



*North American Technology Division
Solution Engineering Team*

200

Oracle Public Cloud Workshop

Cloud Security Day– CASB

Updated: March 10, 2018

Introduction

The purpose of these self-directed exercises is to provide participants hands-on experience, using the Oracle CASB Cloud Service trial account, to perform some key CASB use cases. Please ensure that you have completed the Oracle Security Cloud Day [workshop pre-requisites](#) (<https://csdoracle.github.io/Cloud-Security-Day/CSD-SETUP.html>) before attempting this workshop.

Objectives

The exercises will cover the following CASB features and concepts:

- Sanctioned Application On-boarding
- The CASB Cloud Service Dashboard
- Analyzing Security Controls
- Policies
- Risk Events & User Risk
- Incident Management
- CASB Discovery (Shadow IT)

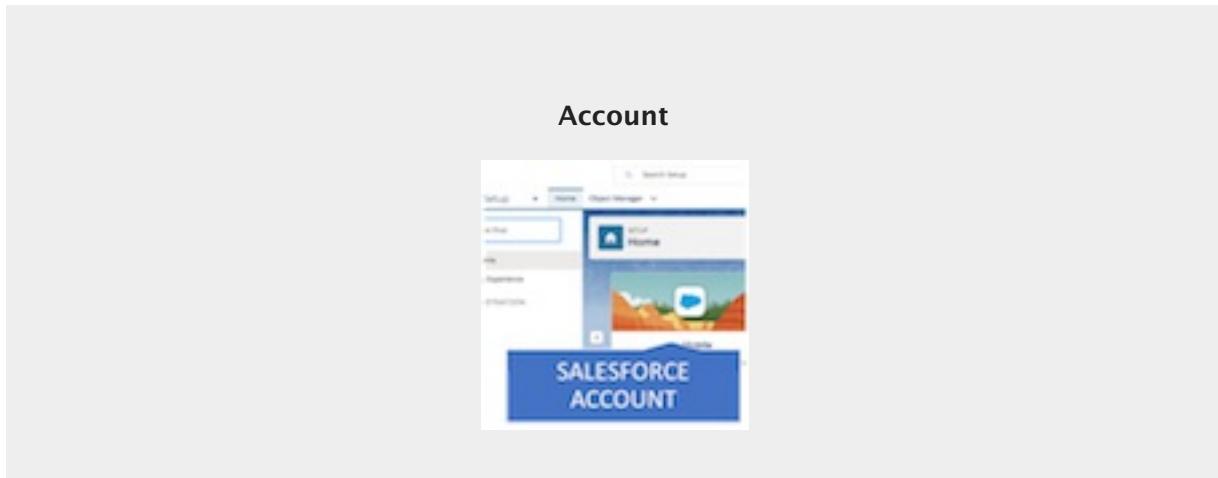
Exercise 1. Sanctioned Application Onboarding

Overview:

In this session, you will be using the Oracle CASB Cloud Service UI to onboard a Salesforce Developer Account into your Oracle CASB Cloud Service tenant to be monitored. We will also configure CASB to update some of the security related settings in Salesforce to bring it in line with a configuration baselines we configured in CASB for Salesforce.

Exercise:

STEP 1: Prepare your assigned Salesforce Developer Account for this exercise by configuring an insecure password policy in Salesforce :

