

# OneProxy for Oracle

DBGEEK数据库沙龙（上海站）

平民软件

# 简介

- 个人
  - 程序员 -> DBA -> 架构师 -> (?)
  - 小公司 -> eBay -> 阿里巴巴(支付宝)平民软件
  - SQLULDR2 -> AUL/MyDUL
- 公司
  - 数据相关基础技术产品和方案设计
  - 产品介绍
    - OneSQL: 深度定制的MySQL版本
    - OneProxy: 基于各种数据库协议的中间件 (Oracle/SQL Server/MySQL/PostgreSQL/Redis)

# 层次

业务

应用  
(业务层/架构层)

数据  
(数据库/缓存/大数据)

IDC  
(网络、主机、存贮)

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# Oracle

- ASM
- 数据文件
- 日志文件
- SGA
- 参数

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nips.com/hehe



# Net8



又熟悉(上海站)  
又陌生  
数据库沙



# 协议层

功能	MySQL	PostgreSQL	SQL Server	Oracle
连接池	支持	支持	支持	支持
读写分离	支持	支持	支持	支持
分库分表	支持	支持		
防火墙	支持	支持	支持	支持
SQL Audit	支持	支持	支持	支持
SQL Spy	支持	支持	支持	支持
.....				

# 连接池

- 连接数
  - 如何面对应用的虚拟化布署?
- 短连接
  - 如何面对PHP的短连接?

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# 读写分离

- 互联网类业务
  - 应用双数据源?
  - 数据库状态监控?
  - 数据库复制时延?
  - 备库流量调整?

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# 防火墙

- 数据库隔离
  - 隔离网络层
  - 限制登录用户
  - 限制OCI登录
- 防止SQL注入
  - 数据安全

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# SQL Audit

- 敏感数据
  - 谁在访问敏感数据？
- 数据泄露
  - 大记录集访问记录

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# SQL Spy

- 数据库

- 足够丰富的信息?

- 面向数据库，非面向应用!

- 应用层

- 会话：追踪某个会话

- 事务：分析事务结构

- 实时：秒级流量分析

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# 表级统计

Table Name	SQLs	Insert			Update		
		Exec	Rows	Time	Exec	Rows	
sbtest	9	140496	140496	14666	421488	421488	
wp_commentmeta	1	0	0	0	0	0	
wp_comments	6	0	0	0	0	0	
wp_layerslider	2	0	0	0	0	0	
wp_options	9	9	9	9	14	14	
wp_postmeta	12	0	0	0	0	0	
wp_posts	36	0	0	0	0	0	
wp_term_relationships	16	0	0	0	0	0	
wp_term_taxonomy	21	0	0	0	0	0	
wp_terms	18	0	0	0	0	0	
wp_usermeta	2	0	0	0	0	0	
wp_users	2	0	0	0	0	0	

# 关联统计

Home Database Statspack Realtime(10s) Diagnose QoS Control OneXSoft.com

(Since 2016-10-12 07:10:58, Trans Debug, Total 6 rows)

Tabes	Exec	Trans
qry: wp_terms, wp_term_taxonomy	2	
qry: wp_term_taxonomy, wp_term_relationships	2	
qry: wp_comments, wp_posts	0	
qry: wp_posts, wp_term_relationships	0	
qry: wp_terms, wp_term_relationships, wp_term_taxonomy	0	
qry: wp_posts, wp_postmeta	0	

Power by OneXSoft Co, Ltd. (<http://www.onexsoft.com>)

