



数据技术嘉年华

Data Technology Carnival

云·数据·智能 - 数聚价值智胜未来

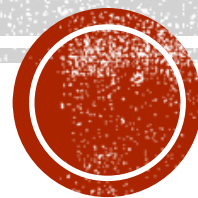
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数据库安全网关

OneGuard for Oracle/SQL Server/MySQL

平民软件 (<http://www.onexsoft.com>)



第七屆



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安全事件

- 比特币勒索
 - 中招者不计其数
- 数据泄密
 - CS程序模块替换
 - 用户名/密码缺乏保护



第七届



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数据安全

- 数据库隔离
- 隐藏IP地址

隔离

审计

- 登录/操作日志
- 日志统计分析

拦截

登录

- 仅允许应用SQL
- 阻止危险操作

- 登录身份验证
- 应用身份验证



第七届

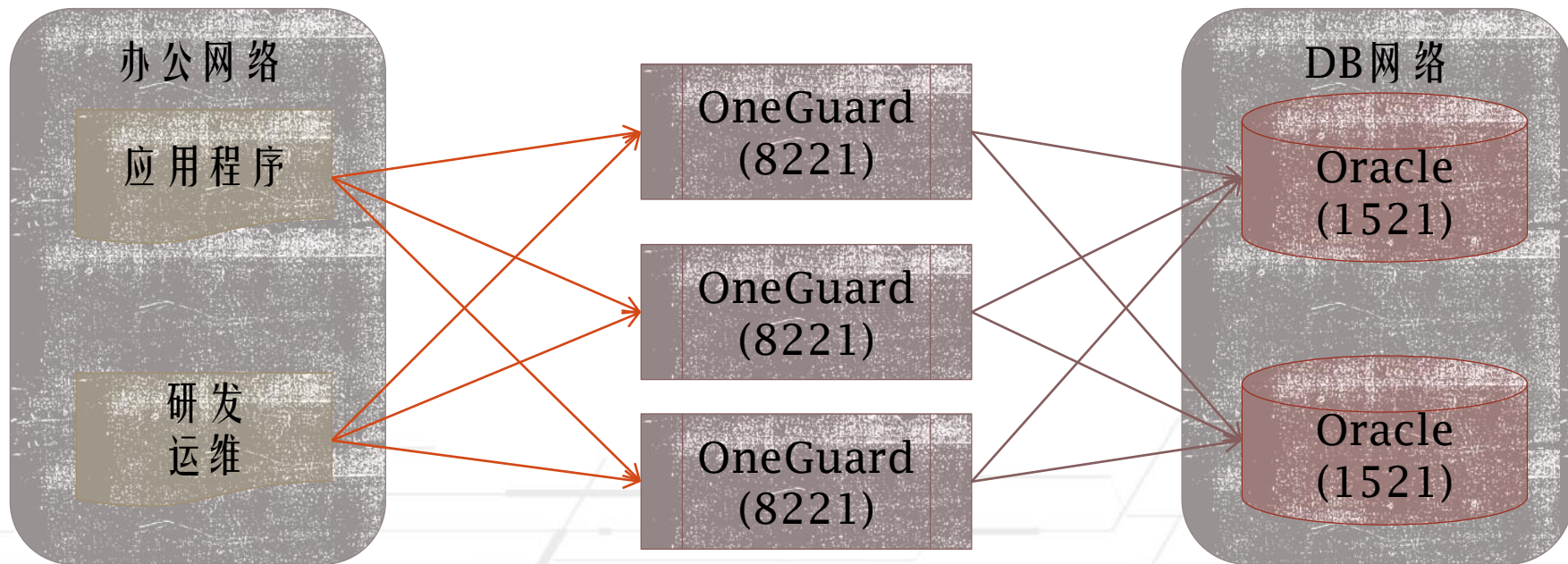


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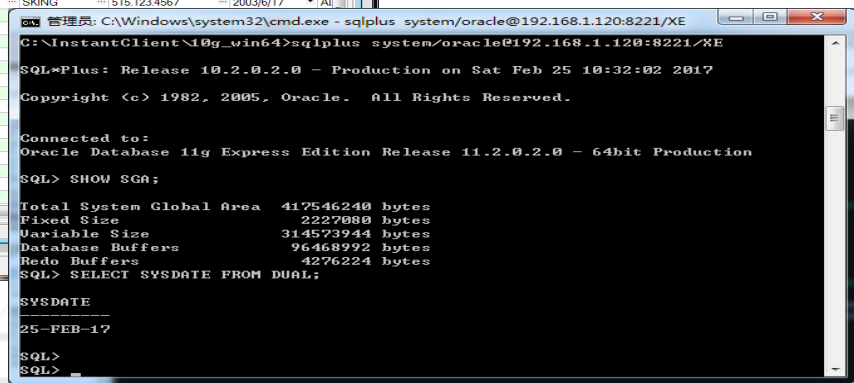
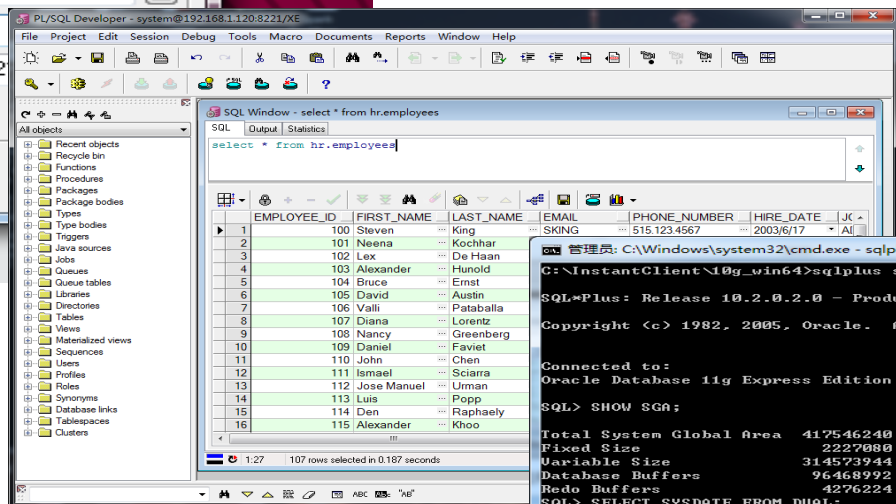
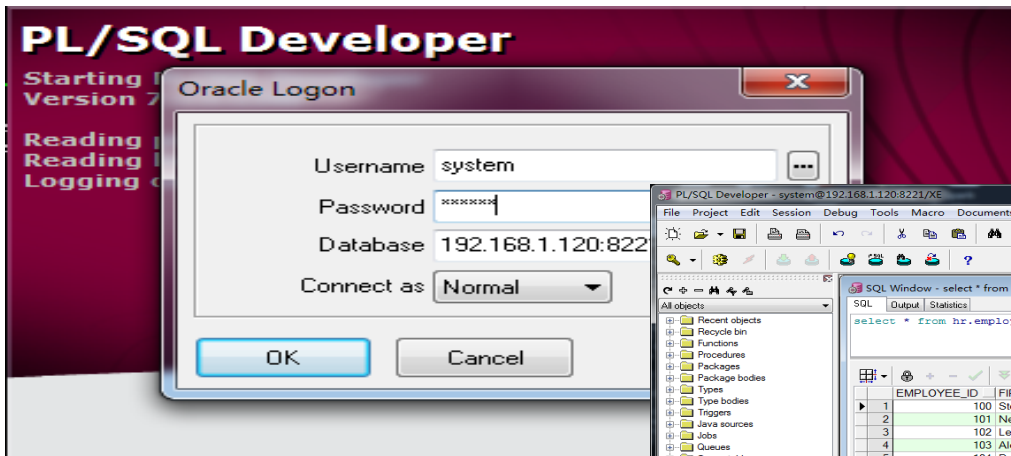


透传模式

- 原包转发，支持JDBC & OCI协议，实现多机多活的布署模式，利用TNS的Failover & Load Balance做负载均衡。



应用透明



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方案比较

	隔离	审计	登录	拦截
