

Automating Pay-As-You-Go Oracle Analytic and Other Cloud Instances

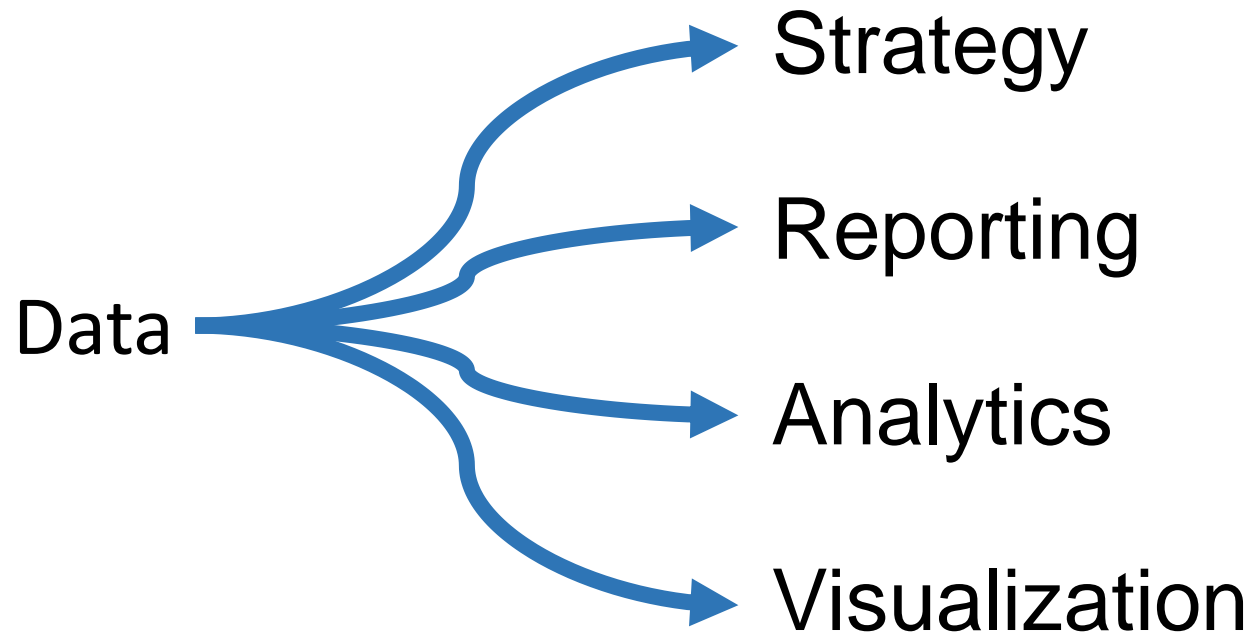
Analytics and Data Summit 2019

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Specializes in Oracle-based:



www.vlami.com



Presenter Background

Jonathan Clark - Consultant

- Over 25 years of experience in Information Technology
- Joined Vlami Software Solutions in 2000
- Involved in dozens of business intelligence implementations

I have worked very hard to gain experience in all facets of business computing possible, including, but not remotely limited to:

- Building custom data visualizations
- Business intelligence/business rules and KPI creation
- Documentation and creation of best practices
- Application server programming
- Requirements gathering
- Project management
- Providing training/mentoring
- Server administration onsite and cloud
- Datawarehousing
- PL/SQL programming
- Database administration
- Desktop support
- Physical networking
- User and data security

