrade/Migration best practices – is it actual?:
  - **understand why do You (client, business, anyone) need this!**
  - read the documentation, release notes, etc.
  - understand the architecture of ALL
  - understand the risks
  - prepare:
    - › in advance
    - › test what is possible in testing environment
  - **production: use software Release 2... ?**
    - › **or at least PSU/Bundle 1... ?**

# “Friends” and “Enemies”

- What/Who can be the “friend” or the “enemy”:
  - Oracle Documentation ?!
  - Oracle Support (experts and MOS notes) ?!
  - Project Documentation ?!
  - Default settings
  - Your own experience
- **“Everything You do not know - is not Your favour!”**

# Project 1

Java apps, SOA upgrade...

- OLD:
  - OS: VM: Linux RHEL/OL 5.8/5.9 - (3 test + 3 prod)
  - FWM 11g
    - java: jrockit R28.2.2
    - WebLogic Server: 10.3.5
    - other: 11.1.n.n
  - DB: 11.2.0.3 (on HP-UX) – 2 PROD + 1 TEST (business data + FMW metadata in 1)
- NEW:
  - OS: VM: Oracle Linux 7.x (3 test + 3 prod)
  - FMW 12.1.3:
    - java: jdk-7u80
    - WebLogic Server 12.1.3.0.0
  - DB: 11.2.0.4 (on HP-UX):
    - 2 PROD + 1 TEST (business data only)
    - 2 PROF + 1 TEST (FMW metadata)

# Installation

- OS
  - Oracle Linux
  - missing packages
  - local firewall/ports
- FMW
  - JDK + slow startup fix (securerandom.source=file:/dev/./urandom)
  - WL + Infrastructure services (java -jar fmw\_12.1.3.0.0\_infrastructure.jar)
    - **do not run Domain Configuration Wizard yet!**
  - SOA Suite (java -jar fmw\_12.1.3.0.0\_soa.jar)
    - ! into the same Oracle Base and Oracle Home!
  - Patch 20163149 for performance improvements (with latest OPatch)
  - install SOA Suite patch p20423408\_121300\_Generic
  - ! note: review requirements after each PSU available



# Setup

- Setup FMW domain
  - create FMR metadata repository database ( ./rcu -interactive ...)
  - create WL domain (config.sh)
- Deploy custom applications
  - EAR: tratata.ear,....
  - SOA: tratata-composits,..
  -
- Certificates in java keystores
  - find what really needed
  - Identity store
  - Trusted store
- Configure start/stop of ALL

# Issues faced

- Oracle Documentation and recommended “best something...”
  - versions references may not match
  - copy+paste from old
  - recommended directory structure
- Project Documentation
  - incomplete description
  - missing configuration steps
  - copy+paste from old
  - undocumented components
    - › keystores/certificates
    - › firewall requirements
- Oracle Bugs

# Issues faced

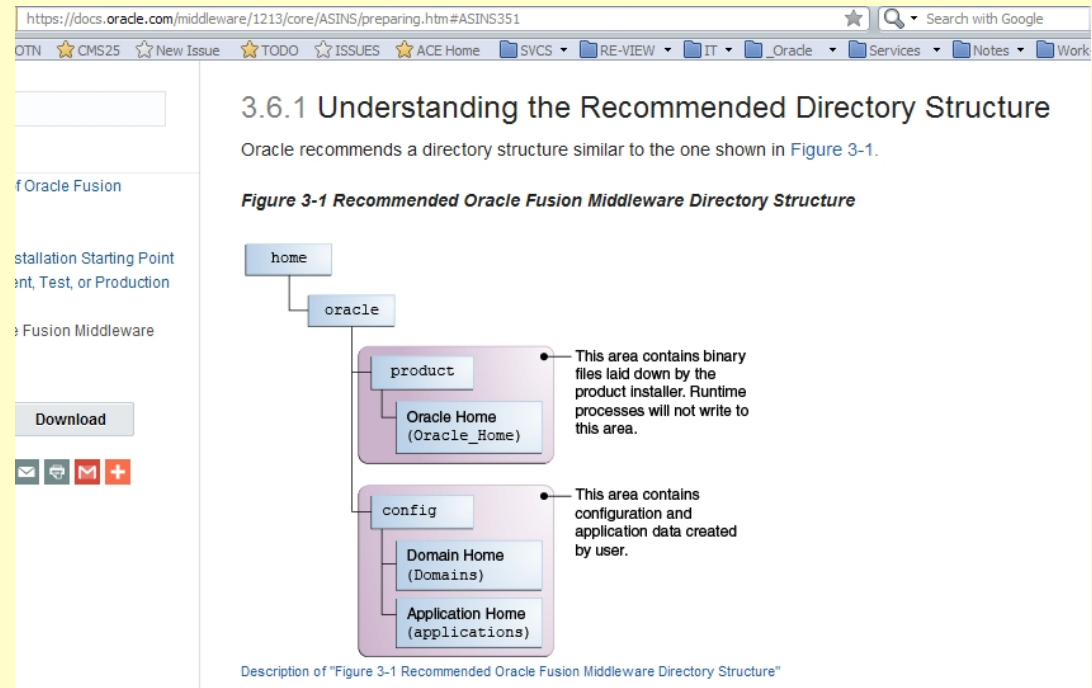
- Oracle Documentation mismatch example:

- directory structure model in 12.1.3. docs:

../oracle/product/ORACLE\_HOME

../oracle/config/domains

../oracle/config/applications



- default directory in installer still use 12.1.1 model:  
../oracle/product/ORACLE\_HOME/user\_projects/domains  
../oracle/product/ORACLE\_HOME/user\_projects/applications