跳板机	部份, 仅针对人工操作	OS命令级, 容易绕过	通过OS账号限制	OS命令级, 容易绕过
DB审计	无	部份审计, 性能问题严重	无	无
旁路流量	无	有, 非100%	无	无
OneGuard	仅允许DB协议 隐藏物理地址	实现100%审计, 单实例支持10万QPS	可验证登录者的身份	可以SQL执前行实现拦截



第七届



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物理隔离

- 通信协议隔离
 - 禁止Shell登录数据库
 - 禁止其他非Oracle/SQL Server客户端的访问
- 隐藏物理地址
 - Oracle/SQL Server真实IP不可见
 - Oracle/SQL Server与应用和办公网络隔离
 - OneGuard作为DBA和应用的“跳板机”
 - 可用一个IP地址访问不同的Oracle库
- 对数据库无侵入
 - 无须布署在Oracle/SQL Server机器上，完全独立布署。
 - 无须数据库用户名/密码信息，也无须创建对象。



完整审计

- 100%审计
 - 所有的流量经过OneGuard
 - OneGuard识别TNS/TDS协议的每个包
 - 实时准确记录所有的操作
- 高效审计
 - 仅需处理TNS/TDS协议流量，无须处理额外的4层协议包。
 - 对TNS/TDS协议实现先拷贝后转发再分析的高性能处理。
- 绑定变量
 - 对绑定变量进行还原，反向形成可读的SQL语句。
 - 跟踪每个会话操作历史，记录全面的审计信息。
- 灵活规则配置
 - 可以灵活地设置审计规则，抓住重点内容。



登录验证

- 对CS应用现有安全机制偏弱
 - 用户名/密码广为传播
- 对CS应用强化登录身份验证
 - 设置可登录的数据库用户
 - 设置可登录的时间段
 - 设置可登录的客户端
 - IP地址、机器名、域名
 - 设置可登录的程序名字
- 对不合规则的登录记录行为日志
 - 可及时发现潜在风险
- 数据库密码保护
 - 实现前后端密码分离



