

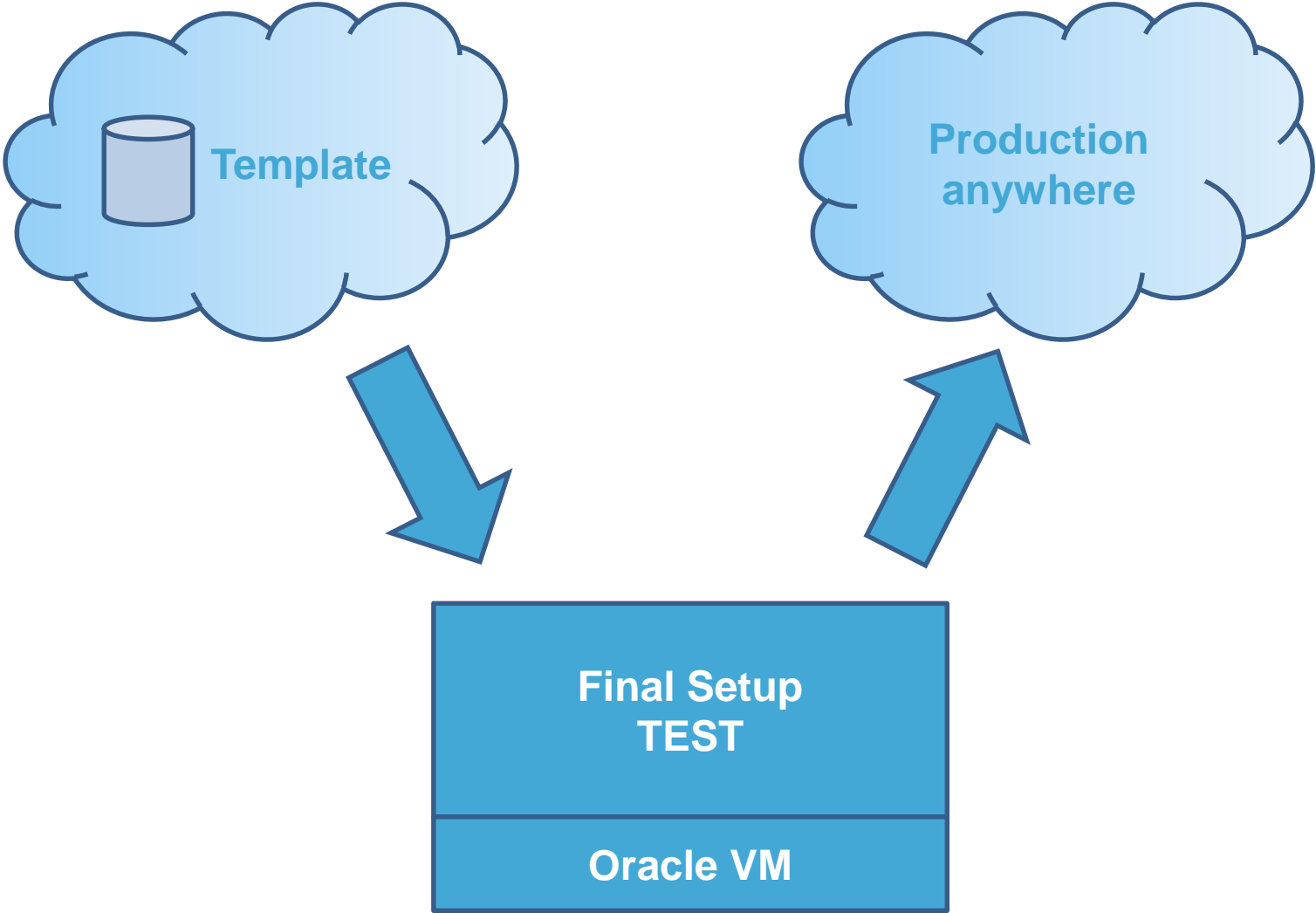
Hosting Template

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DOAG 2017

**Forms and Reports
ORDS and APEX
on
OEL 7**

Hosting Template



History and requirements

... Development derived from our own SaaS

- **Many complete, identical installations**
- **Complete setup, but not 100% identical**
- **Customer specific LAN setup, special addons**
- **Frequent addons and updates, forced updates**
- **Customers move from On-premise to Hosting**