# Top SQL

Hashcode	SQL Text	Audit	Tabs	Exec Total	Exec (%)
3371314836	SELECT c from sbtest where id = ?	0	1	1521700	52.63
1292519010	UPDATE sbtest set k = k + ? where id = ?	0	1	304338	10.53
894579008	SELECT c from sbtest where id between ? and ?	0	1	152170	5.26
3602687072	DELETE from sbtest where id = ?	0	1	152169	5.26
538621847	INSERT INTO sbtest values(?, ?, ?, ?)	0	1	152169	5.26
2029413728	UPDATE sbtest set c = ? where id = ?	0	1	152169	5.26
175330441	SELECT DISTINCT c from sbtest where id between ? and ? order by c	0	1	152169	5.26
1398642423	SELECT SUM(K) from sbtest where id between ? and ?	0	1	152169	5.26
3552894718	SELECT c from sbtest where id between ? and ? order by c	0	1	152169	5.26
1590913023	SHOW TABLE STATUS LIKE ?	0	0	152	0.01
4116682686	SELECT option_value FROM wp_options WHERE option_name = ? LIMIT ?	0	1	18	0.00
1364687858	SELECT autoload FROM wp_options WHERE option_name = ?	0	1	17	0.00
1313595165	UPDATE wp_options SET option_value = ? WHERE option_name = ?	0	1	14	0.00
1127659693	DELETE FROM wp_options WHERE option_name = ?	0	1	9	0.00
3554104764	INSERT INTO wp_options(option_name , option_value , autoload) VALUES(?, ?, ?) ON DUPLICATE KEY UPDATE option_name = VALUES(option_name) , option_value = VALUES(option_value) , autoload = VALUES(autoload)	0	1	8	0.00
4264297672	SELECT option_name , option_value FROM wp_options WHERE autoload = ?	1	1	2	0.00

# 事务

Home Database Statspack Realtime(10s) Diagnose QoS Control OneXSoft.com

(Since 2016-10-12 07:10:58, Trans SQL Debug, Sc

SQL List	SQL Text	Exec	Roll Back
2029413728, 17533044 1, 1292519010, 139864 2423, 3371314836, 894 579008, 538621847, 35 52894718, 3602687072	UPDATE sbtest set c = ? where id = ?; SELECT DISTINCT c from sbtest where id between ? and ? order by c; UPDATE sbtest set k = k + ? where id = ?; SELECT SUM(K) from sbtest where id between ? and ?; SELECT c from sbtest where id = ?; SELECT c from sbtest where id between ? and ?; INSERT INTO sbtest values(?, ?, ?, ?); SELECT c from sbtest where id between ? and ? order by c; DELETE from sbtest where id = ?;	167464	0

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# 客户端

Home Database Statspack Realtime(10s) Diagnose QoS Control OneXSoft.com

(Since 2016-10-12 07:10:58,

Client Address	Tabs	SQLs	Trxs	Login	Auth	Fail	Query	Error	Insert	Update	Delete
127.0.0.1	12	100	1	325	325	0	3391779	0	16150 5	484502	16150 5

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# 实时分析

(2016-10-12 07:50:28, IP: 127.0.0.1, Realtime Top SQL, Order By Exec, Total: 100 rows) [Next](#)

Text	Audit	Tab	Exec Total	Exec (%)	Tran	Fail	Time Total	Time (%)	Avg Time	Max Time	Rows Total	Rows (%)	Avg Rows
ere id = ?	0	1	6550	52.60	6550	0	678.1	26.96	0.1	1.1	6550	3.89	1.00
+ ? where id = ?	0	1	1311	10.53	1311	0	200.8	7.98	0.2	21.5	1311	0.78	1.00
es(?, ?, ?, ?)	0	1	656	5.27	656	0	67.4	2.68	0.1	0.4	656	0.39	1.00
re id = ?	0	1	656	5.27	656	0	67.3	2.68	0.1	0.4	656	0.39	1.00
where id = ?	0	1	656	5.27	656	0	70.3	2.79	0.1	0.6	656	0.39	1.00
ere id between ? and	0	1	655	5.26	655	0	320.8	12.75	0.5	1.1	65500	38.86	100.00
sbtest where id bet	0	1	655	5.26	655	0	829.8	32.99	1.3	2.6	27050	16.05	41.30

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面向应用，海阔天空

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# 2008

- 从eBay到支付宝
- 单机单库
  - 单个ZHIFB用户、800个表
  - 代码即文档，只有代码
  - 人员流动性强，人不靠谱
- 编写拆分计划
  - 可执行的详细计划
  - 可信的效果分析

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# 实际场景(三个月前)