Application location:

# Issues faced

- Using non-default, but “recommended” directories structure or due to other reason may face the following:
- NodeManager startup problems:

**err n1:**

```
<Aug 17, 2015 6:11:56 PM EEST> <WARNING> <Domains file not found:  
/u01/app/oracle/product/FMW12.1.3/oracle_common/common/nodemanager/nodemanager.domains>
```

**err n2:**

```
<Aug 17, 2015 6:11:57 PM EEST> <SEVERE> <Fatal error in NodeManager server: Identity key store  
file not found:  
/u01/app/oracle/product/FMW12.1.3/oracle_common/common/nodemanager/security/DemoIdentity.jks>
```

- Workaround (unpublished, found similar case published by community): find + copy:

```
find /u01/app/oracle/ -name nodemanager.domains  
...  
cp -p /u01/app/oracle/config/user_projects/domains/base_domain/nodemanager/nodemanager.domains  
/u01/app/oracle/product/FMW12.1.3/oracle_common/common/nodemanager/nodemanager.domains  
  
find /u01/app/oracle/ -name DemoIdentity.jks  
...  
cp -p /u01/app/oracle/config/user_projects/domains/base_domain/security/DemoIdentity.jks  
/u01/app/oracle/product/FMW12.1.3/oracle_common/common/nodemanager/security/DemoIdentity.jks
```

- Make sure later which file(s) when used during NM, ManagedServer start/stop!

# Issues faced

- Project Documentation example
  - missing configuration steps - “User Messaging service” during setup

| Component   |
|---|
| <input type="checkbox"/> Oracle AS Repository Components              |
| <input checked="" type="checkbox"/> AS Common Schemas                 |
| <input checked="" type="checkbox"/> Metadata Services                 |
| <input checked="" type="checkbox"/> Audit Services                    |
| <input checked="" type="checkbox"/> Audit Services Append             |
| <input checked="" type="checkbox"/> Audit Services Viewer             |
| <input checked="" type="checkbox"/> Oracle Platform Security Services |
| <input type="checkbox"/> User Messaging Service                       |
| <input checked="" type="checkbox"/> WebLogic Services                 |
| <input checked="" type="checkbox"/> Common Infrastructure Services    |

- caused missing SOA “plugin” in EM and required functionality

# Issues faced

- Project Documentation bad example:
  - undocumented keystores/certificates
  - used default keystores under old (11.1) ORACLE\_HOME to store production credentials together with default set of certificates.
  - outdated documentation
  - and many old EXPIRED certificates, the same certificates in many keystores, certificates from testing environment migrated to production ages ago.
- How to resolve
  - search for keystores on old server (+ default ones)
  - check all VALID/EXPIRED certificates in every keystore
  - ask application developers
  - and application properties (most keystores path defined in cfg + default keystores)
  - make client/developers accept for found JSK+certificates.
  - copy or exp/imp/migrate to new (12c) server

# Issues faced

- How to find

- default ones:

- /u01/Middleware/wlserver\_10.3/server/lib/...
    - /u01/jrockit/jre/lib/security/cacerts...

- + search:

- ```
find / -name "*.jks" -exec ls -l {} \;
```
    - ```
find / -name "*cacert*" -exec ls -l {} \;
```

- + find with WLST

- command: **listKeyStores**

- or by name:

```
wls:/base_domain/serverConfig> find(name='KeyStoreFileName');  
Finding 'KeyStoreFileName' in all registered MBean instances ...  
/Servers/AdminServer      CustomIdentityKeyStoreFileName  
                           /u01/Middleware/wlserver_10.3/server/lib/TATATA.jks  
/Servers/AdminServer      CustomTrustKeyStoreFileName          null  
/Servers/ManagedTT      CustomIdentityKeyStoreFileName  
                           /u01/Middleware/wlserver_10.3/server/lib/TATATA.jks  
/Servers/ManagedTT      CustomTrustKeyStoreFileName          null  
...
```

- + ask application developers (some may be even hard-coded!)

- + and application properties (most keystores path defined in cfg + default keystores)

# Issues faced

- How to identify required certificates

- dump JKS keystore with keytool