Oracle Cloud Platform Enterprise Analytics Certified Associate

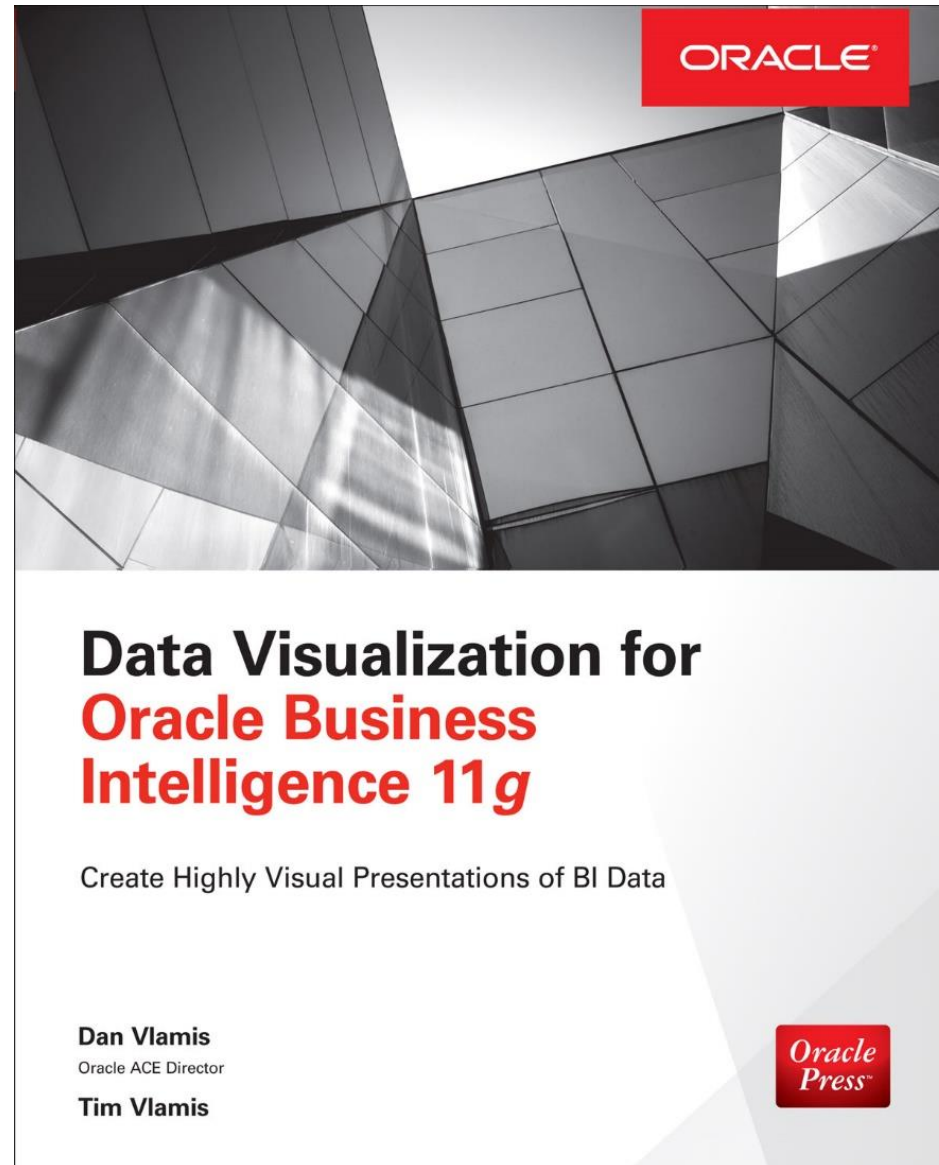
In my spare time, I am the Lord Mayor and assistant street cast director for the Kansas City Renaissance Festival and volunteer through the Kansas City Beard and Mustache Club.





Drawing for Free Book

Add business card to basket
or fill out card





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- I claim no ownership of any of the photos and images in this presentation. They are used with love, admiration, and respect for their creators.



- I apologize for the wall of text that follows.



PSM CLI – Manages these services

- This is for “PaaS” – Platform as a Service Services
- What I care about:
 - Analytics (Classic)
 - Database (Classic)
- This list generously copied from the documentation
 - Oracle Application Container Cloud Service
 - Oracle Analytics Cloud Service
 - Oracle Big Data Cloud Service - Compute Edition
 - Oracle Database Cloud Service
 - Oracle Java Cloud Service
 - Oracle MySQL Cloud Service
 - Oracle Event Hub Cloud Service
 - Oracle Event Hub Cloud Service - Platform
 - Oracle Cloud Stack Manager



PSM CLI – But Actually...