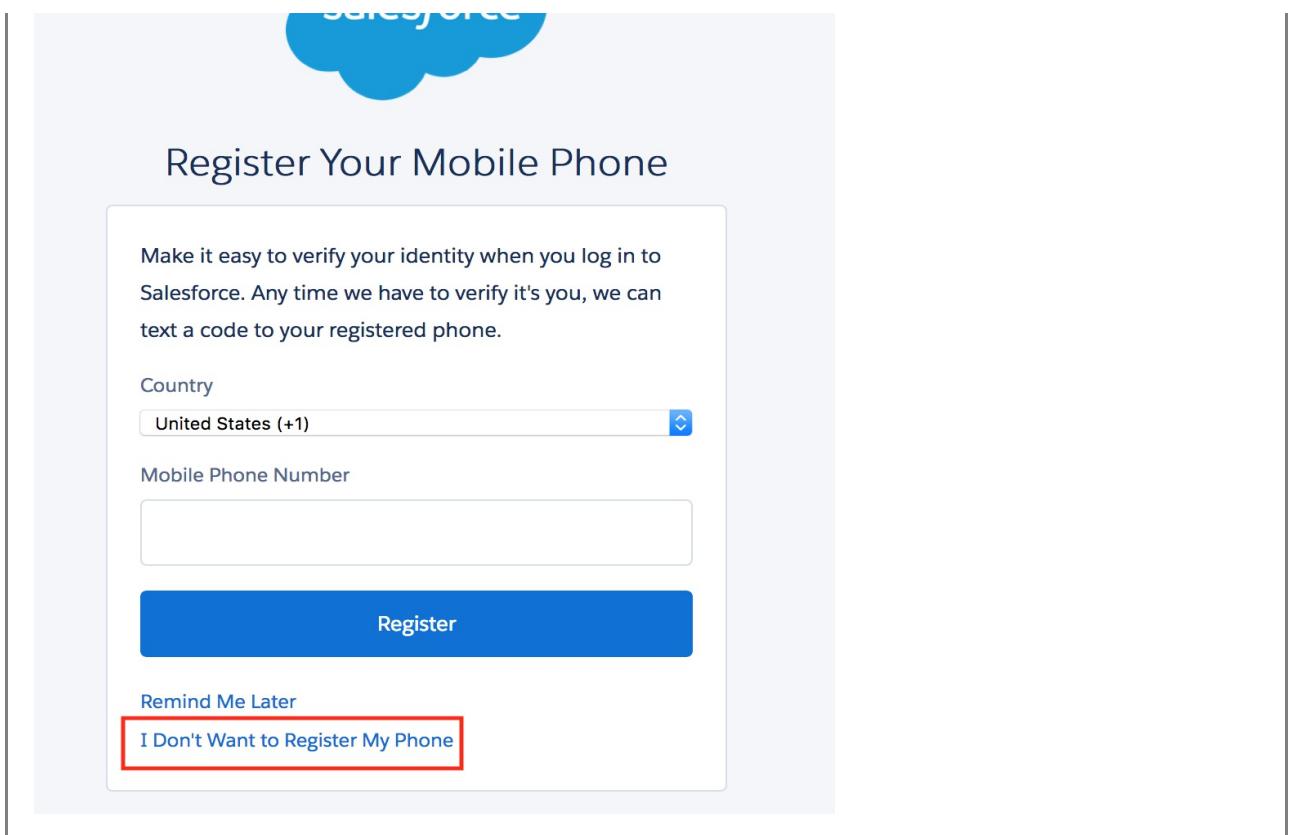


In a new Private Browsing Tab, sign in to your Salesforce account at
<https://login.salesforce.com> (<https://login.salesforce.com>)

LOGIN INSTRUCTIONS:

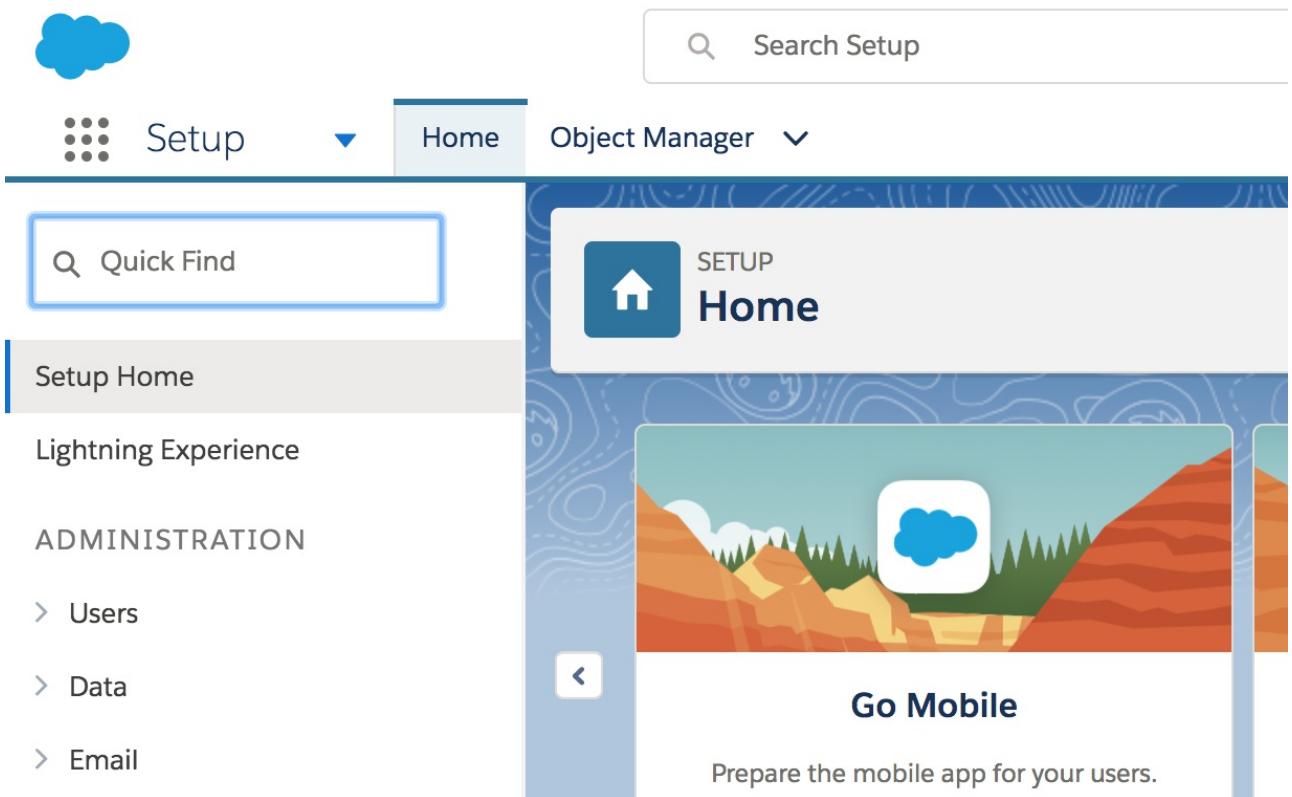
You may run into the following issues

1. If you are unable to access the Salesforce login form due to an SSL warning in your browser, refer to the printed handout that you received ,that contains your Salesforce account credentials, for instruction on how to bypass the issue that prevents you from connecting to Salesforce from the Oracle guest network.
2. After you provide your credentials Salesforce may require you to provide a verification code at this point . Verification codes will be sent to the workshop leader's e-mail account and will be posted on the following [link. \(https://cloudsecurityday.blogspot.com\)](https://cloudsecurityday.blogspot.com) You can browse the link and find the code for your assigned Salesforce User.
3. You may also be prompted to register your phone number with Salesforce . Select the "I Don't Want to Register My Phone" link