```
${KEYTOOL_PATH} -list -v -keystore ${JKS_PATH}
```

- make report (searching, dumping and making summary may be automated with Shell)
- **REMEMBER to document findings and required one (this will save time in next upgrades)!**

HOSTNAME=abcd\_esb\_test.tratata.gov.lv  
Snapshot time: ### JKS list Fri Apr 24 14:41:36 EEST 2015 ###  
Discovery reports dir: 15.04.24.abcd\_esb\_test.tratata.gov.lv.jksinfo

|  |  |
|--|--|
| Discovery protocol:                    | <a href="#">file:jks.info.txt</a>          |
| JSK and other files at known location: | <a href="#">file:jks.info.txt.foundjsk</a> |
| Demo JKS found:                        | <a href="#">file:jks.info.txt.demojks</a>  |
| Temp JKS found:                        | <a href="#">file:jks.info.txt.tmpjks</a>   |

Known JKS dumps info:

| Hostname                     | JKS Alias       | Is Found: | JKS Path:   | JKS dump file:            | Report file:           | Entries: | Certificates: |
|------------------------------|-----------------|-----------|---|---------------------------|------------------------|----------|---------------|
| abcd_esb_test.tratata.gov.lv | abcd_ss         | FOUND     | /u01/abcd/certs/abcd_ss.jks                       | <a href="#">dump file</a> | <a href="#">REPORT</a> | 1        | 1             |
| abcd_esb_test.tratata.gov.lv | abcd.4.4.10     | FOUND     | /u01/Middleware/wlserver_10.3/server/lib/abcd.jks | <a href="#">dump file</a> | <a href="#">REPORT</a> | 2        | 4             |
| abcd_esb_test.tratata.gov.lv | abcd_cacerts    | FOUND     | /u01/abcd/certs/cacerts.jks                       | <a href="#">dump file</a> | <a href="#">REPORT</a> | 86       | 86            |
| abcd_esb_test.tratata.gov.lv | lib_sec_cacerts | FOUND     | /u01/jrockit/jre/lib/security/cacerts             | <a href="#">dump file</a> | <a href="#">REPORT</a> | 86       | 86            |
| abcd_esb_test.tratata.gov.lv | ts              | NOT_FOUND | /u01/abcd/das/tt.jks                              | n/a                       | n/a                    | n/a      | n/a           |
| abcd_esb_test.tratata.gov.lv | ta              | FOUND     | /u01/abcd/certs/trota.jks                         | <a href="#">dump file</a> | <a href="#">REPORT</a> | 1        | 1             |

HOSTNAME=abcd.domaindomain.lv  
Snapshot time: ### JKS list Fri Apr 24 14:20:35 EEST 2015 ###  
Discovery reports dir: 15.04.24.abcd.domaindomain.lv.jksinfo

|                     |                                   |
|---------------------|-----------------------------------|
| Discovery protocol: | <a href="#">file:jks.info.txt</a> |
|---------------------|-----------------------------------|



# Issues faced

- Findings reports example – simple keystore dump

```
2 Keystore type: JKS
3 Keystore provider: SUN
4
5 Your keystore contains 1 entry
6
7 Alias name: abcd
8 Creation date: Apr 24, 2015
9 Entry type: PrivateKeyEntry
0 Certificate chain length: 1
1 Certificate[1]:
2 Owner: CN=abcd.domaindomain.lv, O=TrestTrust Organizacija, L=Riga, ST=Riga, C=LV
3 Issuer: CN=abcd.domaindomain.lv, O=TrestTrust Organizacija, L=Riga, ST=Riga, C=LV
4 Serial number: 1539f247
5 Valid from: Fri Apr 24 11:05:21 EEST 2015 until: Mon Apr 23 11:05:21 EEST 2016
6 Certificate fingerprints:
7   MD5: 8D:CC:21:4B:AB:44:39:F7:*****
8   SHA1: B2:E1:D8:FD:E9:4B:57:39:F9:*****
9   Signature algorithm name: SHA1withRSA
0   Version: 3
1
2
3 *****
4 *****
```

# Issues faced

- Findings reports examples

== Summary ==

JKS file location: abcd.domaindomain.lv:/u01/jrockit/jre/lib/security/cacerts

Keystore type: JKS

Keystore provider: SUN

Your keystore contains 87 entries

== 87 alias(es) found ==

== 87 certificate(s) found ==

== ----- ==

JKS entries info:

| Entry Alias             | Entry Type       | Created:     | Cert.count: | Dump:                |
|-------------------------|------------------|--------------|-------------|----------------------|
| digicertassuredidrootca | trustedCertEntry | Jan 7, 2008  | 1           | <a href="#">file</a> |
| trustcenterclass2caii   | trustedCertEntry | Jan 7, 2008  | 1           | <a href="#">file</a> |
| zzdats.lv               | trustedCertEntry | Nov 11, 2011 | 1           | <a href="#">file</a> |
| thawtepremiumserverca   | trustedCertEntry | Dec 2, 2009  | 1           | <a href="#">file</a> |
| swissignplatinumg2ca    | trustedCertEntry | Aug 13, 2008 | 1           | <a href="#">file</a> |
| swissignsilverg2ca      | trustedCertEntry | Aug 13, 2008 | 1           | <a href="#">file</a> |
| thawteserverca          | trustedCertEntry | Dec 2, 2009  | 1           | <a href="#">file</a> |

|                    |                  |              |   |                      |
|--------------------|------------------|--------------|---|----------------------|
| secomevrootca1     | trustedCertEntry | May 1, 2008  | 1 | <a href="#">file</a> |
| verisignclass1g2ca | trustedCertEntry | Mar 25, 2004 | 1 | <a href="#">file</a> |

Certificates details (ALL):

| Entry Alias             | Status: | Valid from:                   | Valid until:                  | Dump:                | Serial Number:                           | Cert Owner:   | Issuer:  |
|-------------------------|---------|-------------------------------|-------------------------------|----------------------|--|---|--|
| digicertassuredidrootca | VALID   | Fri Nov 10 02:00:00 EET 2006  | Mon Nov 10 02:00:00 EET 2031  | <a href="#">file</a> | ce7e0e517d846fe8fe560fc1bf03039          | DigiCert Assured ID Root CA, OU=www.digicert.com, O=DigiCert Inc, C=US                  | DigiCert Assured ID Root CA, OU=www.digicert.com, O=DigiCert Inc, C=US   |
| trustcenterclass2caii   | VALID   | Thu Jan 12 16:38:43 EET 2006  | Thu Jan 01 00:59:59 EET 2026  | <a href="#">file</a> | 2e6a000100021fd752212c115c3b             | TC TrustCenter Class 2 CA II, OU=TC TrustCenter Class 2 CA, O=TC TrustCenter GmbH, C=DE | TC TrustCenter Class 2 CA II, OU=TC TrustCenter Class 2 CA, O=TC TrustCenter GmbH, C=DE                                  |
| zzdats.lv               | EXPIRED | Tue Oct 05 11:09:48 EEST 2010 | Thu Oct 10 11:09:48 EEST 2013 | <a href="#">file</a> | 10b96bc96172d0bebd625f6cbe7aae240b115f60 | *.zzdats.lv, OU=Production, O=ZZ Dats SIA, L=Riga, ST=Riga, C=LV                        | ipscalevel1@ipsca.com, CN=ipsCA Level 1 CA, OU=Certificaciones, O=ips Certification Authority, L=MADRID, ST=MADRID, C=ES |
| thawtepremiumserverca   | VALID   | Thu Aug 01 03:00:00           | Sat Jan 02 01:59:59           | <a href="#">file</a> | 36122296c5e338a520a1d25f4cd70954         | premium-server@thawte.com, CN=Thawte Premium Server CA, OU=Certification Services       | premium-server@thawte.com, CN=Thawte Premium Server CA, OU=Certification Services  |

# Project 1

STATUS = MIGRATED!

# Project 2

## Reports Server upgrade

- OLD:
  - OS: VM: Windows Server 2003 R (64-bit)
  - Oracle Forms (client-server) and Reports 6i (client-server -RBE, reports-server)
  - DB: 9.2.0.8
- NEW:
  - OS: VM: Windows Server 2012 (64-bit)
  - Oracle Forms (untouched yet)
  - Oracle Reports 12c (12.2.1)
  - DB: 9.2.0.8 (untouched yet)

# Installation

- OS
  - create extra user: oracle
- Metadata DB:
  - install or use other host. (! Note: 12c DBAC default settings make “eat” too much RAM!)
- FWM:
  - Install JDK (jdk1.8.0\_65+) – 32/64-bit
  - Install Oracle WLS ( on 64-Bit Platforms Using a 64-Bit JDK)
    - java -jar fmw\_12.2.1.0.0\_infrastructure.jar (w/o examples!!)
    - **! NOT java -jar fmw\_12.2.1.0.0\_wls.jar**
    - **do not run Domain Configuration Wizard!**
  - Install Forms and Reports 12.2.1
    - fmw\_12.2.1.0.0\_fr\_win64\_Disk1\_1of1.zip\setup\_fmw\_12.2.1.0.0\_fr\_win64.exe
    - Option: Forms and Reports Deployment (other Forms Builder) 12.2.1.0.0
    - **do not run Domain Configuration Wizard yet!**
  - **Apply PSU/Bundled/required one-off patches!**

# Setup

- Setup FMW domain
  - create FMR metadata repository database ( ./rcu )
  - create WL domain (config.sh)
- Create Reports specific components
  - start NM, Admin Server first
  - start WLS\_REPORTS managed server (JVM)
  - createReportsToolsInstance (with WLST) – MANDATORY!
  - createReportsServerInstance (with WLST) – if Stand-Alone RS required
- Test it is working + reconfigure  
**(12.2 RS is more secure out-of-the-box, manual intervention required to make it more admin-friendly ;)**
- Automate start/stop of ALL

# Issues faced

- Oracle Documentation
  - versions
  - copy+paste from old
  - missing information
  - incorrect configuration
- Oracle Bugs
  - documented
  - undocumented (SR created, output: new MOS notes)
  - old bugs reflection
- Default settings
  - DB memory (DBCA recommends too much (70% of RAM or so) for just metadata repository DB,  
**Be Careful!**)



# Issues faced

- Oracle Documentation issues example: Task: post-installation tasks

**Documentation** ( [https://docs.oracle.com/middleware/1221/formsandreports/install-fnr/install.htm#FRINS394\\_](https://docs.oracle.com/middleware/1221/formsandreports/install-fnr/install.htm#FRINS394_) )

2.4.8 Configuring Reports Using the Configuration Wizard

2.4.8.1 Provisioning a Machine

“Follow these steps to provision a machine for Oracle Reports.

...Start Node manager

... Start Adminserver

... Use WLST to create Reports Components