- Oracle Analytics Cloud
- Oracle API Platform Cloud Service
- Oracle API Catalog Service
- Oracle Big Data Cloud Service - Compute Edition
- Oracle Bots Configuration Service
- Oracle Bots Connector Service
- Oracle Bots Intent Service
- Oracle Bots Management API Service
- Oracle Bots Pipeline Service
- Oracle Big Data Cloud Service
- Oracle Container Cloud Service
- Oracle CxA Analytics Service
- Oracle CxA Configuration Service
- Oracle CxA Collector Service
- Oracle CxA Pod Cloud Service
- Oracle Data Hub Cloud Service
- Oracle Identity Cloud Service
- Oracle Identity Cloud Service
- Oracle IoT Asset Monitoring Cloud Service
- Oracle IoT Connected Worker Cloud Service
- Oracle Internet of Things Cloud - Enterprise



(cont.)

- Oracle IoT Fleet Monitoring Cloud Service
- Oracle IoT Production Monitoring Cloud Service
- Oracle IoT Asset Monitoring CX Cloud Service
- Oracle Integration Cloud
- Oracle Java Cloud Service
- Oracle Mobile Custom Code Container
- Oracle Mobile Core POD
- Oracle MySQL Cloud Service
- Oracle Adaptive Intelligence Applications Offers Cloud Service
- Oracle Event Hub Cloud Service - Topics
- Oracle Event Hub Cloud Service - Platform
- Oracle Mobile Cloud Metering Service
- Oracle SOA Cloud Service
- Oracle Visual Builder Cloud Service
- Oracle Application Container Cloud Service
- Oracle Application Cache
- Oracle Database Cloud Service
- Oracle Data Integration Platform Cloud Service
- Oracle GoldenGate Cloud Service
- Oracle Cloud Stack Manager
- Oracle Stack VM





The TWO CLIs

- Oracle Cloud has two CLIs*
- What?
- No, really.
- Oh, ok.





- This is for “IaaS” – Infrastructure as a Service Services
- What I care about:
 - Database (Autonomous Data Warehouse)
- Announcements Service (announce)
- Audit (audit)
- Auto Scaling (autoscaling)
- Block Volume Service (bv)
- Compute Management Service (compute-management)
- Compute Service (compute)
- Container Engine for Kubernetes (ce)
- Database Service (db)
- DNS (dns)
- Email Delivery (email)
- File Storage Service (fs)
- Health Checks (health-checks)
- Identity and Access Management Service (iam)
- Key Management Service (kms)
- Load Balancing (lb)
- Monitoring (monitoring)
- Networking Service (network)
- Notification API (ons)
- Object Storage Service (os)
- Oracle Resource Manager (resource-manager)
- Search Service (search)
- Streaming Service API (streaming)
- Web Application Acceleration and Security Services (waas)



We're going to learn some OCI CLI?

Sorry. No.
Sometimes things you want to see are just not destined to be.





Why use the command line?

- It is kind of easier than the website.
- Computers (usually) don't forget to do stuff. Schedule it!
- Create internal services that users can control with the click of a button.
- Telling the computer to do stuff and then seeing it 'just happen' is one of the most gratifying things in the world.
- It looks impressive to people who do not know what you are doing.





What can we do with it?

psm Shared Commands

- **psm**
 - The root command, with an option that lists the command-line interface version.
- **psm cleanup**
 - Removes configured psm client options without confirmation.
- **psm setup**
 - Connects your installation of the command-line interface to your Oracle Cloud identity domain.
- **psm update**
 - Upgrades your installation of the command-line interface to the latest version.
- **psm help**
 - Displays help for each level of the psm command.
- **psm log**
 - Displays or updates the log level of the command-line interface.



psm analytics - Commands List

Service Instance

- `psm analytics create-service` – Creates a service.
- `psm analytics delete-service` – Deletes a service.
- `psm analytics restart` – Restarts the Administration Server on which the service is running.
- `psm analytics services` – Lists all active services within your identity domain.
- `psm analytics service` – Lists details about a specified service.
- `psm analytics stop` – Stops a service that is running.
- `psm analytics start` – Starts a service.
- `psm analytics activities` – Lists the activities of a service.

Storage

- `psm analytics add-storage` – Extends the data or backup volume(s) for Analytics hosts.



psm analytics - Commands List

Access Control

- `psm analytics access-rules` – Lists all access rules for a service.
- `psm analytics create-access-rule` – Creates an access rule.
- `psm analytics delete-access-rule` – Deletes an access rule.
- `psm analytics disable-access-rule` – Disables an enabled access rule.
- `psm analytics enable-access-rule` – Enables a disabled access rule.