危险拦截

- 可在SQL执行前拦截
 - 禁止没有Where条件的Update操作
 - 禁止没有Where条件的Delete操作
- 可禁止DDL语句执行
 - “比特币勒索病毒”通过客户端工具的自动执行脚本，利用DDL权限，创建难以发现的危险存储过程，潜伏后发作。
- 可禁止特定应用访问
 - 禁止exp/expdp工具访问
- 可禁止特定用户访问
 - 禁止使用DBA账号登录
- 可对应用实施SQL白名单



■ 审计内容

- 执行时间
- 全局会话ID
- 客户端IP地址
- Oracle实例名
- 客户端机器名
- 客户端OS用户名
- SQL执行结果
- SQL返回记录数
- SQL特征Hash
- SQL执行时间
- SQL语句类型
- SQL语句



```
[hsproxy][2017-11-10 09:32:30][SQLAUDIT][172.18.12.7:3839][128.0.252.240:1521][314][REDH][hisdbtaf1][fsd][WORKGROUP\HS_GH_MZ_6F_YK1][HisFrame.exe][00000][0][1621614138][1][1][49aaad84-f518-40ad-ae1a-4623c2c0c5af][SELECT]SELECT YPJX FROM REDH.HV_YPX WHERE YPBH = 236147 /*:1*/
[hsproxy][2017-11-10 09:32:30][SQLAUDIT][172.18.21.8:3801][128.0.252.240:1521][314][REDH][hisdbtaf1][fsd][WORKGROUP\HS_GH_ZM_4F_GB1][HisFrame.exe][00000][0][378321780][0][0][a4384921-fdd0-4f65-835b-9eff4cef0d21][SELECT]select 00 SERIALNUM , 00000.00 TOTAL , CFDH RECIPCODE , LYDD FETCHDRUGPLACE , JZBM UNIQUECODE , KFYSGH DOCTORNO , KFYS DOCTORNAME , KSBH OFFICECODE , CFDZS RECEIPT COUNT from HV_CFD where CFDH = -1 AND 1 = 2
[hsproxy][2017-11-10 09:32:30][SQLAUDIT][172.18.12.7:3839][128.0.252.240:1521][314][REDH][hisdbtaf1][fsd][WORKGROUP\HS_GH_MZ_6F_YK1][HisFrame.exe][00000][1][3314989275][1][1][49aaad84-f518-40ad-ae1a-4623c2c0c5af][BEGIN]BEGIN REDH.USR_INSERT_HSSFTJMX(P_V_JYH => '86785523' /*:P_V_JYH*/ , P_N_DJH => '71178530' /*:P_N_DJH*/ , P_V_SFLX => '□' /*:P_V_SFLX*/ , P_N_SFGLM => '7' /*:P_N_SFGLM*/ , P_V_SFGLMC => '□□' /*:P_V_SFGLMC*/ , P_V_XGBH => '236147' /*:P_V_XGBH*/ , P_V_MC => '᠒᠑᠑' /*:P_V_MC*/ , P_V_GG => '᠑᠒' /*:P_V_GG*/ , P_V_JLDW => '15' /*:P_V_JLDW*/ , P_N_DJ => '1' /*:P_N_DJ*/ , P_N_SL => '15' /*:P_N_SL*/ , P_N_YFJE => '0.00' /*:P_N_YFJE*/ , P_N_SSJE => '0' /*:P_N_SSJE*/ , P_N_BBXJE => '2014' /*:P_N_BBXJE*/ , P_N_KSBH => '2416' /*:P_N_KSBH*/ , P_N_KFYSGH => '1659161334' /*:P_N_KFYSGH*/ , P_V_FPHM => 'E4' /*:P_V_FPHM*/ , P_V_FPXZ => '30.00' /*:P_V_FPXZ*/ , P_N_FPZE => '0.00' /*:P_N_FPZE*/ , P_N_FPJE => '0.00' /*:P_N_FPJE*/ , P_N_FPSSJE => '30.00' /*:P_N_FPSSJE*/ , P_N_FPZJE => '0.00' /*:P_N_FPZJE*/ , P_N_FPBBXE => '86785523' /*:P_N_FPBBXE*/ , P_V_YBJZLSH => '30' /*:P_V_YBJZLSH*/ , P_N_YBJZJE => '0.00' /*:P_N_YBJZJE*/ , P_N_FPXJE => '28' /*:P_N_FPXJE*/ , P_N_ZXKSBH => '0' /*:P_N_ZXKSBH*/ , P_N_TSBXJE => '1' /*:P_N_TSBXJE*/ , P_V_GHLB => null /*:P_V_GHLB*/ , P_N_LB => -4844515345440000000000 /*:P_N_LB*/ , P_N_GHLSH => '15' /*:P_N_GHLSH*/ , P_V_KFRQ => '0' /*:P_V_KFRQ*/ , P_V_JX => '0' /*:P_V_JX*/ , P_V_BXDJ => '0' /*:P_V_BXDJ*/ , P_V_BBXBL => '0' /*:P_V_BBXBL*/ , P_V_BXBZ => '0' /*:P_V_BXBZ*/ , P_V_PTYPE => '8' /*:P_V_PTYPE*/ , P_V_GHBZ => '2' /*:P_V_GHBZ*/ , P_V_MZBZ => '216875835' /*:P_V_MZBZ*/ , P_V_CFBZ => '100' /*:P_V_CFBZ*/ , P_V_ITEMTYPE => '15' /*:P_V_ITEMTYPE*/ , P_V_SEQID => '□' /*:P_V_SEQID*/ , P_V_ZHELV => '15' /*:P_V_ZHELV*/ , P_V_DISCOUNTDJ => '0' /*:P_V_DISCOUNTDJ*/ , P_V_TDCZLX => '0' /*:P_V_TDCZLX*/ , P_V_PRICE1 => null /*:P_V_PRICE1*/ , P_V_PRICE2 => null /*:P_V_PRICE2*/ , P_V_PRICE3 => '100' /*:P_V_PRICE3*/ , P_N_JSPC => -0000000000000000000000000000000000000000 /*:P_N_JSPC*/ , P_N_TSBXBL => -0000000000000000000000000000000000000000 /*:P_N_TSBXBL*/ , P_N_ZGBL => '3461.40' /*:P_N_ZGBL*/ , P_N_ZGJE => '11447.16' /*:P_N_ZGJE*/ , P_N_ZGBZ => '30.00' /*:P_N_ZGBZ*/ , P_N_YBDNYE => '0.00' /*:P_N_YBDNYE*/ , P_N_YBLNYE => '0.00' /*:P_N_YBLNYE*/ , P_N_YBZHF => '0' /*:P_N_YBZHF*/ , P_N_YBTCZF => '0' /*:P_N_YBTCZF*/ , P_N_YBFJZF => :P_N_YBFJZF , P_N_FLZFJE => :P_N_FLZFJE , P_V_DDJSXMBH => :P_V_DDJSXMBH , P_N_DDJSXMBE => :P_N_DDJSXMBE ) ; END ;