The image shows the Salesforce mobile phone registration page. At the top, there is a blue cloud icon with the word "Salesforce" written vertically. Below it, the title "Register Your Mobile Phone" is displayed. A text box contains the following message: "Make it easy to verify your identity when you log in to Salesforce. Any time we have to verify it's you, we can text a code to your registered phone." Below the message are input fields for "Country" (set to "United States (+1)") and "Mobile Phone Number". A large blue "Register" button is centered below these fields. At the bottom, there are two links: "Remind Me Later" and "I Don't Want to Register My Phone", with the latter being highlighted by a red rectangular border.

Once you're in the Salesforce Setup UI Use the upper-left "Quick Find" box to search for *Password Policies*.



The image shows the Salesforce Setup UI. At the top, there is a navigation bar with a blue cloud icon, a search bar labeled "Search Setup", and menu items "Setup", "Home", and "Object Manager". On the left, a sidebar features a "Quick Find" search box and a list of administration categories: "Setup Home", "Lightning Experience", and "ADMINISTRATION" which includes "Users", "Data", and "Email". On the right, there is a large "SETUP Home" button with a house icon. Below it is a decorative graphic of a landscape with mountains and a cloud, and the text "Go Mobile" with the sub-instruction "Prepare the mobile app for your users."

Under "*Password Policies*" set user passwords to "Never Expire".

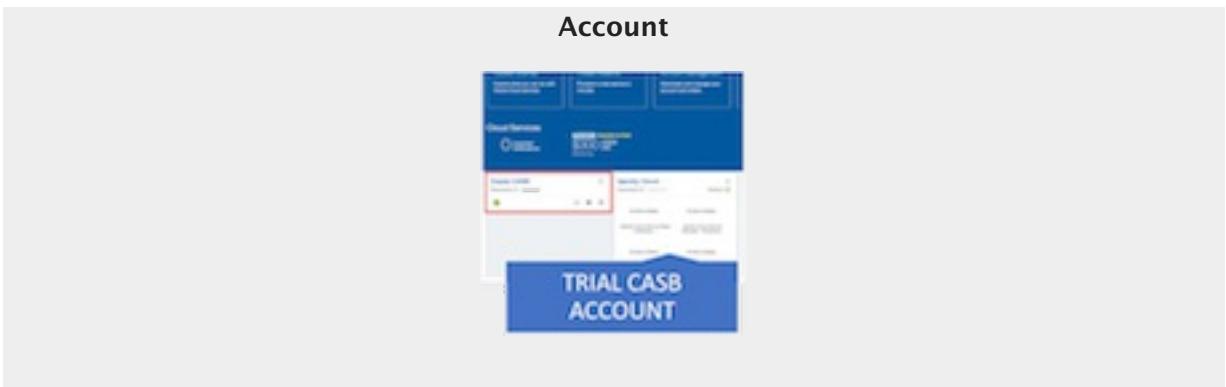
The screenshot shows the Oracle Cloud Setup interface. The left sidebar has a 'Security' section with 'Password Policies' selected. The main content area is titled 'Password Policies' and contains a form to set password restrictions. A dropdown menu for 'User passwords expire in' is open, showing options like '30 days', '60 days', '90 days', '180 days', 'One year', and 'Never expires'. The 'Never expires' option is selected. Other settings include '3 passwords remembered' (set to 8), 'Must mix alpha and numeric characters', 'Cannot contain password', 'Maximum invalid login attempts' (set to 10), 'Lockout effective period' (set to 15 minutes), and 'Allow use of setPassword() API for self-resets' (checked). A note at the top says 'Set the password restriction for all users.'

Under “*Password Policies*” choose to not enforce password history.

This screenshot shows the same setup interface as above, but with a different configuration. The 'Password Policies' dropdown now shows 'No passwords remembered' as the selected option, while 'Never expires' is no longer checked. The other settings remain the same: '3 passwords remembered' (set to 8), 'Must mix alpha and numeric characters', 'Cannot contain password', 'Maximum invalid login attempts' (set to 10), 'Lockout effective period' (set to 15 minutes), and 'Allow use of setPassword() API for self-resets' (checked).

At the bottom of the “*Password Policies*” page, click the “Save” button.

STEP 2: Login to your Oracle Cloud Trial account and navigate to the Oracle CASB Cloud Service.



Start a **new private browsing tab** in your browser and log into your Oracle Cloud Trial Account with the appropriate credentials. Refer to the [workshop re-requisites](https://csdoracle.github.io/Cloud-Security-Day/CSD-SETUP.html) (<https://csdoracle.github.io/Cloud-Security-Day/CSD-SETUP.html>) for instruction how to sign in to your Oracle Cloud trial account then go to the cloud "Dashboard" to access the trial CASB service.