```
createReportsToolsInstance (instanceName='<reportsToolsName>', machine='AdminServerMachine')
```

```
createReportsServerInstance (instanceName='<reportsServerName>', machine='AdminServerMachine')
```

...Start WLS\_REPORTS

Create a reports tools targeted to machine 'AdminServerMachine'- reptools1

Create a reports server targeted to machine 'AdminServerMachine' – repsvr\_<hostname> ... “

**Really:**

**Remark 1:** Once more?! Really – not! Do only once in correct place!

**Remark 2:** `createReportsServerInstance` is only required if You need extra stand-alone reports server instance. Default in-process RS will be created with WLS\_REPORTS by default with name “`rep_wls_reports_YOURSEREVR_HOSTNAME`”

**Remark 3:** `createReportsTools` – is mandatory!

# Issues faced

- Oracle Documentation issues example:

Task: Make Unicode in PDF

- src1: 

## 9.7 Running a Unicode Report using TTF/TTC Fonts

Oracle Reports 12c Release (12.2.1), uses the new font mechanism to run a Unicode report on UNIX using the TTF / TTC fonts, generating report output that in most cases looks identical on both platforms.

**Run a sample Unicode report on Windows:**

  1. Navigate to the EM MBean browser Weblogic Domain > System MBean Browser

Navigate to reports tools mbean for uifont.ali `oracle.frcommon.config:type=uifont.ali,name=uifont-<componentName>`

  - Add the following entry under the [PDF:Subsetting] section:

```
"Arial Unicode MS"="ARIALUNI.TTF"
```

  - Ensure there is no aliasing defined for Arial in the Global section. If there is, comment it out:

```
#Arial=Helvetica
```

  2. Add the font ARIALUNI.TTF to REPORTS\_PATH.
  3. Set NLS\_LANG in the Windows registry to AMERICAN\_AMERICA.UTF8.
  4. Open the sample report in Reports Builder.
  5. Select File > Generate to File > PDF.

# Issues faced

- Oracle Documentation issues example: Task: Make Unicode in PDF
- src2:

## 11.3 Generating a Unicode PDF File

This section outlines the steps involved in generating a PDF file with a Unicode character set. Before using the font features covered in this section, refer to [Table 11-4](#) to determine which feature best suits your application needs.

### 11.3.1 Font Subsetting

The steps involved in generating a Unicode PDF file using the font subsetting feature are as follows:

1. Set `NLS_LANG=AMERICAN_AMERICA.UTF8`.
2. Set `REPORTS_PATH` to the font directory in which the TrueType font exists. For example, `C:\WINNT\fonts`.
3. Open the `uifont.ali` file and edit the `[PDF:Subset]` section to specify the TrueType font name.

#### Note:

The `uifont.ali` file is located in the following directory on Windows and UNIX:

- `${DOMAIN_HOME}/config/fmwconfig/components/ReportsToolsComponent/<reports_tools_name>/guicommon/tk/admin/`

#### Example

```
[ PDF:Subset ]
"Andale Duospace WT J" = "Aduoj.ttf"
"Albany WT J"="AlbanWTJ.ttf"
```

The specified font should cover the Unicode range that your report uses.

4. Create a report having MLS data and set its font to the Unicode font.
5. Run a report having MLS data with `DESTYPE=FILE DESFORMAT=PDF`.

# Issues faced

- Oracle Documentation issues example - Task: Make Unicode in PDF
- What is wrong with documentation:
  - We should merge 9.7 and 11.3 to have full picture
  - Path in MBean Browser is a bit different
  - Really MBean Browser is optional – we can make changes in rwserver.conf only (+restart RS)
  - Path to uifont.ali may not match the documentation depending on tool used (RS or Builder)

Really 2 files installed under the following path:

```
%DOMAIN_HOME%\config\fmwconfig\components\ReportsToolsComponent\ReportsTools01\guicommon\tk\admin  
%DOMAIN_HOME%\config\fmwconfig\components\ReportsToolsComponent\ReportsTools01\tools\COMMON
```

- Instructions does not make Unicode in PDF working!!
- Because of MISSING (not conmfugured by any install/setup tool)  
+ UNDOCUMENTED registry setting REPORTS\_INSTANCE  
(see MOS note 2091306.1 for configuration details)

# Issues faced – Oracle bugs

- Oracle Bugs – 1 – uifont.ali location
  - something similar was in 11g

Bug 9090478 : IN-PROCESS REPORT SERVER READS UIFONT.ALI FROM WRONG DIRECTORY

Bug Attributes

|                  |  |   |                                  |
|------------------|--|---|----------------------------------|
| Type             | B - Defect                                   | Fixed in Product Version  | ? was it fixed?                  |
| Severity         | 2 - Severe Loss of Service                   | Product Version   | 11.1.1.1                         |
| Status           | 11 - Code/Hardware Bug (Response/Resolution) | Platform  | 912 - Microsoft Windows (32-bit) |
| Created          | 05-Nov-2009                                  | Platform Version  | 2008                             |
| Updated          | <u>27-Nov-2015</u>                           | Base Bug  | N/A                              |
| Database Version | 10.2   | Affects Platforms   | Port-Specific                    |
| Product Source   | Oracle                                       | <a href="#">Knowledge, Patches and Bugs related to this bug</a> |                                  |

Related Products

|      |                  |         |                                |
|------|------------------|---------|--------------------------------|
| Line | Middleware       | Family  | Developer Tools                |
| Area | Database & PLSQL | Product | 159 - Oracle Reports Developer |

Hdr: 9090478 10.2 RUNTIME 11.1.1.1 FONT PRODID-159 PORTID-912

Abstract: IN-PROCESS REPORT SERVER READS UIFONT.ALI FROM WRONG DIRECTORY

# Issues faced – Oracle bugs

- Oracle Bugs – 1 – uifont.ali location
  - similar to Bug 9090478, but not the same
  - MOS Note 2981306.1 about REPORTS\_INSTANCE created after our SR
  - in 12c it is not bug, but just undocumented feature (no Bug created for the problem)

The screenshot shows the Oracle MOS search interface. At the top, there are tabs for Knowledge Base, Archive, Community, Documentation, Bug, Patch, and System Handbook. The 'Bug' tab is selected. A search bar contains the text 'uifont.ali'. Below the search bar, there are filters for 'Start typing to select Product', 'Any Product Version', 'Any Platform', and 'Last updated - Any time'. The search results are displayed under the heading 'Knowledge Base Search Results'. There are four results listed, each with a star icon, a document icon, a date, and a title. The first result is 'Reports 12c: uifont.ali File Not Being Found on Windows Platform' (Doc ID 2091306.1). The second result is 'On Windows Platform, the In-Process Reports Server Reads Uifont.ali From Incorrect Directory in Version 11a' (Doc ID 965582.1). The third result is 'Master Note for Font Issues in Oracle Reports' (Doc ID 1297012.1). The fourth result is 'A Practical Methodology on Porting Reports from Windows to Unix with Different Fonts' (Doc ID 356221.1).

Knowledge Base Archive Community Documentation Bug Patch System Handbook

uifont.ali

Start typing to select Product Any Product Version Any Platform Last updated - Any time

Results: Knowledge Base | Community | Bug

**Tips**  
Use the "inline" product refinement within your search result lists to quickly broaden or narrow down your search results.

**Knowledge Base Search Results**

- ★ 21-Dec-2015 Reports 12c: uifont.ali File Not Being Found on Windows Platform (Doc ID 2091306.1)  
Reports 12c: uifont.ali  
Refine to All > Middleware > Developer Tools > Database & PLSQL > Oracle Reports Developer
- ★ 09-Jun-2015 On Windows Platform, the In-Process Reports Server Reads Uifont.ali From Incorrect Directory in Version 11a (Doc ID 965582.1)  
FONT ALIASING; IN PROCESS; ENTERPRISE MANAGER; UIFONT.ALI; WINDOWS; DIRECTORY; FONT SUBSETTING;  
Refine to All > Middleware > Developer Tools > Database & PLSQL > Oracle Reports Developer
- ★ 05-Oct-2015 Master Note for Font Issues in Oracle Reports (Doc ID 1297012.1)  
FONT ALIASING; FONT METRICS; REP-69; CHARACTERSET; UIFONT.ALI; REP-1924; BARCODE; AFM FILES; ...  
Refine to All > Middleware > Developer Tools > Database & PLSQL > Oracle Reports Developer
- ★ A Practical Methodology on Porting Reports from Windows to Unix with Different Fonts (Doc ID 356221.1)



# Issues faced – Oracle bugs

- Oracle Bugs – 2 – RS Engine crash if Fonts Subsetting used
  - happened after REPORTS\_INSTANCE is set to correct uifont.ali location
  - **anyone need to employ fonts subsetting to have unicode in PDF** (even if RS on Windows)