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OneXSoft

trx: BOSS_RESOURCE, BOSS_ROLE, BOSS_ACCOUNT_ROLE, BOSS_ROLE_RESOURCE	2233	2
trx: BOSS_AUCTION_TRACK_NOTE, BOSS_CHECK_REPORT_LICENSE, BOSS_CHECK_REPORT_BASE, BOSS_CHECK_REPORT, BOSS_CHECK_SHORT_MESSAGE, BOSS_CHECK_ORIGINAL_PHOTO, BOSS_PHONE_HISTORY_CHECK, BOSS_CHECK, BOSS_CHECK_STATUS_TRACK, BOSS_AUCTION_AUTO_INFO	1888	3
trx: BOSS_FOLLOW_WORKFLOW, BOSS_CITY, BOSS_SUCCESS_AUCTION, BOSS_DATA_ROLE	1756	21
trx: BOSS_CHECK_REMARK, BOSS_CHECK, BOSS_DEPT, BOSS_JOB, BOSS_ACCOUNT	1681	4
trx: BOSS_CHECK_REPORT_INJURE_EXTERIOR, BOSS_CHECK_REPORT_INJURE_SKELETON, BOSS_AUCTION_BLACK_LIST, BOSS_CHECK_REPORT_LICENSE, BOSS_CHECK_REPORT_BASE, BOSS_DEPT, BOSS_CHECK_REPORT, BOSS_CHECK_REPORT_INJURE_INTERIOR, BOSS_CHECK_ORIGINAL_PHOTO, BOSS_ACCOUNT, BOSS_CHECK, BOSS_CHECK_STATUS_TRACK, BOSS_JOB, BOSS_CHECK_REPORT_INJURE_EQUIPMENT	1668	12
trx: BOSS_AUCTION_OPERATOR_ACTION, BOSS_AUCTION_OPERATOR_INFO, BOSS_DEPT, BOSS_FOLLOW_WORKFLOW, BOSS_SUCCESS_AUCTION, BOSS_SHORT_MESSAGE, BOSS_MESSAGE_TEMPLATE	1652	5
trx: BOSS_ACCOUNT_ROLE, BOSS_ACCOUNT, BOSS_DATA_ROLE	1621	5
trx: BOSS_CHECK, BOSS_INVITATION	1562	2
trx: BOSS_CHECK, BOSS_PHONE_HISTORY_CHECK, BOSS_DEPT, BOSS_JOB, BOSS_ACCOUNT_TAKE, BOSS_ACCOUNT, BOSS_CHECK_STATUS_TRACK	1525	1
trx: BOSS_SUCCESS_AUCTION, BOSS_SUCCESS_PRICE_PERCENT	1521	1
trx: BOSS_AUCTION_OPERATOR_INFO, BOSS_FOLLOW_WORKFLOW, BOSS_SUCCESS_AUCTION	1428	5
trx: BOSS_DEPT, BOSS_ACCOUNT_ROLE, BOSS_ACCOUNT, BOSS_DATA_ROLE	1347	1

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# 实际场景(现在)

qry: BOSS_INVITATION_FAIL, BOSS_INVITATION, BOSS_INVITATION_QUALITY_CHECK	49570	
qry: BOSS_AUCTION_OPERATOR_INFO, BOSS_SUCCESS_AUCTION	49568	
qry: BOSS_SUCCESS_DEALER_ADJUST, BOSS_FOLLOW_WORKFLOW, BOSS_SUCCESS_AUCTION	39256	
qry: BOSS_FOLLOW_WORKFLOW, BOSS_SUCCESS_AUCTION	38765	
qry: BOSS_SUCCESS_AUCTION, boss_success_auction_fail	36317	
qry: BOSS_INVITATION_AREA_DETAIL, BOSS_INVITATION_CITY_AREA	23808	
qry: BOSS_FOLLOW_WORKFLOW, BOSS_SUCCESS_AUTO_ALLOCATION, BOSS_SUCCESS_AUCTION	21744	
tx: BOSS_PHONE_HISTORY_INCREMENT, BOSS_AUCTION_OPERATOR_INFO, BOSS_ACCOUNT_TAKE	21691	1
tx: ZONE, BOSS_INVITATION	19719	2
tx: BOSS_INVITATION_FAIL, BOSS_INVITATION, BOSS_INVITATION_QUALITY_CHECK	19704	2
qry: BOSS_DEPT, BOSS_JOB, BOSS_ACCOUNT	17561	
qry: BOSS_CHECK, BOSS_FOLLOW_WORKFLOW, BOSS_SUCCESS_AUCTION	17375	
qry: BOSS_AUCTION_REMARKS_INFO, BOSS_SUCCESS_AUCTION	16714	
qry: BOSS_FINANCE_REMARK, BOSS_AUCTION_REMARKS_INFO, BOSS_SUCCESS_AUCTION, BOSS_RECEPTION_DEPART, BOSS_RECEPTION_REMARKS_INFO	16040	
qry: BOSS_INVITATION_SCHEDULE, BOSS_INVITATION_AREA_DETAIL, BOSS_INVITATION_CITY_AREA	15468	
qry: boss_deal_invite_quality_check, BOSS_FOLLOW_WORKFLOW, BOSS_SUCCESS_AUTO_ALLOCATION, BOSS_SUCCESS_AUCTION	13806	
tx: BOSS_INVITATION_SCHEDULE, BOSS_INVITATION_FOLLOW_INFO, BOSS_INVITATION_INTERVAL, BOSS_INVITATION	13796	53
qry: BOSS_HELP_CHECK, BOSS_HELP_CHECK_DEALER	13685	
qry: BOSS_SOURCE, boss_source_city	12418	
qry: BOSS_INVITATION_CITY_AREA, BOSS_INVITATION_AREA_DETAIL	11902	
qry: BOSS_ACCOUNT_ROLE, BOSS_ACCOUNT	11563	
qry: BOSS_DEPT, BOSS_ACCOUNT_ROLE, BOSS_ACCOUNT	10427	
tx: BOSS_INVITATION_FOLLOW_INFO, BOSS_DEPT, BOSS_JOB, BOSS_INVITATION, BOSS_ACCOUNT	10112	122