Scaling

- `psm analytics scale` – Changes the compute shape of a compute node.
- `psm analytics scale-in` – Removes a managed server from a cluster to scale in the Oracle Analytics Cloud service instance by one node.
- `psm analytics scale-out` – Adds a new managed server to the specified cluster to scale out the Oracle Analytics Cloud service instance by one node.



psm analytics - Commands List

Backup Configuration

- `psm analytics update-backup-config` – Updates the backup configuration of a service.
- `psm analytics view-backup-config` – Lists the backup configuration of a service.

Backups

- `psm analytics backup` – Backs up a service.
- `psm analytics delete-backup` – Deletes a backup of a service.
- `psm analytics view-backup` – Displays information about a specific backup.
- `psm analytics view-backups` – Lists all backups of a service instance.

Restore

- `psm analytics restore` – Restores a service instance from a backup.
- `psm analytics view-restore` – Displays information about a specific restore operation.
- `psm analytics view-restores` – Lists restore history for a service.



psm analytics - Commands List (so many!)

Patches

- `psm analytics applied-patches` – Lists all patches applied to a service.
- `psm analytics available-patches` – Lists all patches available for a service.
- `psm analytics patch` – Applies a patch to a service.
- `psm analytics precheck-patch` – Identifies potential issues that might prevent a patch from completing successfully.
- `psm analytics rollback` – Rolls back a patch for a service.

Job Status

- `psm analytics operation-status` – Shows the status of a command-line operation.



Installing PSM CLI

- Steps:
 - Install the Latest Python with PIP
 - Download the PSM CLI
 - Install PSM CLI with PIP
 - Run the Setup
 - Use it!



<https://www.google.com/search?q=screaming+at+computer>



bald latin business man screaming at ...
stock.adobe.com



Data Backup & Data Recovery in Texas ...
itekps.com



Woman Screaming At Computer Ima...
shutterstock.com



files.ey.md
files.ey.md



Overworked Unhappy Bald Business Man In ...
123rf.com



Screaming Computer Image & Photo (F...
bigstockphoto.com



Relax Naturally With Kava - Wild Oats
wildoats.com



Royalty Free Frustrated Office Worker ...
istockphoto.com



Man with an afro screaming at the ...
colourbox.com



files.ey.md
files.ey.md



Computer and Maintain Your Sanity
musicstartshere.org



Angry Man Screaming at Laptop, Stock ...
shutterstock.com



Frustrated angry business woman si...
depositphotos.com



Bald Latin Business Man I...
istockphoto.com



Furious, Angry Businesswoman Screaming ...
123rf.com



Screaming Computer Stock Photos ...
alamy.com



Furious Man Yelling At Computer Stock ...
dreamstime.com



bald latin business man s...
stock.adobe.com



Angry Irritated Young Businesswoman ...
123rf.com



Screaming Computer Stock Photos ...
alamy.com



Serious angry stress business man in ...
creativemarket.com





What happened?

- I downloaded Oracle Linux
- I tried to install it
- I redownloaded a different version
- I tried to run updates
- I got updates to run
- I tried to install python
- I got python to install
- I tried to download PSM CLI
- I downloaded PSM CLI
- It (finally) worked
- I came here to help you

