

# Monitoring the Global Enterprise with Oracle Enterprise Manager

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Albertsons

ALBERTSONS



SAFeway

SAFeway



# A little bit about Safeway

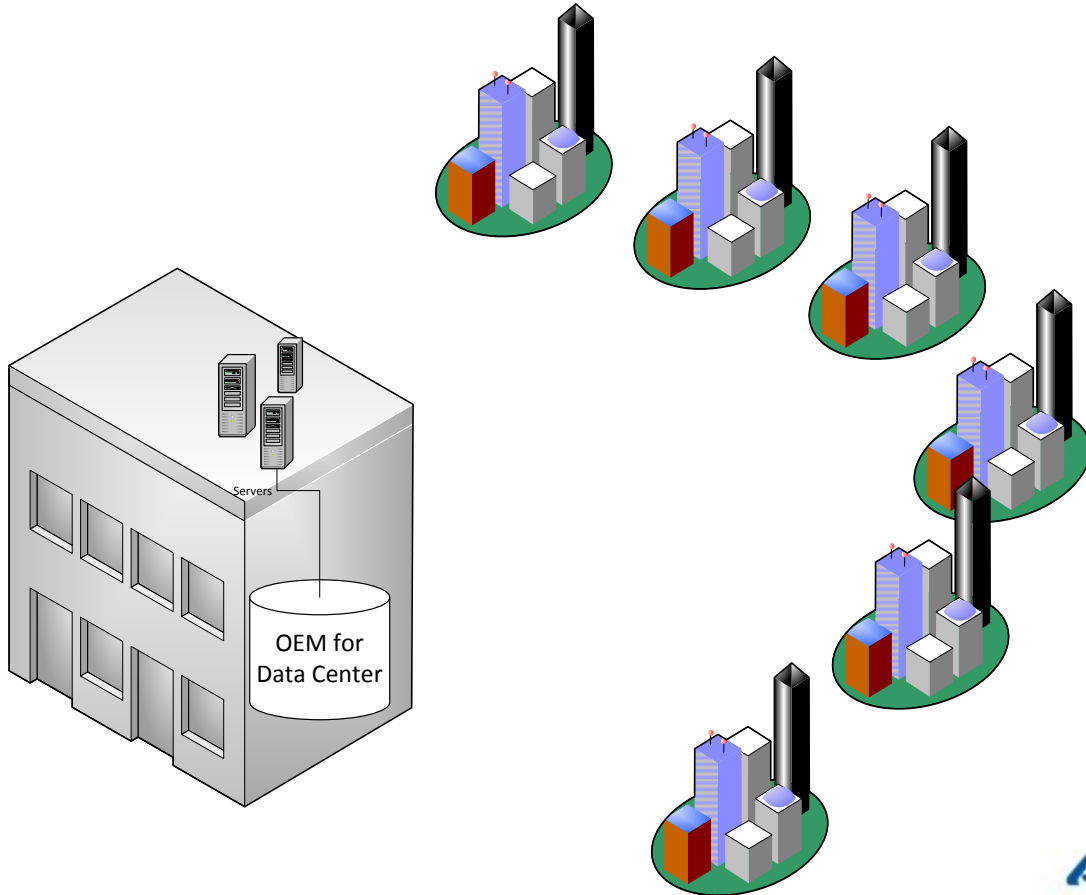
- Safeway, Inc. is an American supermarket chain that includes the Albertsons supermarket chain and has more than **2,200 stores** and over 250,000 employees which makes it the second largest supermarket chain in North America. Safeway's primary base of operations is in the western and central United States, with some stores located in the Mid-Atlantic region of the Eastern Seaboard. The company is headquartered in Pleasanton, California.

[https://en.wikipedia.org/wiki/Safeway\\_Inc.](https://en.wikipedia.org/wiki/Safeway_Inc.)

# Considerable Oracle Footprint at Safeway

- Oracle Enterprise Manager 12c Cloud Control 12.1.0.4.0
- Oracle Identity and Access Management Suite
  - including Oracle Unified Directory which requires unique plugin in OEM
- Oracle Golden Gate
- Exadata
- PeopleSoft
- SOA Suite
- WebLogic
- Oracle DB 11g
  - Data Centers and Retail Locations
  - Primarily 11.2.0.4 primarily
  - Mix of RAC, single instance, Data Guard, and most ASM storage

# Safeway's Growing IT Landscape



Project scope

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- Challenge
  - Implement standardized monitoring for all 2200+ Safeway retail locations.
  - Desire was to monitor the same as corporate Oracle Databases
  - Availability requirements for retail is quite stringent and does not match corporate
  - Securing funding for OEM since it falls under the ITSM umbrella for our organization
- Decision - Deploy a dedicated OEM environment for retail locations
  - Evaluated scale and growth with OEM Health check (Support & ACS)
  - Downtime was the main deciding factor