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# IP统计

(Since 2016-10-20 02:43:11, IP Statistics, Order By SQLs, Total: 47 rows)

Client Address	Tabs	SQLs	Trxs	Login	Auth	Fail	Query	Error	Insert	Update	Delete	Select	Trans	Roll	Time	Rows	Row Dist (1/2/3/4/5)	Audit	Security	Net Recv(KB)	Net Send(KB)
172.16.5.13	124	1066 5	2706	5	5	0	1820488	0	64717	50752	2275	142632 9	76217	3	7706676	1941796 3	315796/26089/2/18/0	0	0	508542	3029435
172.16.5.15	122	1059 1	2638	4	4	0	1815100	0	65040	48814	1756	142410 6	75679	9	7668903	194785 3	315911/25901/3/21/0	0	0	508394	3029795
172.16.5.14	123	1042 8	2673	4	4	0	1814843	0	64630	50273	2345	142304 0	75664	5	7596220	1897037 6	315330/25814/2/10/0	0	0	507559	3018776
172.16.5.16	109	3890	786	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0/0/0/0	0	0	0	0
172.16.5.213	121	1517	351	20	20	0	3786	0	11186	1803	0	3116	150	0	31522	56199	481/111/0/0/0	0	0	1104	9334
172.16.5.43	42	174	52	21	21	0	153027	0	11186	1803	0	87805	17122	13	332201	134560	2938/23/0/0/0	0	0	29874	108630
172.16.5.44	42	173	52	22	22	0	153178	0	11360	1727	0	87693	17192	20	329046	132650	2933/22/0/0/0	0	0	29833	108853
172.16.5.45	42	171	53	21	21	0	152633	0	11175	1896	0	87376	17106	14	329714	134762	2980/23/0/0/0	0	0	29904	109549
172.16.5.62	45	136	0	44	44	0	184022	0	37313	42128	4413	100029	0	0	186981	1025864 9	2867/22408/821/0/0	0	0	41938	269934
172.16.5.46	37	132	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0/0/0/0	0	0	0	0
172.16.5.215	35	95	25	20	20	0	1107	0	49	30	0	572	112	0	2210	5372	31/20/0/0/0	0	0	163	817
172.16.5.53	30	83	6	174	173	0	12757	0	15	6	0	6972	5	1	13669	123034	3385/203/0/0/0	0	0	1719	5120
172.16.5.52	30	82	5	176	176	0	13526	0	17	13	0	7708	13	0	13106	127437	3489/207/0/0/0	0	0	1924	5508
172.16.5.51	30	79	6	176	175	0	12821	0	13	9	0	7220	10	1	13115	122333	3445/200/0/0/0	0	0	1734	5197
172.16.5.40	35	76	29	3	3	0	556135	0	13630	18820	0	72741	19281	0	52359	83808	3/3/0/0/0	0	0	43714	82702
172.16.5.41	35	75	27	2	2	0	559982	0	13854	19490	0	74785	19250	0	53513	86394	2/2/0/0/0	0	0	45060	87348
172.16.5.39	35	75	26	1	1	0	556935	0	13852	19781	0	74459	19215	0	53741	86613	1/1/0/0/0	0	0	44854	84539