  - Bug 22224336 : REP-56048 WITH PDF SUBSETTING 12C, registered 3 weeks after 12.2.1
  - One-off patch generated in **2 months**: (Linux: 12.01.2016, Windows: 16.01.2016 )

## Bug 22224336 : REP-56048 WITH PDF SUBSETTING 12C

### ☑ Bug Attributes

|                  |  |   |   |
|------------------|--|---|---|
| Type             | B - Defect                                       | Fixed in Product Version  | <u>12.2.2.1.0</u>                       |
| Severity         | 2 - Severe Loss of Service                       | Product Version   | <u>12.2.1.0.0</u>                       |
| Status           | 80 - Development to QA/Fix<br>Delivered Internal | Platform  | 233 - Microsoft Windows<br>x64 (64-bit) |
| Created          | <u>17-Nov-2015</u>                               | Platform Version  | 2008 R2                                 |
| Updated          | <u>20-Jan-2016</u>                               | Base Bug  | N/A                                     |
| Database Version | 11.2.0.4   | Affects Platforms   | Generic                                 |
| Product Source   | Oracle   | <a href="#">Knowledge, Patches and Bugs related to this bug</a> |   |

### ☑ Related Products

|      |                  |         |                                |
|------|------------------|---------|--------------------------------|
| Line | Middleware       | Family  | Developer Tools                |
| Area | Database & PLSQL | Product | 159 - Oracle Reports Developer |

# Issues faced – Oracle bugs

- Oracle Bugs – 2 – RS Engine crash if Fonts Subsetting used
- **Bugs happens, what is wrong with this one?!**
  - Unicode in PDF – is basic functionality -  
once more: **anyone need to employ fonts subsetting to have unicode in PDF**
  - It was working in 11g. Why should it fail in 12c? (really it is still 11g RS engine)

|             |  |
|-------------|--|
| File        | neetups\2016.01.LVOUG_MU15\P2-RS12\encoding_test_rdfV1-TimesF341.pdf |
| PDF Version | PDF-1.4  |
| Page Size   | [21.59 * 27.94 cm]   |
| Pages       | 1  |
| Title       | encoding_test_rdfV1-TimesF341.pdf                                    |
| Subject     | None   |
| Author      | Oracle Reports   |
| Creator     | Oracle11gR1 AS Reports Services                                      |
| Producer    | Oracle PDF driver  |

- **2 months** – is too much for critical bugs fix (IMHO)
- **Q: Has is (RS 12.2) been ever tested before software was published?!**



# Issues faced – Oracle bugs

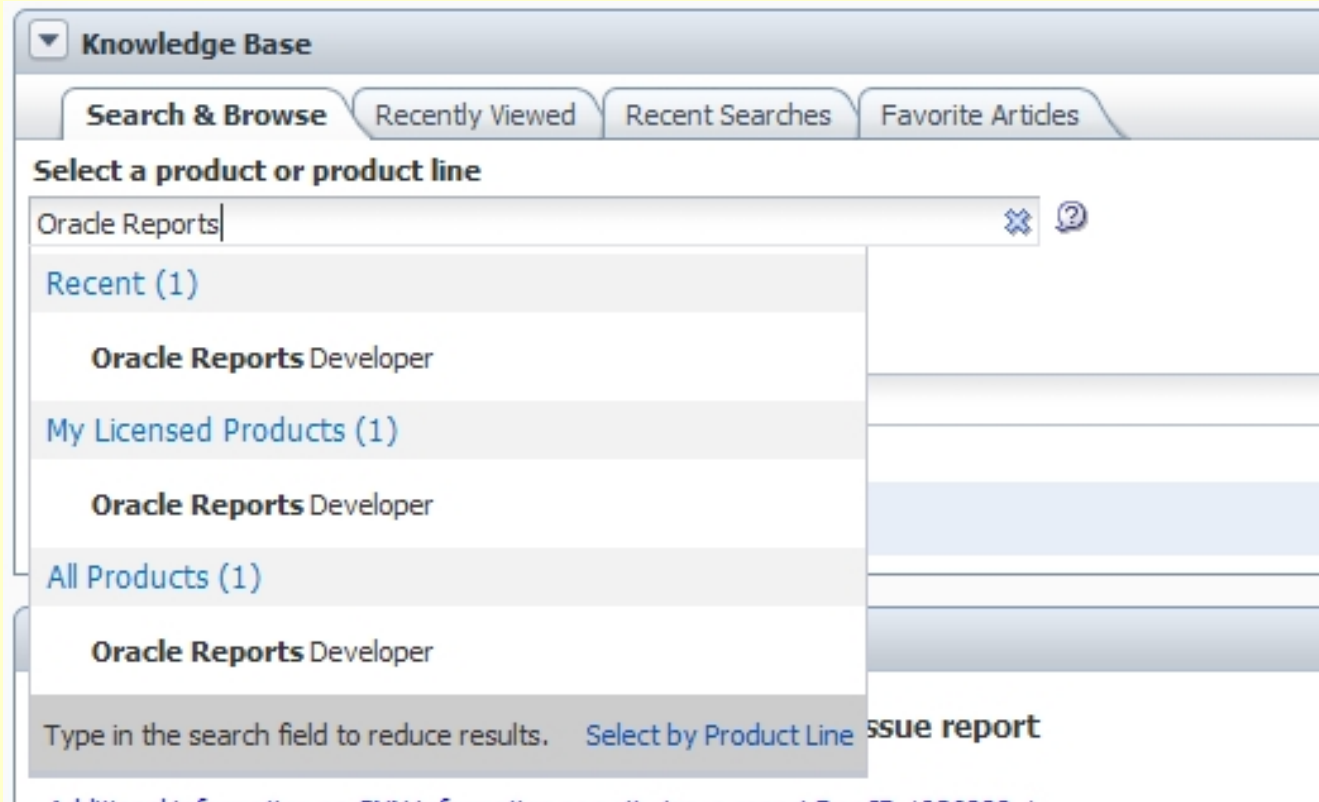
- Other Bugs/Issues faced
  - Fnchk.exe FMW 12c Fails to Start : The Program Can't Start Because MSVCR90.dll Is Missing From Your Computer. (Doc ID 2078252.1)
  - Bug 22334822 : ISSUE WITH FOLDER ACCESS NOT SUPPORTING '\*' TO ALLOW READ/WRITE TO ANY LOCATION" (still not fixed, use W/A with multiple locations delimited by “;”)
  - arialb.ttf and arialbd.ttf : Differences / Explanations about these 2 Files for Arial Bold TTF (Doc ID 1407114.1) – check which is in your system and do not mind to fix wrong example in uifont.ali (some last lines)
  - Size of PDF generated in 12c is much bigger then in 6i (for the same content).
  - Other issues may happen depending on configuration required – check Doc ID 2073820.1

# Issues – how to avoid

- Oracle Reports 12.2 – has some new features and configuration changes
  - More secured out-of-the-box – we need manual “unlock” to make RS more admin-friendly
  - New tool to change settings with web user interface – MBeans browser (link is present in EM).
  - Config file location may be changed (compared to 11g) or does not match documentation:
    - › depending on platform (Win/Linux)
    - › used tools (RWServlet or just Reports Builder)
  - Reports Builder has NO stand-alone installation. It should be installed together with Forms and Reports full installation + WL domain configuration + metadata repository database.
  - 'Oracle Reports Services - WLS\_REPORTS' Not Showing Up In The Start Menu (Note:2077328.1)
- How to avoid:
  - Read product (exact version) documentation, release notes in-advance
  - Review fresh version of “Reports 12c Relevant Notes and Links Index” (Doc ID 2073820.1)
  - Check correct config files used (Note:2071812.1)
  - Enable trace/diagnostic ( Note:2070743.1 )

# Issues faced – MOS

- Strange filters in MOS search – where is Oracle Reports Server?



# Issues faced – MOS

- Strange filters in MOS search – where is 12.2 version?