The screenshots illustrate the Oracle Cloud My Services interface, showing the guided journey and available services. The 'Identity Cloud' and 'Oracle CASB' services are highlighted, and the 'Open Service Console' option for the Oracle CASB service is specifically pointed out.

STEP 2: Choose to add a new Salesforce instance by clicking on the Salesforce icon, and click *Next*.

In a new CASB tenant , with no Applications integrated yet, you will start at the "*Applications*" page with a collection of badges that represent various sanctioned applications that can be integrated with CASB .



STEP 3: Provide the name of the Salesforce instance.

CASB cloud service allows you to add multiple accounts/tenants of any given cloud service as long as each instance has a unique name.

Enter a unique name for the instance for example: *SFDC_Userx*. Set all other values as shown in the following screen capture.

Press the "*Next*" button to proceed to the next step of the "*Register an app instance*" wizard

A screenshot of a software window titled "Register an app instance". On the left is a sidebar with a red box around the "Applications" tab, which is currently selected. Other tabs include "Risk Events", "Reports", "Users", "Incidents", "Jobs", and "Configuration". The main panel has a title bar "Manage app instances" with a dropdown menu "Select an app type" set to "Select an instance". Below this are sections for "Select monitoring type", "Select security controls", and "Enter credentials". A "Success" message is displayed below a small "Salesforce" logo. To the right, there's a "Select an instance" section with a "You selected" message, a "SFDC" logo, and a "Type a unique name for your instance" input field containing "SFDC_Userx". There are several checkboxes: "Monitor field-level history for Salesforce objects.", "Report and store values changed from/to (which may contain company data)", "This is a sandbox", and "The users of this app instance log in using single sign-on through an identity provider". A note says "We recommend that you only create one instance for an account. Here are existing Salesforce instance names:" followed by a numbered list from 1 to 19. At the bottom are "Cancel", "Previous", and "Next" buttons, with "Next" being highlighted with a red box.

FYI, If a Salesforce account is federated with a supported Cloud Identity Provider (IdP) you can select the "*The users of this app instance log in using single sign-on through an identity provider*" checkbox and select the Identity Provider being used from a list of pre-configured providers

STEP 4: Select Security Control Monitoring Option

Explanation:

Security controls will be explained in more detail in a later exercise but suffice it to say for now that Enterprise Cloud Applications have security-related settings, such as password complexity requirements and idle session timeouts, that Oracle CASB Cloud Service can monitor and change according to a baseline configuration, for a particular Enterprise Cloud Application, that is defined in CASB Cloud Service

On this screen, we can choose to either:

"*Monitor-only*" in which case Oracle CASB Cloud Service reports on these security control values, but doesn't change them in the cloud application.

or

"*Monitor and push*" the preferred values to the cloud application. At registration time, Oracle CASB Cloud Service ensures that your cloud application has your preferred security configuration values. After registration, Oracle CASB Cloud Service reports on changes to these values.



Push controls and monitor

Push security control values to this instance. You select the values on the next page.

Select the "*Push controls and monitor*" radio button and then press the "*Next*" button.

STEP 5: Select "*Standard*" Security Controls Policy

Select an instance
 Standard
 Stringent
 Custom

✓ Select monitoring type

Select security controls

Enter credentials

Success



 GORDON_SFDC

Security Control	Value
User password expire in	90 days
Enforce password history	3 passwords remembered
Minimum password length	8 characters
Password complexity requirement	Must mix alpha and numeric
Password question requirement	None
Maximum invalid login attempts	10
Lockout effective period	15 minutes
Obscure secret answer for password resets	<input type="checkbox"/>

Session Settings

Approval

I understand and explicitly approve seeding security controls to "Salesforce - GORDON_SFDC" with the settings in "Standard"

Cancel
Previous
Next

Because the monitor and push option was selected an "*Approval*" radio button will be displayed that will prompt you to acknowledge and consent to CASB Cloud Service making changes in the target service (Salesforce in this case) to bring its security configuration in compliance with the selected Security Control baseline.

Click the "*Next*" button

Optional: You can review the Controls being monitored and enforced under the *Standard* and *Stringent* Security Controls baselines. You can also define your own security control baseline by clicking on the *Custom* radio button and configuring the security controls you would like to enforce for a given sanctioned app.

STEP 6: Authenticate to Salesforce and allow CASB to access your Salesforce Account

You will be redirected to Salesforce to login (a second time) , and you will see the following screen in the process:

Please Wait ...

In a few seconds, you will be temporarily sent to Salesforce for credential verification. You will automatically return to the Oracle CASB Cloud Service console after Salesforce verifies the credentials.

Use the credentials for the Salesforce tenant that has been assigned to you during the workshop. Upon login, you will be asked to confirm that you want to grant access to the Oracle CASB Cloud Service:



Allow Access?

Palerra LORIC Platform - POC Trial is asking to:

- Access your basic information
- Access and manage your data
- Provide access to your data via the Web
- Access and manage your Chatter data
- Provide access to custom applications
- Allow access to your unique identifier
- Access custom permissions
- Access and manage your Wave data
- Access and manage your Eclair data
- Perform requests on your behalf at any time

Do you want to allow access for @gmail.com?
(Not you?)