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# IP实时

(2016-10-20 16:57:21, Realtime IP Statistics, Order By Query, Total: 47 rows)

Client Address	Tabs	SQLs	Trxs	Login	Auth	Fail	Query	Error	Insert	Update	Delete	Select	Trans	Roll	Time	Rows	Row Dist (1/2/3/4/5)	Audit	Security	Net Recv(KB)	Net Send(KB)
172.16.5.13	124	10665	2706	0	0	0	907	0	28	28	0	723	36	0	4360	10308	149/14/0/0/0	0	0	278	1624
172.16.5.14	123	10430	2673	0	0	0	730	0	23	11	0	600	28	0	2456	7850	198/9/0/0/0	0	0	177	995
172.16.5.15	122	10593	2638	0	0	0	707	0	30	20	0	551	82	0	2272	5881	120/6/0/0/0	0	0	189	1081
172.16.5.40	35	76	29	0	0	0	142	0	4	1	0	24	1	0	16	26	0/0/0/0/0	0	0	14	83
172.16.5.39	35	75	26	0	0	0	133	0	0	8	0	13	1	0	11	24	0/0/0/0/0	0	0	11	7
172.16.5.41	35	75	27	0	0	0	140	0	2	0	0	0	0	0	1	2	0/0/0/0/0	0	0	2	0
172.16.5.213	121	1518	351	0	0	0	83	0	1	1	0	72	3	0	164	3025	10/6/0/0/0	0	0	29	480
172.16.5.43	42	174	52	0	0	0	57	0	6	3	0	30	6	0	67	38	0/0/0/0/0	0	0	12	43
172.16.5.44	42	173	52	0	0	0	41	0	2	0	0	27	4	0	85	26	0/0/0/0/0	0	0	7	28
172.16.5.45	42	171	53	0	0	0	41	0	3	0	0	29	3	0	71	57	2/0/0/0/0	0	0	7	22
172.16.5.34	12	32	33	0	0	0	24	0	0	4	0	8	4	0	17	12	0/0/0/0/0	0	0	5	14
172.16.5.35	12	32	33	0	0	0	15	0	0	2	0	7	2	0	5	9	0/0/0/0/0	0	0	2	8
172.16.5.62	45	136	0	0	0	0	14	0	0	6	0	8	0	0	13	1266	0/4/0/0/0	0	0	3	30
172.16.5.52	30	82	5	0	0	0	6	0	0	0	0	6	0	0	3	5	0/0/0/0/0	0	0	1	1
172.16.5.33	12	34	33	0	0	0	6	0	0	1	0	2	1	0	2	3	0/0/0/0/0	0	0	1	3
172.16.5.51	30	79	6	0	0	0	3	0	0	0	0	0	0	0	2	0	0/0/0/0/0	0	0	0	0
172.16.5.53	30	83	6	0	0	0	3	0	0	0	0	0	0	0	3	0	0/0/0/0/0	0	0	0	0
172.16.5.111	7	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0/0/0/0	0	0	0	0