[hsproxy][2017-11-10 09:32:30][SQLAUDIT][172.18.12.7:3839][128.0.252.240:1521][314][REDH][hisdbtaf1][fsd][WORKGROUP\HS_GH_MZ_6F_YK1][HisFrame.exe][00000][1][4254094062][1][2][49aaad84-f518-40ad-ae1a-4623c2c0c5af][SELECT]SELECT JSFS FROM REDH.HD_JZFS WHERE JZFSM = '2' /*:1*/
[hsproxy][2017-11-10 09:32:30][SQLAUDIT][128.0.254.39:63509][128.0.252.240:1521][310][HU_CLINIC][hisdbtaf1][Administrator][update_server][JDBC Thin Client][00000][1][3286515299][1][1][11c32f54-0dad-49d5-bfc1-d4dabdfc5376][INSERT]INSERT INTO HU_CLINIC.COM_SAPTAC_RUNTIME_LOG(IN_XML , OUT_XML , SERVICE_NAME , START TIME , END TIME , CLIENT_IP , SERVER_IP , DELAY , IS SUCCESS , MS) V
</content> /*:1*/ , 'out of length : 55474' /*:2*/ , 'com.saptac.nurse.service.HuLi.QueryStatInfoByCareIDService' /*:3*/ , to_date('2017-11-10 09:40:57.240000' , 'YYYY-MM-DD HH24:MI:SS')
/*:4*/ , to_date('2017-11-10 09:40:57.255000' , 'YYYY-MM-DD HH24:MI:SS') /*:5*/ , '172.18.210.13' /*:6*/ , '128.0.254.39:8591' /*:7*/ , 15 /*:8*/ , 1 /*:9*/ , 5512816 /*:10*/ )
[hsproxy][2017-11-10 09:32:30][SQLAUDIT][172.18.21.8:3801][128.0.252.240:1521][314][REDH][hisdbtaf1][fsd][WORKGROUP\HS_GH_ZM_4F_GB1][HisFrame.exe][00000][0][378321780][1][1][a4384921-fdd0-4f65-835b-9eff4cef0d21][SELECT]select 00 SERIALNUM , 00000.00 TOTAL , CFDH RECIPCODE , LYDD FETCHDRUGPLACE , JZBM UNIQUECODE , KFYSGH DOCTORNO , KFYS DOCTORNAME , KSBH OFFICECODE , CFDZS RECEIPT COUNT from HV_CFD where CFDH = -1 AND 1 = 2
[hsproxy][2017-11-10 09:32:30][SQLAUDIT][128.0.254.33:50533][128.0.252.240:1521][310][HU_CLINIC][hisdbtaf1][Administrator][WIN-GHN4KU080A5][JDBC Thin Client][00000][1][4161858345][3][3][e6002b7c-c30d-4fcc-9cf9-1d8442c188e0][SELECT]SELECT * FROM MTD_WARD_SHIFT_MAIN WHERE 1 = 1 AND ID = 49861 /*:1*/ AND SHIFT_DATE = '2017-11-10' /*:2*/ AND WARD_CODE = 2305 /*:3*/
[hsproxy][2017-11-10 09:32:30][SQLAUDIT][128.0.254.33:50533][128.0.252.240:1521][310][HU_CLINIC][hisdbtaf1][Administrator][WIN-GHN4KU080A5][JDBC Thin Client][00000][1][2265352986][2][2][e6002b7c-c30d-4fcc-9cf9-1d8442c188e0][UPDATE]UPDATE MTD_WARD_SHIFT_MAIN SET PAT_COUNT = '44' /*:1*/ , HL_TJ = null /*:2*/ , HL_YJ = '5' /*:3*/ , HL_EJ = '16' /*:4*/ , HL_SJ = null /*:5*/ , PAT_SS = null /*:6*/ , PAT_CY = '1' /*:7*/ , PAT_RY = null /*:8*/ , PAT_SW = null /*:9*/ , PAT_ZR = null /*:10*/ , PAT_ZC = null /*:11*/ , PAT_DD = '9' /*:12*/ , PAT_YC = null /*:13*/ , PAT_OTHER = null /*:14*/ WHERE 1 = 1 AND ID = 49861 /*:15*/ AND SHIFT_DATE = '2017-11-10' /*:16*/ AND WARD_CODE = 2305 /*:17*/ AND STATUS = 1
[hsproxy][2017-11-10 09:32:30][SQLAUDIT][172.18.21.85:1479][128.0.252.240:1521][314][REDH][hisdbtaf1][fsd][WORKGROUP\HS_NKGH_H1][HisFrame.exe][00000][0][1533693216][0][0][7826bcb8-7c1f-4bbb-a-d23-49bcfc2b21e9][SELECT]SELECT VALUE FROM HU_PUB.HTD_MEDICARESETTINGS WHERE ENTRY = 57 /*:1*/
[root@one-proxy sqllog]#
```