History and requirements

... Business and technology requirements

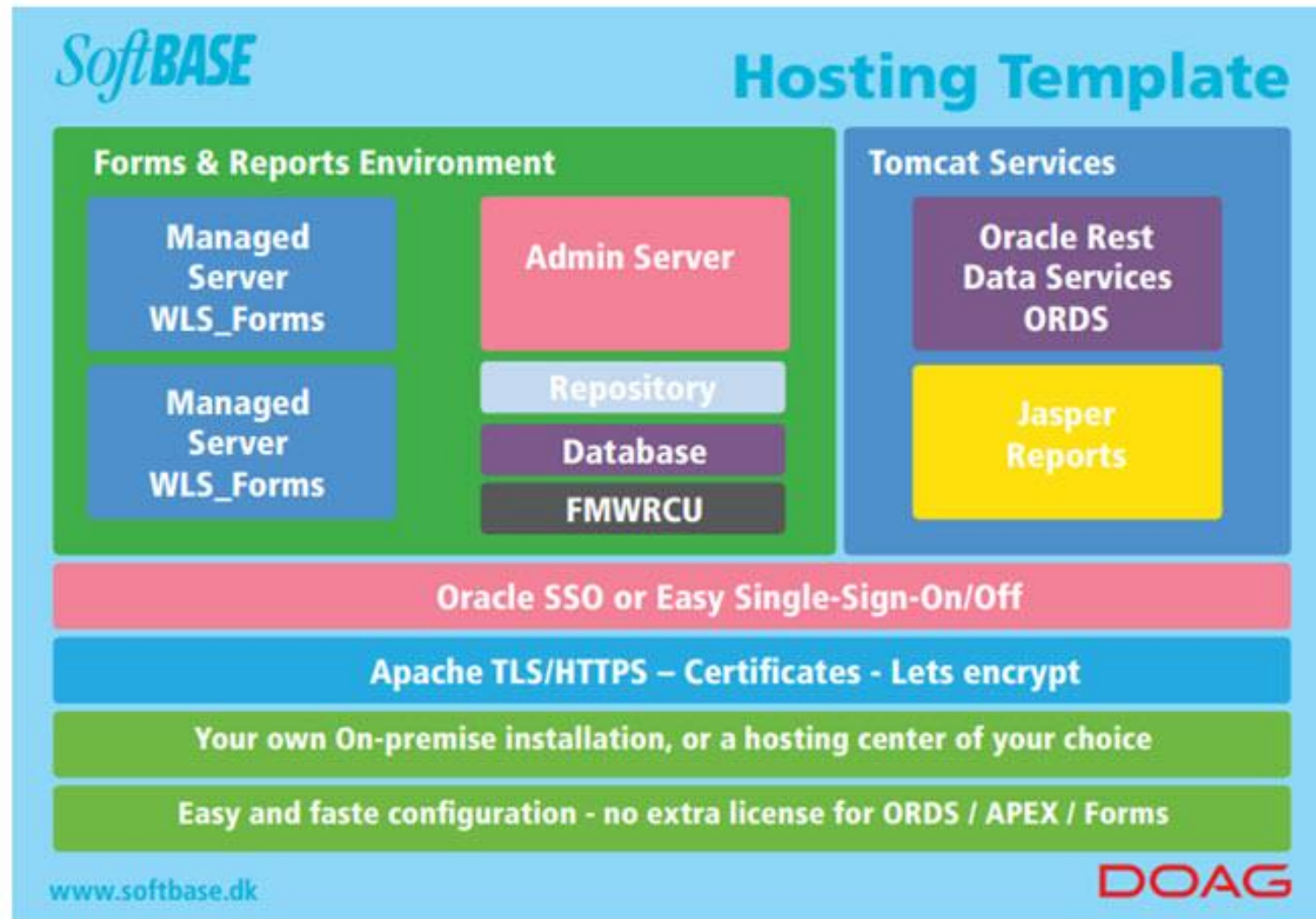
- **Oracle licenses separate for each customer**
- **CPU / NU licenses to DB + Forms and Reports**
- **Follow trend to add Open Source software**
- **Setup prepared for open cross-tool future**
- **Easy Single-Sign-On / Off for Forms, APEX etc.**