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# Live Demo

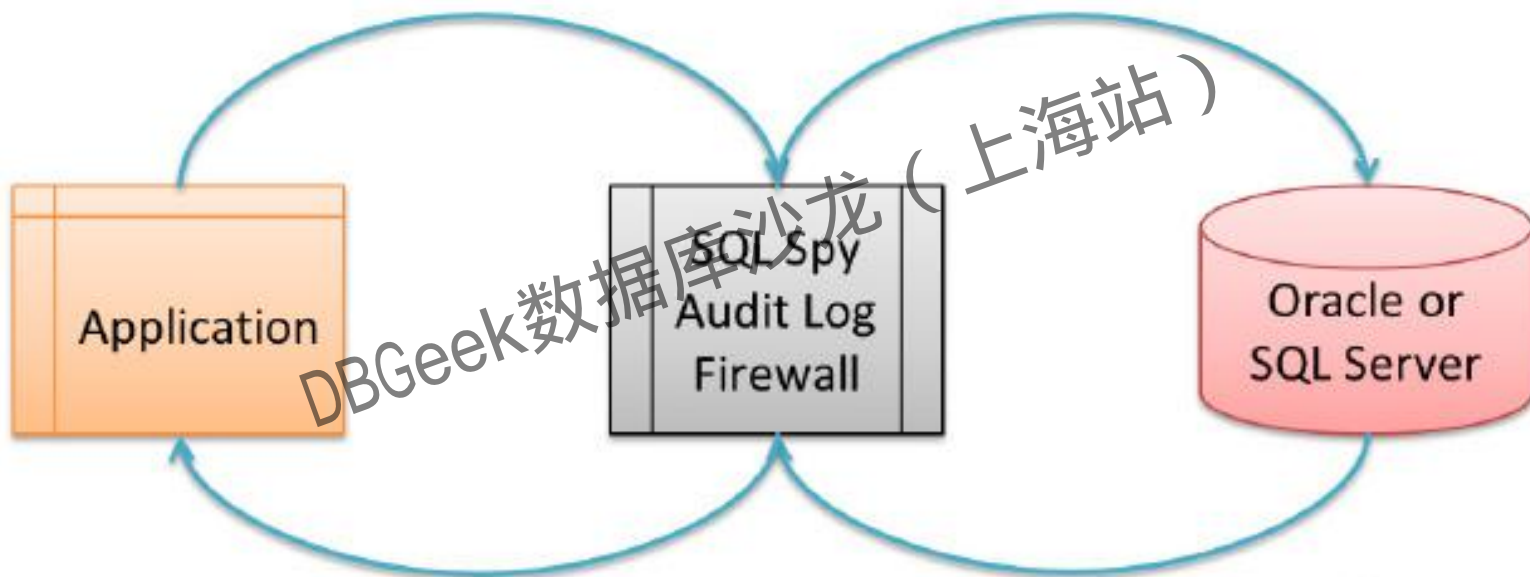
- <http://www.onexsoft.com:8080/>

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# 部署

OneProxy for Oracle/SQL Server



Packet forward only without modification

@平民架构  
weibo.com/dbatools

# 启动

```
SNMP OFF
Listener Parameter File D:\Oracle\product\11.2.0\network\admin\listener.ora
Listener Log File d:\oracle\product\11.2.0\log\diag\tnslsnr\ANYSQL\listener\alert\log.xml
Listening Endpoints Summary...
  (DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=ANYSQL)(PORT=1521)))
Services Summary...
Service "ANYSQL" has 1 instance(s).
  Instance "ANYSQL", status UNKNOWN, has 1 handler(s) for this service...
The command completed successfully

D:\IECache\Download\oneproxy.oracle>. \oneproxy-for-oracle.exe
OneProxy for Oracle(1.4.0.0929 Release), Build: 2016/09/29
(C) Copyright 2016 by OneXSoft, all rights reserved

[2016-10-12 15:46:29] Message: Create the thread pool(size=8)...
[2016-10-12 15:46:29] Message: Thread pool created
[2016-10-12 15:46:29] Message: Startup paramters: backend=(127.0.0.1:1521) port=
8221 monitor-port=8080 debug=false
[2016-10-12 15:46:29] Message: Proxy started on port 8221. PID=6096
```

# 连接

```
C:\sqlcl>bin\sql system/oracle@127.0.0.1:8221:ANYSQL
```

```
SQLcl: 连接 铜?4.2.0 Production, 连接 磁?渦 鑄?渦?錦?溪 12 15:48:57 2016
```

```
銅?深?錄?鏈?<c> 1982, 2016, Oracle 鈹?縉?鐳?堅?鏈?交?錄?十?
```

```
宸?茶?縉?土?垠:
```

```
Oracle Database 11g Enterprise Edition Release 11.2.0.1.0 - 64bit Production  
With the Partitioning option
```

```
SQL> select * from tab where rownum < 3;
```

TNAME	TABTYPE	CLUSTERID
AQ\$DEF\$_AQCALL	VIEW	
AQ\$DEF\$_AQERROR	VIEW	

```
SQL>
```

# 版本

- Oracle 11g R2 Server
- Oracle 11g R2 JDBC Driver
- Oracle 11g R2 OCI (Coming soon!)

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Thanks

**Q&A**

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