第七屆



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多层防护

- 网络隔离
 - 将Oracle/SQL Server与办公网络进行隔离
 - 隐藏Oracle/SQL Server数据库的IP地址
- 登录限制
 - 根据IP地址、机器名进行登录控制
 - 根据用户名进行登录控制
 - 根据时间段进行登录控制
- 操作记录
 - 记录保存所有的操作SQL
 - 还原绑定变量，场景重现
 - 根据正则表达式进行安全定级
- 安全拦截
 - 可设置敏感数据表
 - 可按IP地址、机器名、用户名等进行授权访问



规则定制



第七届



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版本支持

- Oracle
 - Oracle 11g R2 JDBC Driver
 - Oracle 10g/11g OCI
 - Oracle 10g/11g/12c Server
- Server Server
 - 2008及以上
- MySQL
 - 5.1以上版本



第七届



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(Since 2017-08-10 13:49:01, Order By Trxs, Total 26 rows)

Client	Login	Tabs	SQLs	Trxs	Query	Fail	Select	Update	Insert	Delete	Trans	Roll	Time	Rows	Row Dist (1/2/3/4/5)	Send	Recv
172.18.11.119	65	109	396	1250	1925693	0	1538965	118666	99480	110	30572	2	6572537	2064817	17584/29/53/0/0	630.64 MB	802.73 MB
172.18.11.120	47	106	375	1177	1750938	0	1400605	107562	90910	164	27646	0	5455521	1960596	16289/26/91/0/0	573.78 MB	726.43 MB
172.18.11.117	42	122	485	1014	602433	0	487564	41080	25586	2329	6607	1	14473430	2360880	5874/24/957/0/0	198.56 MB	249.21 MB
172.18.11.23	38	113	457	954	1199793	0	962529	72212	63168	237	18430	0	4816552	1401956	10839/50/97/0/0	389.42 MB	498.51 MB
172.18.11.122	49	114	469	949	1160646	1	929900	71413	60303	129	18638	0	3826733	1299911	11241/35/51/0/0	379.83 MB	486.94 MB
172.18.11.124	69	114	465	945	1370444	0	1099944	76623	81989	211	19345	0	4160973	1539335	11528/39/89/0/0	445.19 MB	559.16 MB
172.18.11.139	53	111	405	804	951983	1	760558	58827	49653	124	14839	0	3051153	1085680	8806/45/58/0/0	312.23 MB	399.28 MB
172.18.11.121	61	117	462	800	987280	0	794310	59629	49980	202	15851	0	3458570	1190110	9516/42/86/0/0	322.08 MB	416.14 MB
172.18.11.118	43	116	457	768	867372	1	695151	51831	44298	151	13687	0	3072694	1010498	7927/29/68/0/0	285.42 MB	364.69 MB
128.0.254.43	11	100	248	568	3228218	43600	2828285	69462	141265	17	22672	0	65210062	8270153	180910/2977/31/0/0	675.96 MB	1.70 GB
128.0.0.197	107	186	567	51	12472	8	10586	117	259	40	91	1	1360478	244478	379/124/65/1/0	4.92 MB	15.46 MB
128.0.0.254	69	78	137	14	11073	1	568	1	10453	40	42	0	464766	147906	62/46/27/0/0	9.10 MB	8.36 MB
172.18.33.5	45	126	334	7	7734	0	7547	22	94	12	15	0	435643	69447	197/40/13/0/0	2.28 MB	5.45 MB
172.18.21.70	61	18	17	1	2224	0	143	0	0	0	1	0	11153	12267	16/3/1/0/0	6.60 MB	1.89 MB
172.18.11.175	75	25	29	1	234	0	221	13	0	0	2	0	3612	2956	48/2/0/0/0	544.72 KB	751.17 KB
128.0.0.196	7	29	58	1	304	1	201	2	0	0	1	0	153453	33241	14/32/3/0/0	217.70 KB	855.56 KB
172.18.21.66	7	11	8	0	14	0	14	0	0	0	0	0	17737	116	2/0/0/0/0	39.77 KB	40.87 KB
172.18.33.6	1	11	14	0	30	0	16	0	3	2	0	0	74	1883	1/0/1/0/0	10.29 KB	11.19 KB
172.18.30.152	34	20	17	0	87	0	85	2	0	0	0	0	1546668	41811	18/0/7/1/0	197.23 KB	13.23 MB
172.18.21.46	30	21	18	0	76	0	76	0	0	0	0	0	1978	9288	10/2/1/0/0	172.23 KB	632.69 KB
172.18.11.224	21	23	16	0	60	0	60	0	0	0	0	0	78966	825	14/0/0/0/0	129.23 KB	161.85 KB
128.0.0.2	205	37	33	0	431	4	427	0	0	0	0	0	520522	39195	52/1/5/1/0	1.06 MB	3.53 MB
128.0.0.177	12	31	32	0	50	0	48	1	0	1	0	0	171313	15453	1/3/3/0/0	109.25 KB	1.14 MB