The screenshot displays the MOS search interface. At the top, there are tabs for Knowledge Base, Archive, Community, Documentation, Bug, Patch, and System Handbook. The 'Bug' tab is selected. Below the tabs, there is a search bar with the text 'Oracle Reports Developer' and a dropdown menu showing '12.2.1.0.0'. The 'Any Platform' filter is also visible. The search results are displayed below the search bar, showing a list of documents. The first document is titled 'Oracle Fusion Middleware 11g Installer Fails Certification Check On Red Hat Enterprise Linux 6.x' (Doc ID 1487381.1). The second document is titled 'Steps to Maintain Oracle Forms & Reports 11g Release 2 (11.1.2)' (Doc ID 1373061.1). The third document is titled 'Resolve Problems Faster! Use Remote Diagnostic Agent ( RDA ) - Fusion Middleware and WebLogic Server' (Doc ID 149...). The fourth document is titled 'Announcing Oracle Fusion Middleware 11g Release (11.1.1.7.0)' (Doc ID 1535341.1). The fifth document is titled 'Announcing Oracle Forms & Reports 11g Release 2 (11.1.2)' (Doc ID 1503701.1). The filters section shows 'Oracle Reports Developer' and '12.2.1.0.0'.

Knowledge Base Archive Community Documentation Bug Patch System Handbook

Bug

Oracle Reports Developer 12.2.1.0.0 Any Platform Last updated -

Results: Knowledge Base | Community | Bug

**Tips**

You can multi-select sources like Bug by clicking the source tabs above.  
The search will issue automatically. Scroll down to see the results.  
If you just want to open a specific bug, enter BUG xxx (where xxx is the bug number) into the global search box (top right corner).

**Knowledge Base Search Results**

Filters: Oracle Reports Developer 12.2.1.0.0

17-Apr-2015  
Oracle Fusion Middleware 11g Installer Fails Certification Check On Red Hat Enterprise Linux 6.x (Doc ID 1487381.1)  
... LINUX; OUI; CERTIFICATION; FUSION MIDDLEWARE; INSTALL; INSTALLER; RHEL; BUG; RED HAT ENTERPRISE LINUX; SYSTEM; ACTU  
Refine to All > Middleware > Application Servers > Oracle Application Server > Oracle Fusion Middleware

02-Oct-2015  
Steps to Maintain Oracle Forms & Reports 11g Release 2 (11.1.2) (Doc ID 1373061.1)  
Actions Patch Set Recommendations <Bug 21936698> - F&R 11.1.2 MISSING PATCHING GUIDE POST-INSTALL STEP  
Refine to All > Middleware > Application Servers > Oracle Application Server > Oracle Fusion Middleware

15-Jan-2016  
Resolve Problems Faster! Use Remote Diagnostic Agent ( RDA ) - Fusion Middleware and WebLogic Server (Doc ID 149...)  
Get Proactive with RDA 2. Upgrade / Install 2(a). Using RDA for first time Each new release features enhancements and bug fixes.  
Refine to All > Middleware > Application Servers > Oracle Application Server > Oracle Fusion Middleware

24-Aug-2015  
Announcing Oracle Fusion Middleware 11g Release (11.1.1.7.0) (Doc ID 1535341.1)  
Bug Fixes  
Refine to All > Middleware > Application Servers > Oracle Application Server > Oracle Fusion Middleware

Announcing Oracle Forms & Reports 11g Release 2 (11.1.2) (Doc ID 1503701.1)

## Project 2

STATUS = MIGRATION TESTED!  
but still resolve minor issues  
to make system more stable.

# Summary

# Summary

- 1. Upgrade/Migration rule #1:
  - **DO NOT PLAN to use Product Release/Version 1 in production – still actual**
    - › **at least until 1<sup>st</sup> PSU/Bundle patch collection**
- 2. Version information (docs, release notes, MOS notes) should be reviewed carefully!
- 3. Looks like Oracle actively use popular development/support approaches:
  - “Web2.0” (even in documentation)
  - “early client involvement”
- 4. Oracle Support expert skills level (and time zone) ?!
  - if You are lucky!
  - escalation still useful
- 5. Sorry to say, but too much bugs for such \$\$\$ (product price).
- **6. Knowledge is the power – DBA experts skills still required for challenging issues!**

# “Friends” and “Enemies”

- What/Who can be the “friend” and/or the “enemy”:
  - Oracle Documentation ?!
  - Oracle Support (experts and MOS notes) ?!
  - Project Documentation ?!
  - Default settings
  - Your own experience
- **“Everything You do not know - is not Your favour!”**



# Best practices

- Old good Upgrade/Migration best practices:
  - **understand why do You (client, business, anyone) need this!**
  - read the documentation, release notes, etc.
  - understand the architecture of ALL
  - understand the risks
  - prepare
    - › in advance
    - › test what is possible in testing environment
  - **production: do not plan Release 1 for production**
    - › **or at least PSU/Bundle 1... ?**
  - **Review documentation/Release/MOS notes/Patches once more**
    - › **time to time**
    - › **before production**

# Best practices

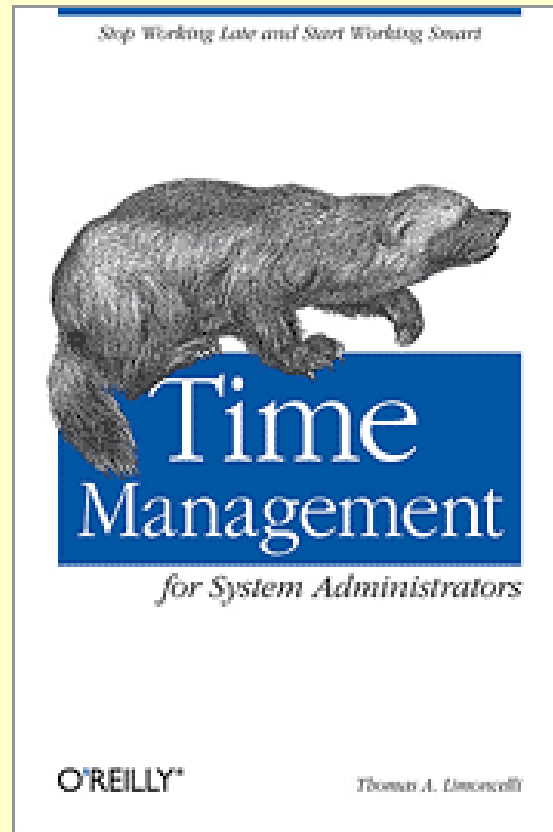
- Keep in order (correct and up to date):
  - Project DBA documentation (it is not just sheet of paper, but useful tool )
  - Project Sys-admins documentation (it is not just sheet of paper, but useful tool )
  - Project Developers documentation (it is not just sheet of paper, but useful tool )
  - Your skills and knowledge - update periodically!

**This will make migration/upgrade project more comfortable.**

# off-topic:

- Recommended Book to read:

**“Time Management for System Administrators”** ( *By Thomas A. Limoncelli* )



Q + A

Спасибо за внимание!  
Paldies par uzmanību!  
Thanks for attention!

**Andrey Chervonets**

e-mail: [a.chervonets@cominder.eu](mailto:a.chervonets@cominder.eu)

LinkedIn: <http://www.linkedin.com/in/andreychervonets>

web: <http://www.cominder.eu>