History and requirements

... Why not pick a readymade solution

- **Oracle claims 10.000 Licenses (Grant Ronald)**
- **Solution available from the Oracle cloud?**
- **Or a readymade Appliance, HW + SW + License**
- **PaaS metrics and terms are complex**
- **and very dynamic, difficult to budget**

Hosting Template



Template Architecture

... The components (OEL7 – Actual Oracle Enterprise Linux version 7.4)

- **OPSS local 12.2 database for weblogic**
- **Weblogic (AdminServer, WLS_FORMS and WLS_REPORTS)**
- **Developer Tools frmbld.sh, rwbuilder.sh, sqldeveloper, jdeveloper.**
- **Ords**
- **Apache tomcat for ords, jasperreports, webservices**
- **Apache httpd native version 2.4 / https frontend**
- **SSL certificate (Letsencrypt)**

Template Architecture

... The process, 9 setup steps for Automated Server Adaption

- **Setup network**
- **Setup hosts**
- **Change hosts files**
- **Change formsweb.cfg**
- **Change Oracle virtual hosts**
- **Deploy ORDS**
- **Generate SSL Certificate using Lets Encrypt, incl. automatic renewal (apply you own?)**
- **Create Apache Virtual Hosts**
- **Create nodemanager Services**

Template Architecture

... The process, Overview

```
[root@ottos12 oracle7-deploy]# ./run.sh
Updating...
Already up-to-date.

Choose one of the following possibilities:
0 - Stop webnm
1 - Setup network
2 - Change hosts files
3 - Change formsweb
4 - Change Oracle virtual hosts
5 - Deploy ORDS (prerequisite: ORDS already configured)
6 - Generate SSL certificates using Lets Encrypt
7 - Setup Lets Encrypt automatic renewal
8 - Create Apache (httpd) virtual hosts
9 - Create nodemanager Service
a - Start admin server using Nodemanager
q - Exit
Choice: |
```

Template Architecture

... The Services, Automated – Repository Database

```
[root@ottos12 oracle7-deploy]# systemctl status oracle-rdbms.service
• oracle-rdbms.service - Oracle Database(s) and Listener
   Loaded: loaded (/usr/lib/systemd/system/oracle-rdbms.service; enabled; vendor preset: disabled)
   Active: active (running) since Wed 2017-08-30 10:13:04 CEST; 1 day 11h ago
   Process: 642 ExecStart=/u01/app/oracle/product/12.1.0/dbhome_1/bin/dbstart /u01/app/oracle/product/12.1.0/dbhome_1 (code=exited, status=0/SUCCESS)
   CGroup: /system.slice/oracle-rdbms.service
           └─ 752 /u01/app/oracle/product/12.1.0/dbhome_1/bin/tnslsnr LISTEN...
           └─ 2658 ora_pmon_localfmwrcu
           └─ 2661 ora_psp0_localfmwrcu
           └─ 2664 ora_vktm_localfmwrcu
           └─ 2668 ora_gen0_localfmwrcu
           └─ 2670 ora_mman_localfmwrcu
           └─ 2674 ora_diag_localfmwrcu
           └─ 2676 ora_dbrm_localfmwrcu
           └─ 2678 ora_vkrm_localfmwrcu
           └─ 2680 ora_dia0_localfmwrcu
           └─ 2682 ora_dbw0_localfmwrcu
           └─ 2684 ora_lgwr_localfmwrcu
```