第七届



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(Since 2017-08-10 13:49:01, Order By Exec Total, Cur/Total: 200/1440 rows) [Next](#)

Hashcode	SQL Text	Exec Total	Exec (%)	Fail	Time Total	Time (%)	Avg Time	Max Time	Rows Total	Rows (%)	Avg Rows	Row Dist (1/2/3/4/5)	Bytes Total	Bytes (%)
1533693216	SELECT VALUE FROM HU_PUB.HTD_MEDICARESETTINGS WHERE ENTRY = ?	975958	6.92	0	2027607	1.70	2	6916	722449	3.16	0.74	0/0/0/0/0	220.75 MB	4.08
2230903498	select ? from dual	902878	6.40	0	559724	0.47	0	51	902878	3.95	1.00	0/0/0/0/0	167.04 MB	3.09
4254094062	SELECT JSFS FROM REDH.HD_JZFS WHERE JZFSM = ?	698956	4.96	0	1336975	1.12	1	13523	698950	3.06	1.00	0/0/0/0/0	161.64 MB	2.99
4096529603	SELECT MEDFLAG FROM REDH.HV_MEDREGTYPE WHERE ID = ?	299605	2.13	0	427645	0.36	1	4678	290611	1.27	0.97	0/0/0/0/0	69.89 MB	1.29
378321780	select ? SERIALNUM , ? TOTAL , CFDH RECIPECODE , LYDD FETCHDRUGPLACE , JZBM UNIQUECODE , KFYSGH DOCT...	280023	1.99	0	176594	0.15	0	1521	0	0.00	0.00	0/0/0/0/0	118.48 MB	2.19
3670074476	SELECT MZYBBM FROM REDH.HV_SFGL WHERE SFGLM = ?	255450	1.81	0	311938	0.26	1	2076	255450	1.12	1.00	0/0/0/0/0	60.47 MB	1.12
961524278	SELECT SYSDATE AS THISTIME FROM DUAL	229190	1.63	0	582911	0.49	2	644	229190	1.00	1.00	0/0/0/0/0	55.13 MB	1.02
1621614138	SELECT YPJX FROM REDH.HV_YPXX WHERE YPBH = ?	213629	1.52	0	265353	0.22	1	292	1839143	8.05	8.61	83147/0/0/0/0	53.38 MB	0.99
2058597803	SELECT YBPZH FROM REDH.HS_YBBRXX WHERE JZBM = ? AND DBBZ = ?	206452	1.46	0	130341	0.11	0	1793	2936	0.01	0.01	0/0/0/0/0	35.48 MB	0.66
3178197395	SELECT KHMZH FROM REDH.HS_BRXX WHERE JZBM = ?	203516	1.44	0	283372	0.24	1	2250	203516	0.89	1.00	0/0/0/0/0	51.82 MB	0.96
2208037181	SELECT VALUE FROM HU_PUB.HTD_SETTINGS WHERE SECTION = ? AND ENTRY = ?	197101	1.40	0	231804	0.19	1	5380	155101	0.68	0.79	0/0/0/0/0	45.42 MB	0.84
967235709	SELECT ? SERIALNUM , ? as FLAG , SL PAYSELF , XGBH CODE , MC NAME , GG DEPTPACK , a.JLDW DEPTUNIT , ...	182685	1.30	0	226254	0.19	1	2839	0	0.00	0.00	0/0/0/0/0	346.19 MB	6.40
3314989275	BEGIN REDH.USB_INSERT_HSSFTJMX(P_V_JYH => ? , P_N_DJH => ? , P_V_SFLX => ? , P_N_SFGLM => ? , P_V_SF...	174111	1.23	0	820147	0.69	4	1846	174111	0.76	1.00	0/0/0/0/0	23.90 MB	0.44
1606829854	SELECT BXBBL FROM REDH.HD_SPECITEM WHERE JZFSM = ? AND CODE = ? AND LBBZ = ? AND SFYP = ?	173352	1.23	0	124782	0.10	0	3008	1	0.00	0.00	0/0/0/0/0	29.37 MB	0.54
4093308252	SELECT REDH.F.GET_SETIMXD() AS SETIMXD FROM DUAL	172462	1.22	0	161933	0.14	0	9750	172462	0.76	1.00	0/0/0/0/0	29.31 MB	0.54