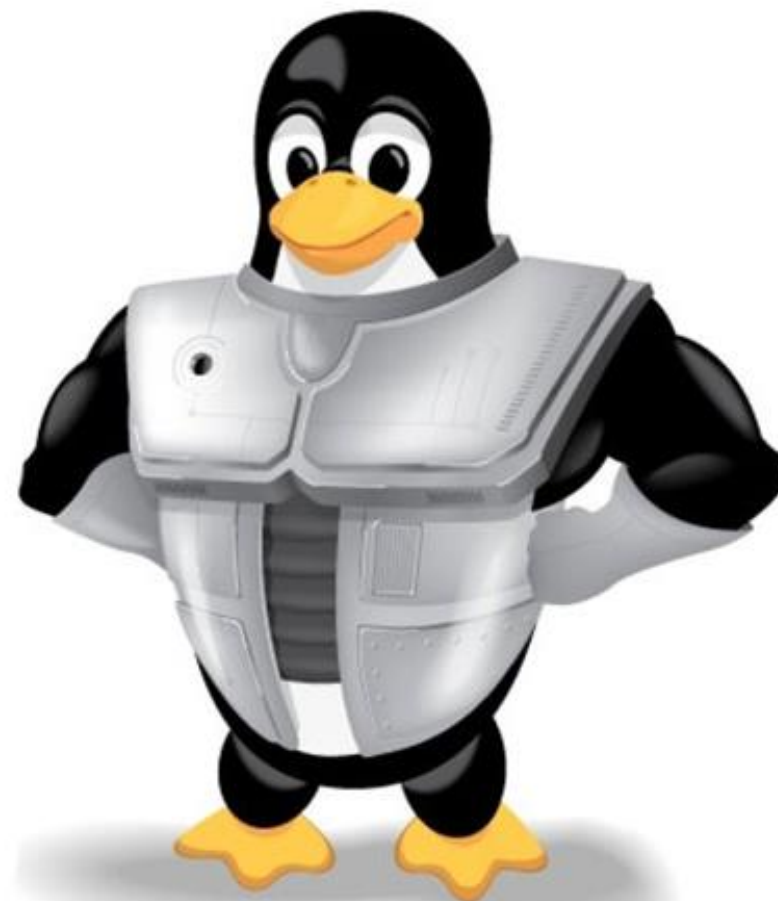




Unbreakable Linux 7

I am a cool guy, so I wanted to do this with Unbreakable Linux.

- Downloaded Latest Oracle Linux 7.6.
 - The bootable disk requires the other disks to be available by network.
 - This isn't necessarily simple on my laptop in a VM.
- Downloaded Linux 7.0.
- Getting updates to run on Oracle Linux 7:
yum update
--Failed out of the box--





Updating Linux

- You have to update the updater first

```
$ yum install oraclelinux-release-el7
```

```
$ rpm -q oraclelinux-release-el7
```

```
$ yum update oraclelinux-release-el7
```

```
$ yum-config-manager --enable ol7_latest  
ol7_optional_latest
```

```
$ yum-config-manager --enable  
software_collections
```

```
$ yum update
```





Prerequisites - Python

The command line requires Python 3.3 or higher. Oracle Linux, by default, yum will only install Python 2.7. You need the *EPEL repository. I used the one from the Fedora Project. Oracle has this repository also.

- Installing Python36 on Oracle Linux:

```
$ wget http://dl.fedoraproject.org/pub/epel/epel-release-latest-7.noarch.rpm
```

```
$ sudo rpm -Uvh epel-release-latest-7.noarch.rpm
```

```
$ yum install python36
```

```
$ python36 --version
```





Python - PIP

- *validates pip installed*

```
$ python36 -m ensurepip --default-pip
```

- *uses pip*

- Pip did not work. This is a pathing issue. it is easy to fix by simply:

```
$ cd /usr/bin
```