Template Architecture

... The Services, Automated – Node Manager

```
[root@ottos12 oracle7-deploy]# systemctl status nodemanager
• nodemanager.service - Node Manager controls the WebLogic Server runtime lifecycle
  Loaded: loaded (/etc/systemd/system/nodemanager.service; enabled; vendor preset: disabled)
  Active: active (running) since Wed 2017-08-30 10:11:49 CEST; 1 day 11h ago
  Main PID: 1087 (startNodeManage)
  CGroup: /system.slice/nodemanager.service
├─ 1087 /bin/sh /home/oracle/Oracle/Middleware12c/ofr1/user_projects/domains/SBErpc12/bin/start...
├─ 1116 /bin/sh /home/oracle/Oracle/Middleware12c/ofr1/wlserver/server/bin/startNodeManager.sh
├─ 1276 /usr/java/jdk1.8.0_121/bin/java -server -Xms32m -Xmx200m -Dcoherence.home=/home/oracle/...
├─11268 /home/oracle/Oracle/Middleware12c/ofr1/oracle_common/jdk/jre/bin/java -server -cp /home...
├─15381 /bin/sh /home/oracle/Oracle/Middleware12c/ofr1/user_projects/domains/SBErpc12/bin/start...
├─15431 /usr/java/jdk1.8.0_121/bin/java -Dderby.system.home=/home/oracle/Oracle/Middleware12c/o...
├─15432 /usr/java/jdk1.8.0_121/bin/java -server -Xms512m -Xmx1024m -Dweblogic.Name=AdminServer ...
├─16484 /bin/sh /home/oracle/Oracle/Middleware12c/ofr1/user_projects/domains/SBErpc12/bin/start...
├─16535 /usr/java/jdk1.8.0_121/bin/java -server -Xms256m -Xmx1024m -Dweblogic.Name=WLS_FORMS -D...
├─16861 /bin/sh /home/oracle/Oracle/Middleware12c/ofr1/user_projects/domains/SBErpc12/bin/start...
├─16913 /usr/java/jdk1.8.0_121/bin/java -server -Xms256m -Xmx1024m -Dweblogic.Name=WLS_REPORTS ...
├─17267 /bin/sh /home/oracle/Oracle/Middleware12c/ofr1/user_projects/domains/SBErpc12/bin/start...
├─17318 /usr/java/jdk1.8.0_121/bin/java -server -Xms256m -Xmx1024m -Dweblogic.Name=WLS_SBSWEBSE...
├─17645 /bin/sh /home/oracle/Oracle/Middleware12c/ofr1/user_projects/domains/SBErpc12/reports/b...
├─17663 /home/oracle/Oracle/Middleware12c/ofr1/bin/rwserver server=RptSvr_server01 batch=yes ui...
├─17664 tee -a reports.log
├─17679 /bin/sh /home/oracle/Oracle/Middleware12c/ofr1/user_projects/domains/SBErpc12/reports/b...
└─17697 /home/oracle/Oracle/Middleware12c/ofr1/bin/rwserver server=RptSvr_server02 batch=yes ui...
```