Deny

Allow

To revoke access at any time, go to your personal settings.

FYI, This is part of the Salesforce Authorization Code OAuth flow that CASB utilize to obtain authorization, (OAuth Access Token) to access the relevant Salesforce APIs it will use to integrate with Salesforce.

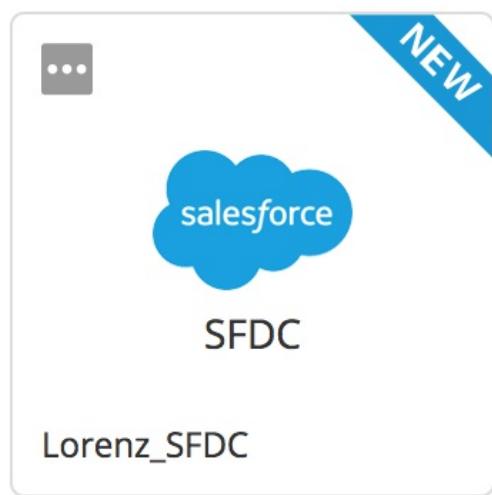
Click the *Allow* button to allow the access. (You will be redirected back to the Oracle CASB Cloud Service.

Then click on the "*Done*" button on the following screen that informs you about the data collection delay that you should expect

Click on the "*Applications*" navigation option using the Navigation Bar on the left of the CASB UI.



CASB will now start the initial data collection for the new application . You can expect this initial data collection to complete within 30 to 120 minutes. While the initial data collection is taking place, the application will be tagged with the "*NEW*" banner in the application list.



After the data load has taken place, the application will shed the "*NEW*" banner

STEP 7: Review changes made in Salesforce to bring it in line with the Security Control baseline we selected.

Recall that we changed the password policy in Salesforce to *never expire*, however notice that the security control we selected with the "*Standard*" baseline requires the password to expire in 90 days.

As the Salesforce service is being on-boarded **CASB will access the Salesforce APIs to change the password policy, among many other configuration settings, in Salesforce to comply with the security control baseline we selected in CASB.**

You can verify the changes by logging on to Salesforce and, as in Step 1 of this exercise, navigating to the "*Setup*" menu, then use the upper-left "*Quick Find*" box to search for "*Password Policies*" (no quotes) and review the "*User passwords expire in*" field to verify that it has been **changed back to expire in 90 days**, also notice that the enforce password history has been changed back to "*3 passwords remembered*".

Since we selected to have the CASB Cloud Service push the security control setting to Salesforce the new Salesforce instance should not have any violations, **After the initial load is complete**, and should appear in the low risk services category.

FYI, If we selected the "Monitor Only" option instead of the "*Push Controls and Monitor*" option in step 4 we would have had security control violations appear in the CASB dashboard for the Salesforce tenant after the initial scan.

Exercise 2. Analyze Security Controls

Overview:

Enterprise Cloud Applications have security-related settings, such as password complexity requirements and idle session timeouts. Oracle CASB Cloud Service can detect settings that aren't strong enough.

Security settings protect both data and users. For example, when users are allowed to keep sessions idle for hours at a time, it increases the risk of their accounts being compromised.

Oracle CASB Cloud Service looks at cloud service configurations and identifies weaknesses in security both up front (at registration time) and on an ongoing basis to identify drift, or gradually increasing deviation, from the ideal configuration. As mentioned in Exercise 2, there are two ways you can configure Oracle CASB Cloud Service to monitor for weak security controls:

Monitor-only. Oracle CASB Cloud Service reports on these security control values, but doesn't change them in the cloud application.

Monitor and push preferred values to the cloud application. At registration time, Oracle CASB Cloud Service ensures that your cloud application has your preferred security configuration values. After registration, Oracle CASB Cloud Service reports on changes to these values.

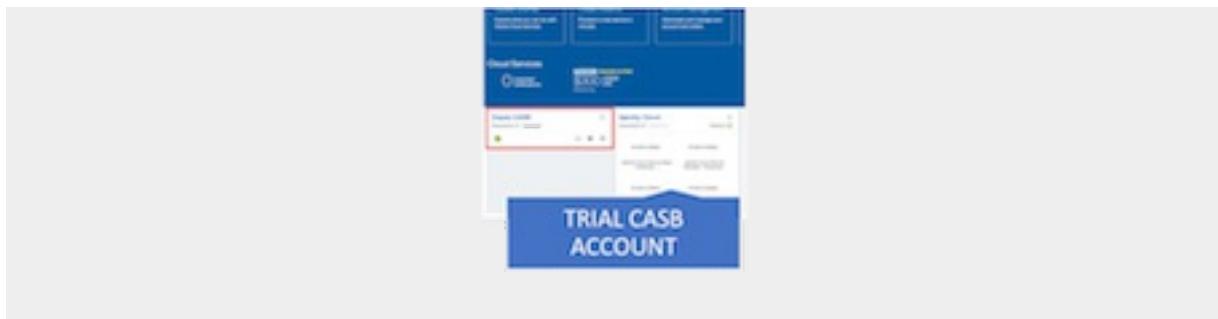
Exercise:

We will change the Salesforce Application's security control baseline in a way that will result in security control violations being reported in CASB. We will then review some of the resulting security control violations and finally we will explore how CASB can perform automated remediation of the security control violations.