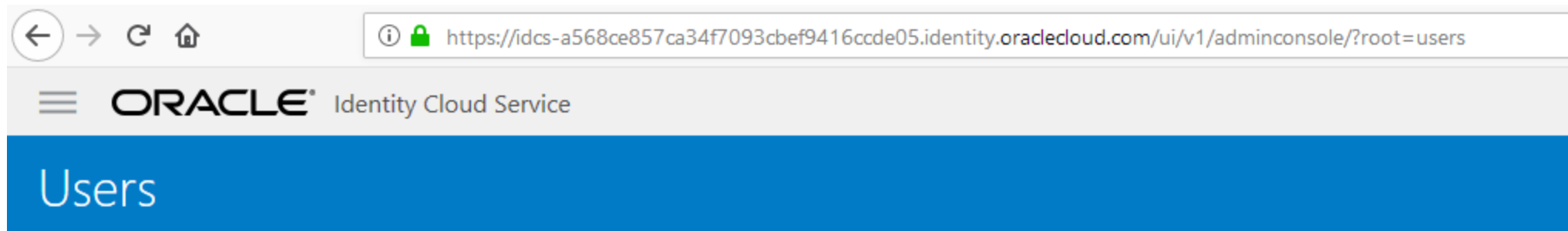
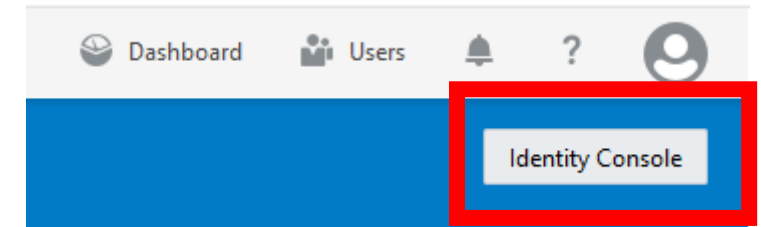
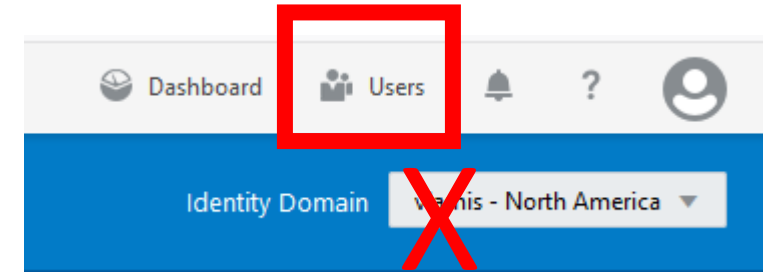
```
$ pip --version
```

- pip now works!



The idcs-blahblahblahblah

- You need your Identity Domain ID. You can find this number by going onto `cloud.oracle.com`. Log into your service. Click the “users” icon in the top-right of your dashboard.
- Now Click the “Identity Console” button.
- It is now in the url.





Download PSM CLI

- Download the actual zip installer from the cloud. The documentation is not exactly accurate.
- I honestly cannot find a "download" link from the Oracle Cloud My Services dashboard. It used to be there. It used to work if you used this:
- <https://psm.us.oraclecloud.com/paas/core/api/v1.1/cli/idcs-ayourlongicdsnumberthing123412341234/client.zip>
- It is easier to just use cURL now than a browser. (A sentence I never thought I would type.)
- Note you need the "IDCS" number. Get that by clicking the "Users" then the "Identity Cloud" button.

```
$ curl -X GET -u USERNAME:P4SSVV0RD -H X-ID-TENANT-NAME:idcs-blahblah  
solongitwraps1234 https://psm.us.oraclecloud.com/paas/api/v1.1/cli/idcs-  
blahblah12341234eleventy1/client -o psmcli.zip
```



Installing via pip

- Now, the doc gives a command line to use, but it didn't exactly work. I used this:
 - in /usr/bin:

```
$ pip install -U /path/to/download/psmcli.zip --user
```
- The “--user” installs the PSM CLI into the home of the Linux user so it does not require additional permissions. The pathing issue means ‘sudo pip’ gives a command not found error.



Setup PSM CLI

Now, setup is actually rather simple and works when you have everything else right.

- Run the setup command.

```
$ psm setup
```

- When prompted, enter your cloud user name, password, and identity domain.

- For example:

```
$ Username: myuser321
```

```
$ Password:
```

```
$ Retype Password:
```

```
$ Identity domain: MyIdentityDomain54321
```



vi JSON and other things

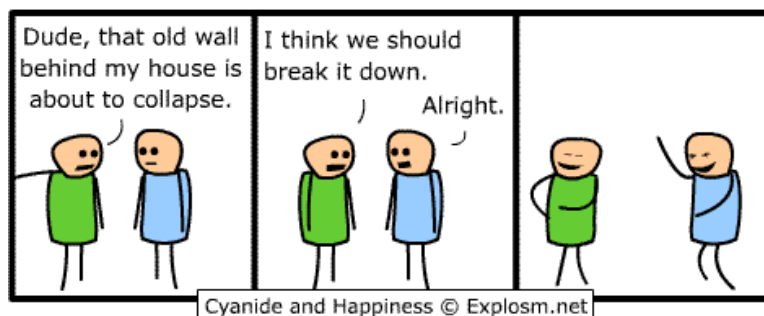
We're doing Analytics Classic. So we need this.