第七屆



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(Since 2017-08-10 13:49:01, Order By Exec, Total 5693 rows)

	SQL Text	Exec	Roll Back	Call	DML Call	Time	Avg Time	Busy	DML Busy	Avg Busy	Rows	DML Rows	Avg Rows
1	UPDATE REDH.HV_SFTJ SET JYWBLSH = ?, V_YBSJ = ? WHERE JYH = ?; UPDATE REDH.HV_SFTJMX SET YBJZLSH = ? WHERE JYH = ?; UPDATE HU_PUB.HTD_MEDRECDRUG SET CEN_LSH = ?, OPTIME = ? WHERE CEN_LSH = ?; UPDATE HU_PUB.HTD_MEDRECNODRUG SET CEN_LSH = ?, OPTIME = ? WHERE CEN_LSH = ?; UPDATE HU_PUB.HTD_MEDRECPFEECONFIRMREQ SET CENTERID = ?, OPTIME = ? WHERE CENTERID = ?;	24500	0	122500	122500	807765	32	195365	195365	7	224508	224508	9
2	BEGIN REDH.USP_RECITEMCONTROL(P_PATCODE => ?, P_XMBH => ?, P_XMMC => ?, P_MJZBZ => ?, P_JZFS => ...; BEGIN REDH.USP_RECITEMCONTROL(P_PATCODE => ?, P_XMBH => ?, P_XMMC => ?, P_MJZBZ => ?, P_JZFS => ...;	14756	0	29512	0	189860	12	20606	0	1	29512	0	2
3	INSERT INTO HL_CALFEEDTAIL(XGBH, SFGLM, YFJE, SL, DJ, BBXJE, FLZFJE, GBZGZL, ZFDE, PRICE1 ...; INSERT INTO HL_CALFEEDTAIL(XGBH, SFGLM, YFJE, SL, DJ, BBXJE, FLZFJE, GBZGZL, ZFDE, PRICE1 ...; SELECT JSFS FROM REDH.HD_JZFS WHERE JZFSM = ?; BEGIN REDH.USP_CAL_FEENEW1(P_JZFSM => ?, P_JSFS => ?, P_CURYEARPAY => ?, P_LASTYEARPAY => ?, P_O...; SELECT YBPZH FROM REDH.HS_YBRRXX WHERE JZBM = ? AND DBBZ = ?; SELECT KHMZH FROM REDH.HS_BRXX WHERE JZBM = ?;	14688	0	88128	29376	307752	20	67378	22816	4	73440	29376	5
4	BEGIN REDH.USP_RECITEMCONTROL(P_PATCODE => ?, P_XMBH => ?, P_XMMC => ?, P_MJZBZ => ?, P_JZFS => ...;	11377	0	11377	0	62675	5	8476	0	0	11377	0	1
5	INSERT INTO HL_CALFEEDTAIL(XGBH, SFGLM, YFJE, SL, DJ, BBXJE, FLZFJE, GBZGZL, ZFDE, PRICE1 ...; SELECT JSFS FROM REDH.HD_JZFS WHERE JZFSM = ?; BEGIN REDH.USP_CAL_FEENEW1(P_JZFSM => ?, P_JSFS => ?, P_CURYEARPAY => ?, P_LASTYEARPAY => ?, P_O...; SELECT YBPZH FROM REDH.HS_YBRRXX WHERE JZBM = ? AND DBBZ = ?; SELECT KHMZH FROM REDH.HS_BRXX WHERE JZBM = ?;	11281	0	56405	11281	208789	18	74743	14540	6	45124	11281	4
6	BEGIN REDH.USP_RECITEMCONTROL(P_PATCODE => ?, P_XMBH => ?, P_XMMC => ?, P_MJZBZ => ?, P_JZFS => ...; BEGIN REDH.USP_RECITEMCONTROL(P_PATCODE => ?, P_XMBH => ?, P_XMMC => ?, P_MJZBZ => ?, P_JZFS => ...; BEGIN REDH.USP_RECITEMCONTROL(P_PATCODE => ?, P_XMBH => ?, P_XMMC => ?, P_MJZBZ => ?, P_JZFS => ...;	9610	0	28830	0	212567	22	20470	0	2	28830	0	3
7	INSERT INTO HL_CALFEEDTAIL(XGBH, SFGLM, YFJE, SL, DJ, BBXJE, FLZFJE, GBZGZL, ZFDE, PRICE1 ...; INSERT INTO HL_CALFEEDTAIL(XGBH, SFGLM, YFJE, SL, DJ, BBXJE, FLZFJE, GBZGZL, ZFDE, PRICE1 ...; INSERT INTO HL_CALFEEDTAIL(XGBH, SFGLM, YFJE, SL, DJ, BBXJE, FLZFJE, GBZGZL, ZFDE, PRICE1 ...; SELECT JSFS FROM REDH.HD_JZFS WHERE JZFSM = ?; BEGIN REDH.USP_CAL_FEENEW1(P_JZFSM => ?, P_JSFS => ?, P_CURYEARPAY => ?, P_LASTYEARPAY => ?;	9545	0	66815	28635	225870	23	51509	18961	5	57270	28635	6