# Pros and Cons of Separate OEM Environments

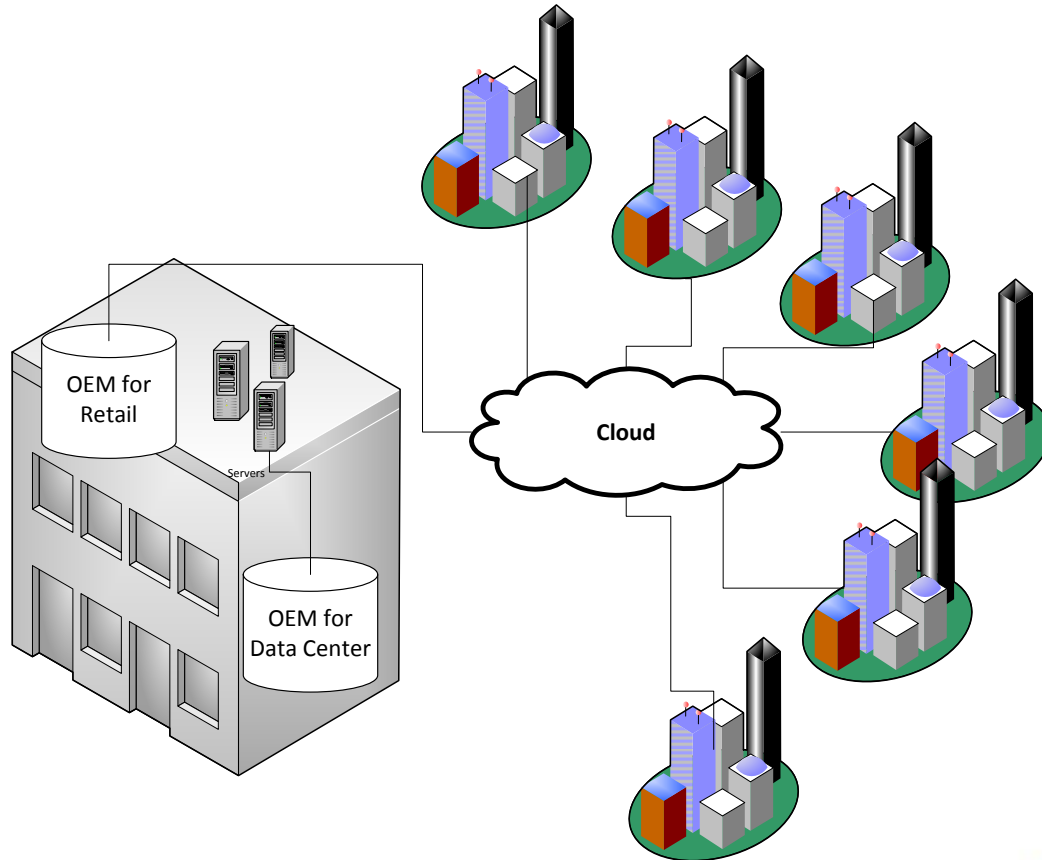
## ■ Pros

- Retail locations not disrupted when corporate deploys plugins/patches
- Monitoring templates, jobs, reports allow for export and import
- Same credential store for authentication and group rights (LDAP, OIAM)

## ■ Cons

- Incident rules can not be exported
- Multiple environments to manage and maintain
- Extra hardware
- No single reporting environment

# Safeway's Solution to the growing IT landscape



Targets

# Targets

- Data Center OEM
  - 8600+ targets
  - 1000+ agents
- Retail OEM
  - 200 stores implemented, projected growth 2400+ agents
  - Each retail store contains four Oracle database instances



# How We Do It – Jobs & Reports

- Using reports cuts down on e-mails and pages
- Using both OEM job scheduler and external workflow / operations and orchestration solution
  - Applicable Interim Patches \*Out-of-box report\*
  - Unreachable Agents
    - Report based on the MGMT\$AVAILABILITY, SYSMAN.EM\_INCIDENTS and a workflow that runs four times a day
  - Script to refresh coherence clusters run from OEM Job Scheduler
  - OEM based RMAN Backups under discussion
  - Corrective actions now being developed

# How We Do It - Metrics

- Database Metrics
  - Availability
  - Tablespace percentage used
  - Sessions percentage used
  - Processes percentage used
  - Metric Extensions for monitoring credential expiry
  - Metrics for other Oracle solutions ( OUD, SOA suite, PeopleSoft )
- Many incident rules send both SNMP and email