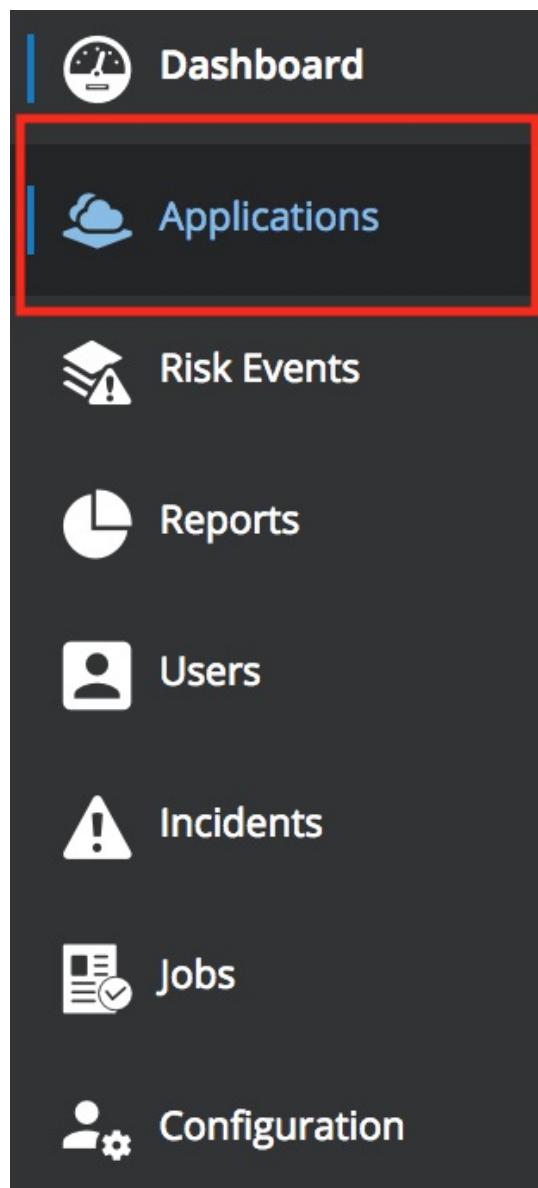
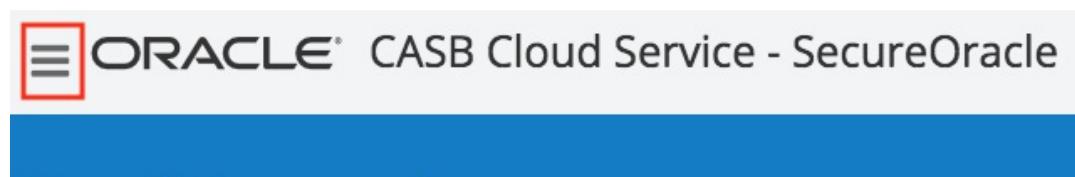
Note that changing the security control baseline, **after** the initial application onboarding completed (with the *Monitor and push* option selected), does NOT result in the configuration changes being pushed from CASB to the Application. We will see later in the exercise how configuration changes are pushed after the initial onboarding.

STEP 1: Update Security Control Baseline

Account



Update the CASB security control baseline for your assigned Salesforce instance. To do so, in **your free Cloud Trial account CASB Service** (it should already be open in one of your private browsing tabs), click on "*Applications*" in the left navigation bar



then find your Salesforce instance (use the search icon in the upper-right, if necessary), click on "Modify", and then from the drop-down selection choose "*Update Security Control Baseline*".

The screenshot shows the Applications dashboard with a list of connected services. The 'salesforce' instance under 'SFDC' is highlighted with a red box and an arrow labeled '1'. A context menu is open over this instance, with another arrow labeled '2' pointing to the 'Modify' button. A third red box labeled '3' highlights the 'Update security control baseline' option in the dropdown menu.

In the next screen, choose to use a "*Stringent*" security control baseline.

The screenshot shows the 'Update security control baseline' configuration page. The 'Stringent' radio button is selected. A red arrow points to the 'Use the new threshold values' checkbox, which is currently unchecked. The 'Submit' button at the bottom right is highlighted with a red box.

Optional: Expand the Password Policy and Session Settings sections to see more detail on which controls are being enforced by the "*Stringent*" Security control baseline.

Check the Confirmation box that says to “*Use the new threshold values*” and click on the “*Submit*” button.