(Since 2017-08-10 13:49:01, Order By Insert, Total 382 rows)

Table Name	SQLs	Insert			Update			Delete			Select		
		Exec	Rows	Time	Exec	Rows	Time	Exec	Rows	Time	Exec	Rows	Time
HL_CALFEEDETAIL	1	167198	167198	167198	0	0	0	0	0	0	0	0	0
HL_CALINVOICEDETAIL	3	157662	157662	157662	0	0	0	0	0	0	40727	51257	93998
HTD_MedRecDrug	10	53382	53966	53966	24527	52212	35115	0	0	0	7	4725	166658
HTD_MedRecDrug	10	53382	53966	53966	24527	52212	35115	0	0	0	7	4725	166658
HS_INVOICEUSE	2	49258	48984	48984	0	0	0	0	0	0	0	0	0
HV_CFHTLZ	11	45300	45300	45300	83828	90859	433630	0	0	0	92209	47012	209506
HTD_MEDRECNO DRUG	9	36911	41827	41827	24526	35717	26472	0	0	0	7	4713	166660
HTD_MEDRECNO DRUG	9	36911	41827	41827	24526	35717	26472	0	0	0	7	4713	166660
CV_CFDCLMX	5	32920	32908	32908	0	0	0	0	0	0	70958	131047	89573
HS_YJMXSJ	4	30911	30911	30911	109	777	262	0	0	0	8298	39383	12275
HTD_MEDRECPFEECONFIRMREQ	21	28337	28337	28337	27618	27618	48082	0	0	0	20851	29708	400605
HS_ENTRYLIST	1	22037	22037	22037	0	0	0	0	0	0	0	0	0
CTD_DOCTORALIGNMENT	4	20091	20091	20091	23050	69138	57579	0	0	0	39780	23050	68501
CV_CFDCL	15	16901	16901	16901	1425	1425	1973	0	0	0	86399	177209	361671
HTD_Logs	1	11347	11347	11347	0	0	0	0	0	0	0	0	0
AA	14	10331	10331	10331	0	0	0	0	0	0	103	15794	62899
HL_CMEDICINEREcipe	2	6236	6236	6236	0	0	0	0	0	0	0	0	0
HS_FFFSBOSH	3	5325	5325	5325	5325	5325	521739	0	0	0	214	214	74558
CTD_EXAMMASTER	24	4351	3948	3948	3206	3204	3635	0	0	0	72954	102384	52593868
HS_YJJCD	11	4140	4140	4140	55970	54683	79432	0	0	0	8883	14280	12306
CTD_EXAMITEMDETAIL	6	3948	3948	3948	0	0	0	0	0	0	4777	16211	5435
HS_XTSFMX	4	2654	0	0	0	0	0	0	0	0	178	418	44115



(Since 2017-08-10 13:49:01, Order By Table Number, Total 311 rows)

Tables	Exec	Trans
trx: dual, htd_inhospitalchargepaydetail	1	1
trx: HS_ENTRYLIST, HS_YJJCD	28	2
trx: CTD_EXAMITEMDETAIL, CTD_EXAMMASTER	369	1
trx: HS_DRMZ, HS_GHJZ	4	1
trx: CV_CFDCL, CV_CFDCLMX	14035	13
trx: HD_FPHMFP, HS_XDFP	3	2
trx: dual, htd_precharge	4	4
trx: HTD_INHOSPITALCHARGEMASTER, dual	21	14
trx: CTD_EXAMMASTER, ctd_examexecdetail	350	1
trx: HTD_MEDRECPFEECONFIRMREQ, HV_SFTJ, HV_SFTJMX	2335	1
trx: CTD_DELETELOG, CTS_PRESCRDETAIL, CTS_PRESCRDETAIL_BAK	1	1
trx: HS_ENTRYLIST, HS_YJJCD, HS_YJMXSJ	1109	22
trx: dual, etd_ticket_info, hs_brx	1	1
trx: CV_CFDCL, CV_CFDCLMX, DUAL	59	3
trx: CTD_PECIPEDELDRUG, CV_CFDCL, CV_CFDCLMX	17	2
trx: HD_YBDW, HS_YBRRXX, HVS_BRXX	41	2
trx: HD_JZFS, HL_CALFEEDETAIL, HS_YBRRXX	347	40
trx: HTD_MEDICARESETTINGS, HTD_MEDRECPFEECONFIRMREQ, HTD_MedRecPatInfo	10	1
trx: CV_EXAMITEMS, ctd_examexecdetail, ctd_exammaster	2178	1
trx: HTD_WARDCREDIT, dual, htd_wardcredit	1	1
trx: HTS_DEPTS, HTS_VOCAATION, HTS_WORKERS	1	1
trx: HTD_INHOSPITALCHARGEPAIDDETAIL, dual, htd_inhospitalchargepaydetail	3	3
trx: HS_FFFS, HS_SFTJ, HS_SFTJMX	51	12



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