Template Architecture

... The Services, Automated – Weblogic Managed Services

```
[root@ottos12 oracle7-deploy]# systemctl status webnm
• webnm.service - AdminServer WLS_Forms WLS_Reports
   Loaded: loaded (/usr/lib/systemd/system/webnm.service; enabled; vendor preset: disabled)
   Active: active (running) since Wed 2017-08-30 10:54:49 CEST; 1 day 10h ago
   Process: 14750 ExecStop=/home/oracle/WlsScripts/webnm.sh stop (code=exited, status=0/SUCCESS)
   Process: 15257 ExecStart=/home/oracle/WlsScripts/webnm.sh start (code=exited, status=0/SUCCESS)
   Main PID: 15305 (java)
   CGroup: /system.slice/webnm.service
           └─15305 /home/oracle/Oracle/Middleware12c/ofr1/oracle_common/jdk/bin/java -classpath /home/oracle/Oracle/Midd

Aug 30 10:54:47 ottos12.softbase.ch webnm.sh[15257]: Successfully started server WLS_SBSWEBSERVICE ...
Aug 30 10:54:47 ottos12.softbase.ch webnm.sh[15257]: Starting server RptSvr_server01 ...
Aug 30 10:54:48 ottos12.softbase.ch webnm.sh[15257]: Successfully started server RptSvr_server01 ...
Aug 30 10:54:48 ottos12.softbase.ch webnm.sh[15257]: Starting server RptSvr_server02 ...
Aug 30 10:54:48 ottos12.softbase.ch webnm.sh[15257]: Successfully started server RptSvr_server02 ...
Aug 30 10:54:48 ottos12.softbase.ch webnm.sh[15257]: Starting server RptSvr_ottos_aserp_1 ...
Aug 30 10:54:49 ottos12.softbase.ch webnm.sh[15257]: Successfully started server RptSvr_ottos_aserp_1 ...
Aug 30 10:54:49 ottos12.softbase.ch webnm.sh[15257]: Successfully disconnected from Node Manager.
Aug 30 10:54:49 ottos12.softbase.ch webnm.sh[15257]: Exiting WebLogic Scripting Tool.
Aug 30 10:54:49 ottos12.softbase.ch systemd[1]: Started AdminServer WLS_Forms WLS_Reports.
```

Template Architecture

... The Services, Automated – Tomcat Services

```
[root@ottos12 oracle7-deploy]# systemctl status tomcat.service
• tomcat.service - Apache Tomcat Web Application Container
  Loaded: loaded (/usr/lib/systemd/system/tomcat.service; enabled; vendor preset: disabled)
  Active: active (running) since Wed 2017-08-30 10:11:49 CEST; 1 day 11h ago
  Main PID: 1118 (java)
  CGroup: /system.slice/tomcat.service
          └─1118 /usr/bin/java -classpath /usr/share/tomcat/bin/bootstrap.jar:/usr/share/tomcat/bin/tomcat-juli.jar:/us...

Aug 30 17:03:29 ottos12.softbase.ch server[1118]: security.forceHTTPS=true
Aug 30 17:03:29 ottos12.softbase.ch server[1118]: security.maxEntries=2000
Aug 30 17:03:29 ottos12.softbase.ch server[1118]: db.password=*****
Aug 30 17:03:29 ottos12.softbase.ch server[1118]: db.username=APEX_REST_PUBLIC_USER
Aug 30 17:03:29 ottos12.softbase.ch server[1118]: Aug 30, 2017 5:03:29 PM
Aug 30 17:03:29 ottos12.softbase.ch server[1118]: WARNING: *** jdbc.MaxLimit in configuration |apex|rt| is using a ...t ***
Aug 30 17:03:29 ottos12.softbase.ch server[1118]: Aug 30, 2017 5:03:29 PM
Aug 30 17:03:29 ottos12.softbase.ch server[1118]: WARNING: *** jdbc.InitialLimit in configuration |apex|rt| is usin...t ***
Aug 30 17:03:29 ottos12.softbase.ch server[1118]: Aug 30, 2017 5:03:29 PM oracle.ucp.common.UniversalConnectionPool...Timer
Aug 30 17:03:29 ottos12.softbase.ch server[1118]: INFO: inactive connection timeout timer scheduled
Hint: Some lines were ellipsized, use -l to show in full.
```