- Setup the .json file.
- This file contains the list of service hosts for a particular service instance.
 - `vi analytics.json`
 - `{"allServiceHosts":"true"}`
- (Then I google how to exit vi while saving changes, then start over because I was in a protected directory on the server and did not 'sudo vi' so it wouldn't save.)
- Now, we type this:
 - `psm analytics start -s Essbase -c analytics.json -of short`



The command

- Break it down:
`psm analytics start -s Essbase -c analytics.json -of short`



Command part	What it is
psm	PSM is the command line executable
analytics	This is the kind of service we are working with. dbcs is what you type for the database services
start	start / stop
-s Essbase	'service name' This defines the service name you are going to work with
-c analytics.json	'configuration' The file we just made
-of short	'output format' we just want an easy response



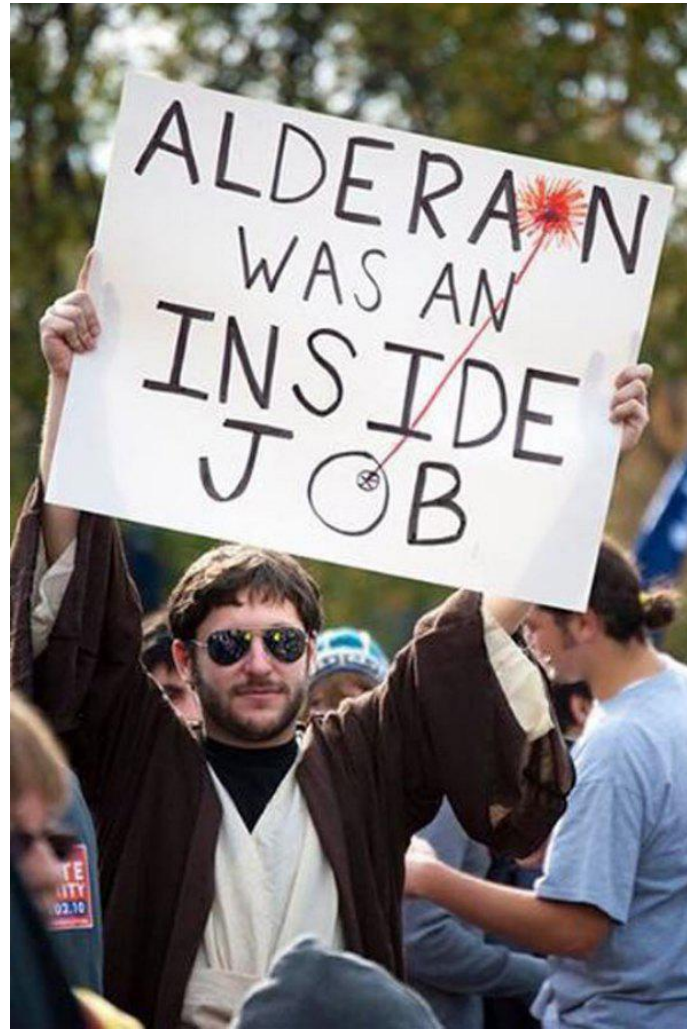
Start Stop Analytics

- Use Task Scheduler crond or whatever to run at regular intervals.
 - `psm analytics stop -s analytics -c stop-analytics.json -of short`
 - `psm analytics start -s analytics -c start-analytics.json -of short`
- starting and stopping an ODBCS is just as simple:
- (Service/Instance name here is 'db')
 - `psm dbcs stop --service-name db -of short`
 - `psm dbcs start --service-name db -of short`



Demonstration

I Googled pictures of “demonstration” and I knew I had to use this:





Questions?





This presentation not possible without:

Oracle Documentation

Oracle Support

Googling error codes

My coworkers support

Stack Overflow

Coffee

The generous people who answer questions on the internet

Python.org

Yum

vi

Spaces not tabs

Several Blogs

That one content aggregator spam website on some tab I closed that picked up a random forum entry that happened to have a snippet of code I pasted into the Linux command line that finally made an error that made enough sense that I could look for the answer I needed to allow me to continue on with my installation

The photographers, filmmakers, and creators who created the pictures I borrowed.



Thank You!

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