# Mass Agent Deployment

- Unix admins own the agent install, but don't have time to use OEM console to push or patch OEM agents
- Developed OEM agent RPM for “set it and forget it” implementation
- `emcli verb => get_agentimage_rpm`
- `rpm -qp --scripts oracle-agt-12.1.0.4.0-1.0.x86_64.rpm <= “show source”`
  
- References
  - Enterprise Manager Cloud Control Advanced Installation and Configuration Guide

# Making the Enterprise Manager RPM Work For You

- Key files for how RPM and the oracle-agt-<version>.rpm work
  - oracle\_agt.spec
  - rpm.sh
  - oracle-agt
- Main areas of an RPM spec => %pre, %post, %preun and %postun (search term for more information 'get started rpmbuild tutorial')
- Make RPM drive the OUI commands needed ( review oracle-agt file )
  - i.e. runInstaller -forceClone, runInstaller -attachHome

# Example RPM customizations

- An example: acme-co-oem-agent-13c-13.1.0.0-1.spec
- Output rpmbuild of acme-co-oem-agent-13c-13.1.0.0-1.rpm

```
/usr/bin/rpmbuild -bb .../acme-co-oem-agent-13c-13.1.0.0-1.spec
```

```
Processing files: acme-co-oem-agent-13c-13.1.0.0-1
```

```
Checking for unpackaged file(s): /usr/lib/rpm/check-files /var/tmp/acme-co-oem-agent-13c-root
```

```
Wrote: /usr/src/redhat/RPMS/x86_64/acme-co-oem-agent-13c-13.1.0.0-1.x86_64.rpm
```

- Output from deploying acme-co-oem-agent-13c-13.1.0.0-1.rpm

```
rpm -ivh /var/tmp/acme-co-oem-agent-13c-13.1.0.0-1.x86_64.rpm
```

```
Preparing... ##### [100%]
```

```
Running the sure fire road runner catching script
```

```
The parameter passed to this road runner script is: 1
```

```
...
```

# Mass Target Promotion

- Thanks to blog post, found easy way to mass promote targets

- Create argfile via SQL (target specific)

```
select 'add_target -name="' || ManagementEntityEO.ENTITY_NAME ||  
'" -type="rac_database" -host="'...  
FROM GC_MANAGEABLE_ENTITIES ManagementEntityEO, MGMT_TARGET_TYPES  
ManagementEntityTypeEO  
WHERE ...
```

Full script found here <http://dontbouncethatdb.blogspot.com/2013/11/mass-promotion-of-oem12c-targets.html>

- Run EM CLI

```
$ emcli argfile add_rac_nodes.arg
```

# Mass Target Promotion ( cont. )

- [me@thishost ~]\$ ~/emcli-prod/emcli sync  
Synchronized successfully

```
[me@thishost ~]$ vi oowExample.arg
```

```
[me@thishost ~]$ ~/emcli-prod/emcli argfile ~/oowExample.arg
```

```
Target "RAC_INST2:oracle_database" added successfully
```

```
Target "RAC_INST1:oracle_database" added successfully
```

```
[me@thishost ~]$ vi oowExampleRac.arg
```

```
[me@thishost ~]$ ~/emcli-prod/emcli argfile ~/oowExampleRac.arg
```

```
Target "RAC:rac_database" added successfully
```

```
Target "RAC:rac_database" added successfully
```

# Mass Target Promotion ( cont. )

- Another helpful hint ... plain old `#!/bin/{bash,sh,ksh}`

```
$ for i in $(awk -F ',' '{print $2}' acmeHosts.csv)
> do echo '~/emcli-acme/emcli upgrade_agents -stage_location=/appl/acme/stage
  -agents="'$i'.acmeco.net:3872';'
> done
```

```
~/emcli-acme/emcli upgrade_agents -stage_location=/appl/acme/stage
  -agents="host1.acmeco.net:3872";
```

```
~/emcli-acme/emcli upgrade_agents -stage_location=/appl/acme/stage
  -agents="host2.acmeco.net:3872";
```



# Patching and Supporting Lots of Targets

- Understand how to “patch the model”
- Run `emcli get_agentimage_rpm` command to create the new tgz file
- Release new rpm and deploy ( puppet, chef, yum and other tools )
- You may have noticed by now, EM CLI is your friend
- References
  - Simplified Agent and Plug-in Deployment by Courtney Llamas  
<http://courtneyllamas.com/simplified-agent-plug-deployment/>
  - EM 12c: Deploying the Enterprise Manager 12.1.0.3 Cloud Control Linux x86 Management Agent with the AgentPull.sh Script (Doc ID 1596348.1)

# Summary

- Plan your deployment
  - Think about what you need to accomplish
- Standardize your environment
  - Metrics
  - Templates
  - Jobs
- Simplify your deployment with EM CLI and RPM's

# A few minutes for questions and answers

Q & A