Template Architecture

... The Services, Automated – Apache Services

```
[root@ottos12 oracle7-deploy]# systemctl status httpd.service
• httpd.service - The Apache HTTP Server
  Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; vendor preset: disabled)
  Active: active (running) since Wed 2017-08-30 10:12:02 CEST; 1 day 11h ago
    Docs: man:httpd(8)
          man:apachectl(8)
 Main PID: 1247 (httpd)
  Status: "Total requests: 10335; Current requests/sec: 0; Current traffic:  0 B/sec"
  CGroup: /system.slice/httpd.service
          └─ 1247 /usr/sbin/httpd -DFOREGROUND
          └─ 5347 /usr/sbin/httpd -DFOREGROUND
          └─23489 /usr/sbin/httpd -DFOREGROUND
          └─24006 /usr/sbin/httpd -DFOREGROUND
          └─29163 /usr/sbin/httpd -DFOREGROUND
          └─29970 /usr/sbin/httpd -DFOREGROUND
          └─30025 /usr/sbin/httpd -DFOREGROUND
          └─30396 /usr/sbin/httpd -DFOREGROUND
          └─30428 /usr/sbin/httpd -DFOREGROUND
          └─30438 /usr/sbin/httpd -DFOREGROUND
          └─30937 /usr/sbin/httpd -DFOREGROUND
          └─31584 /usr/sbin/httpd -DFOREGROUND
          └─31799 /usr/sbin/httpd -DFOREGROUND
          └─31948 /usr/sbin/httpd -DFOREGROUND
          └─32000 /usr/sbin/httpd -DFOREGROUND
```

Template Architecture

... The Services, Automated – Oracle Cluster Files System for shared Forms & Reports objects (HA – option)

```
[root@ottos12 oracle7-deploy]# systemctl status httpd.service
• httpd.service - The Apache HTTP Server
  Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; vendor preset: disabled)
  Active: active (running) since Wed 2017-08-30 10:12:02 CEST; 1 day 11h ago
    Docs: man:httpd(8)
          man:apachectl(8)
 Main PID: 1247 (httpd)
  Status: "Total requests: 10335; Current requests/sec: 0; Current traffic:  0 B/sec"
  CGroup: /system.slice/httpd.service
          └─ 1247 /usr/sbin/httpd -DFOREGROUND
             └─ 5347 /usr/sbin/httpd -DFOREGROUND
                └─ 23489 /usr/sbin/httpd -DFOREGROUND
                   └─ 24006 /usr/sbin/httpd -DFOREGROUND
                      └─ 29163 /usr/sbin/httpd -DFOREGROUND
                         └─ 29970 /usr/sbin/httpd -DFOREGROUND
                            └─ 30025 /usr/sbin/httpd -DFOREGROUND
                               └─ 30396 /usr/sbin/httpd -DFOREGROUND
                                  └─ 30428 /usr/sbin/httpd -DFOREGROUND
                                     └─ 30438 /usr/sbin/httpd -DFOREGROUND
                                        └─ 30937 /usr/sbin/httpd -DFOREGROUND
                                           └─ 31584 /usr/sbin/httpd -DFOREGROUND
                                              └─ 31799 /usr/sbin/httpd -DFOREGROUND
                                                 └─ 31948 /usr/sbin/httpd -DFOREGROUND
                                                    └─ 32000 /usr/sbin/httpd -DFOREGROUND
```

Value for your organization

... Benefits summed up

- **Fast, easy and error free configuration of WLS Servers**
- **Fully automated deployment of all services via Apache**
- **No extra license for ORDS / APEX and Forms / Reports**
- **Fully automated start and stop of servers for high availability**
- **Sharing of Forms / Reports Objects with ocfs2 for high availability**

Value for your organization

... You are in control of hosting

- **On-premise or nearly any hosting service**
- **Mix test on-premise and Hosted production**
- **Metric and terms becomes transparent**

Value for your organization

... How can we best help you?

- **Advice on method – value-added consulting**
- **Download a one-off copy of the Template for a small fee**
- **Add a maintenance service to the Template**
- **Offer a complete dynamic PaaS – hosted *anywhere***