Confirmation

Use the new threshold values

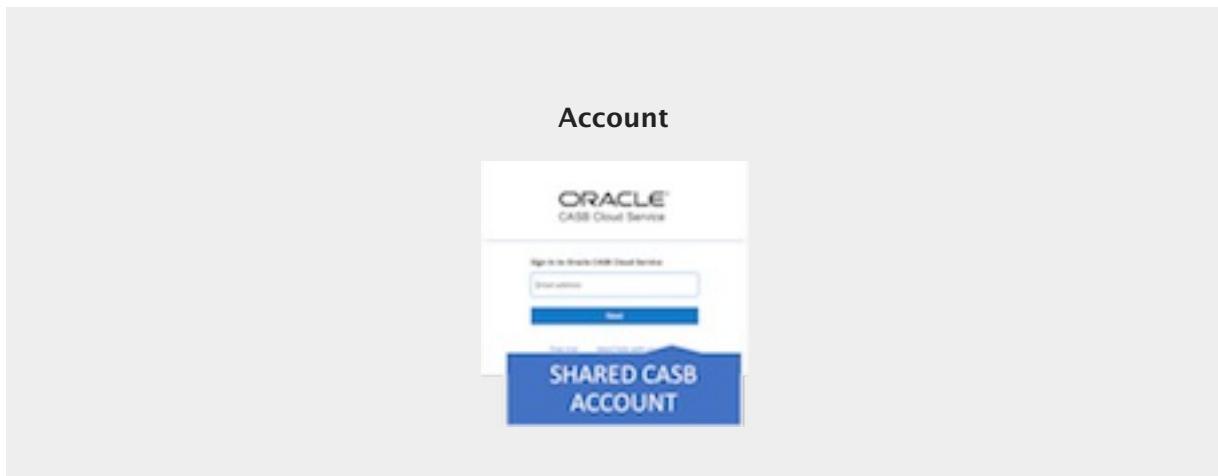
Cancel Previous Submit

You will now see a message that indicates that the baseline has been updated. Click the “*Done*” icon.

STEP 2: Review security control violations



As mentioned , there will be a delay between the time the security control baseline is updated and until the next scan of the Salesforce tenant's settings will be compared to the new baseline. Possible violations will therefore not appear until the next scan takes effect.



Rather than wait for the scan to complete on your trial tenant **you can switch back to the shared CASB tenant you used in Exercise 2 at <https://trial.palerra.net/sessions> (<https://trial.palerra.net/sessions>) and complete the remainder of the exercise in the shared tenant.** As a reminder, login instructions to the shared tenant were provided to each workshop participant as a seperate handout. If you did not receive your instructions please inform one of the workshop proctors.

STEP 2.1: Use the left navigation bar to go to the “*Applications*” view.

There should be an exclamation point icon in your Salesforce Tenant’s Application List badge indicating there are some new Risk Events we can evaluate for the application.

STEP 2.2: Click, on the SalesForce application's badge

Choose the “*View Details*” button from the “*Health Summary*” popup dialog.

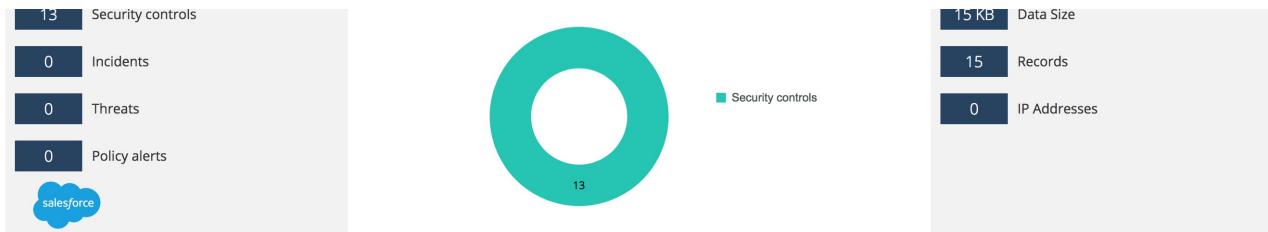
The screenshot shows the CASB Cloud Service - Applications dashboard. The left sidebar has tabs for Dashboard, Applications (highlighted with a red box), Risk Events, Reports, Users, Incidents, Jobs, and Configuration. The main area shows a grid of applications. One application, 'GORDON_SFDC', is circled in red. In the top right, there's a 'Health Summary' section with a red box around the 'View details' button.

STEP 2.3: Browse the Security Control Violations

From the details page, a number of non-compliant security controls have been detected.

The screenshot shows the 'App Details' page for 'Lorenz_SFDC (SFDC)'. It includes sections for 'TOP RISK ACTIVITIES', 'RISKS BY CATEGORY' (a donut chart showing 13 risks), and 'DATA PROCESSED IN THE LAST 90 DAYS'. Below is a table of 'Risk Events by App (13)'.

RISK LEVEL	SUMMARY	CATEGORY	DETECTED ON	STATUS	INCIDENT	ACTION
!	Lockout effective period	Security control	Dec 10, 2017 19:05:49 UTC	Open	Create	Action
!	Enable clickjack protection for customer Visualforce pages with standard headers	Security control	Dec 10, 2017 19:05:48 UTC	Open	Create	Action
!	Maximum invalid login attempts	Security control	Dec 10, 2017 19:05:48 UTC	Open	Create	Action
!	Timeout value	Security control	Dec 10, 2017 19:05:48 UTC	Open	Create	Action
!	Enable caching and autocomplete on login page	Security control	Dec 10, 2017 19:05:48 UTC	Open	Create	Action
!	Password complexity requirement	Security control	Dec 10, 2017 19:05:48	Open	Create	Action



Risk Events by App (13)

