Oracle Application Monitoring

28.04.2020, Daniel Röttgermann
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Swisscom Banking

Business Processes of today and Innovations for tomorrow
Everything for Banking - since 37 years

100+
Completed Core Banking System Migrations

For 75+
Banks we run application monitoring

For 23+
Banks & financial services firms, our Trend Scout e.foresight is doing research

70
BPO-Customers (payments / investments and securities)

For 51
Banks we operate the banking platform

100
Different peripheral systems

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Fun Facts

20+
Sites = Customer, on one Host

1,450+
Monitored Hosts

155,000+
Monitored Services

35
Oracle Hosts

184
Oracle Instances

25,000
mk_oracle based Services

Up to 30
Databases on one Oracle Server
Checkmk Managed Services Setup – Swisscom Banking – High Level

Customers:
External Login

Slave Sites = Customer Sites

Every Customer in its own network zone

Master Site

Checkmk Server Cluster (active/passive)

Swisscom Team

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Swisscom Banking Requirements

The large number of enterprise customers requires a high degree of innovation and flexibility
Requirements towards database monitoring

Custom SQLs
- Application specific SQLs
- Several applications on one DB
- Performance data
- Availability

mk_oracle based Checks
- mk_oracle runs SQL and creates a new section for output
- Agent transports data
- Own application check matches with section
- Depending on application, services and/or inventory data are being created

Improved inventory functions
- Status Data in inventory
- Application Details:
  - Release, Release Date, Install Time...
  - Background Jobs, Networks, Process Queues, ...
- Mix of status & inventory data

Improved Oracle Application Views & Dashboards
- Views with inventory & status data
- Create views with «mixed» inventory data
  - Part1 from Check1 & Part2 from Check2 ....
- Perf-O-Meter Views for DBs (CPU, Memory, Uptime...)
Customer Requirements

As if our internal ones weren’t enough...
Customer requirements towards database monitoring

Custom SQLs
- Application specific SQLs
- Several applications on one DB
- Performance data
- Availability

More DB details/information
- SGA
- PGA
- CPU
- Memory
- ...

More Oracle based application information
- Release, Release Date, Install Time...
- Background Jobs, Networks, Process Queues, ...

Reporting & Capacity Management
- Reporting for Oracle DBs
- Capacity Mgmt calculations for Oracle Services (Tablespace, Memory, CPU, ...)

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Demo

Let's get some impressions
Challenges

Not everything that glitters is gold...
## Challenges

### Number of DB's & Services
- 30 databases on one host
- Up to 30,000 services on one host

### Number of Custom SQL's
- Up to 60 Custom SQLs on one host
- Complex oracle.cfgs due to number of SQL's
- Maintenance and optimization of custom SQL's
  - Application changes with release
  - Table no longer exists with release

### Performance / Timeout of agents
- Runtime of `mk_oracle`
- Too many databases
- Custom SQL's with long runtime
- Many default `mk_oracle` SQLs
- Team members and Customers are dependent on current data

### Popularity / Acceptance
- More requests both internally and externally
  - Views
  - Dashboards
  - Custom SQL's
  - Checks
  - ...

### Reporting & Capacity Management
- More complex requirements
- Missing functionalities

### Banking Software Differences / Requirements
- Paths/Prefix/Postfix/Discovery...
- Database Cloning / come and go
- Non-Standard Oracle Setup
Oracle Application Monitoring 2021?

**Performance**
- **Improve run time** of mk_oracle and **optimize** for demanding Swisscom scenarios
- Try to **further optimize run time** of SQL's
- Try to **further optimize run time** of custom SQL's.
- **Optimize** check **run time** (parsing / monitoring delay / result processing)

**Capacity Management**
- **Always** possible within the GUI
- Works for **every service**
  - ORA $db Performance DB-Time
  - ORA $db Performance Memory
  - ORA $db Tablespace
  - ...

**Views**
- Creation of **default Oracle Views** in Checkmk
- **Introduction of generic** Oracle application **views**
- **Perf-O-Meter** views for DBs (useful sorting)
- **More** Oracle based Application **Views**
  - For different teams within **Swisscom**
  - For **Customers**

**Dashboards**
- Introduction of a **Default Oracle Dashboard** in Checkmk
- Introduction of **generic** Oracle application based Dashboards
- **More** Oracle based application **Dashboards**
  - For different teams within **Swisscom**
  - For **Customers**

**Reporting**
- **Automated** reports for
  - all Oracle DBs
  - all Oracle based applications
- Includes **Capacity Management** relevant data
Q & A
Thank you!
Contact

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