	RISK LEVEL	SUMMARY	CATEGORY	DETECTED ON	STATUS	INCIDENT	ACTION
<input type="checkbox"/>	!	Lockout effective period	Security control	Dec 10, 2017 19:05:49 UTC	Open	Create	Action
<hr/>							
	ID	205907000013					
	Baseline value	60 minutes					
	Current value	15 minutes					
	Diagnosis	Non-compliant security setting					
	Occurred	Dec 10, 2017 19:05:49 UTC					
	Scan details	Initial Oracle CASB Cloud Service scan					
	Security control name	Lockout effective period					
	Status	Open					
<input type="checkbox"/>	!	Enable clickjack protection for customer Visualforce pages with standard headers	Security control	Dec 10, 2017 19:05:48 UTC	Open	Create	Action
<input type="checkbox"/>	!	Maximum invalid login attempts	Security control	Dec 10, 2017 19:05:48	Open	Create	Action

From the Action menu, note that we could choose to create a new incident based on this particular Risk Event.

STEP 3: Auto remediate a security control risk event.

STEP 3.1: Verify that the "clickjack" protection is not enabled in Salesforce

In this step, we'll automatically remediate one of the security control risk events :

First we'll verify that the "*clickjack*" protection is not enabled in Salesforce:

With your assigned Salesforce account navigate to *Setup -> Security -> Session Settings* and verify the "*Enable clickjack protection for customer Visualforce pages with standard headers*" checkbox is unchecked.

The screenshot shows the Salesforce Setup interface. In the left sidebar, under 'Company Settings' and 'Security', the 'Session Settings' link is highlighted with a red box. The main content area is titled 'Session Settings' and contains several configuration sections:

- Identity Verification**: Includes options for enabling secure browser caching, user switching, and remember me until logout.
- Lightning Login**: Allows enabling Lightning Login with or without user permission.
- Clickjack Protection**: Has four checkboxes:
 - Enable clickjack protection for Setup pages
 - Enable clickjack protection for non-Setup Salesforce pages
 - Enable clickjack protection for customer Visualforce pages with standard headers (this option is highlighted with a red box)
 - Enable clickjack protection for customer Visualforce pages with headers disabled
- Cross-Site Request Forgery (CSRF) Protection**: Includes checkboxes for enabling CSRF protection on GET and POST requests.
- Content Security Policy protection**: Includes a checkbox for enabling Content Security Policy protection for email templates.
- XSS protection**: Includes a checkbox for enabling XSS protection.
- Content Sniffing protection**: No options shown.

STEP 3.2: Auto Remediate the Security Control violation

In the shared CASB , select the "*Enable clickjack protection for customer Visualforce pages with standard headers*" incident in the list of incidents and under the Action column select the "View incident" dropdown option.

RISK LEVEL	SUMMARY	CATEGORY	DETECTED ON	STATUS	INCIDENT	ACTION
!	Lockout effective period	Security control	Jan 23, 2018 19:39:15 UTC	Open	215915000015	Action
!	Enable clickjack protection for customer Visualforce pages with standard headers	Security control	Jan 23, 2018 19:39:15 UTC	Open	215915000014	Action
!	Force relogin after Login-As-User	Security control	Jan 23, 2018 19:39:15 UTC	Open	215915000013	Dismiss
!	Password question requirement	Security control	Jan 23, 2018 19:39:15 UTC	Open	215915000012	View incident
!	Maximum invalid login attempts	Security control	Jan 23, 2018 19:39:15 UTC	Open	215915000011	Action

On the "View Incident" dialog select the "Edit Incident" button.

View incident

SF
TIV
ec
nci
hre
oli
by
LE

ID	215915000014
App instance	SFDC:GORDON_SFDC
Detected on	Jan 23, 2018 19:39:15 UTC
Category	Security control
Description	Strengthen the security control value : Enable clickjack protection for customer Visualforce pages with standard headers
Remediation action	Enable clickjack protection for customer Visualforce pages with standard headers
Security control name	Enable clickjack protection for customer Visualforce pages with standard headers
Current value	false
Recommended value	true
Assigned to	david.x.lee+so@oracle.com
Status	Open
Priority	High
Occurred	Jan 23, 2018 19:39:15 UTC

Related risk events or threats

SFDC: GORDON_SFDC
Risk Event ID: 215915000014

Enable clickjack protection for customer Visualforce pages with standard headers

Details
Scan details: Drift from initial Oracle CASB Cloud Service scan
Security control name: Enable clickjack protection for customer Visualforce pages with standard headers
Current value: false
Recommended value: true
Message: Non-compliant security setting
Occurred: Jan 23, 2018 19:39:15 UTC

Cancel Edit Incident

On the "Edit Incident" dialog select the "Resolve" button.

Kenneth H Burns court cases - Bing

Edit Incident

SF

Detected on Jan 23, 2018 19:39:15 UTC

Category Security control

Description Strengthen the security control value : Enable clickjack protection for customer Visualforce pages with standard headers

Remediation action Enable clickjack protection for customer Visualforce pages with standard headers

Security control name Enable clickjack protection for customer Visualforce pages with standard headers

Current value false

Recommended value true

Assigned to david.x.lee+so@oracle.com

Status Open

Priority High

Occurred Jan 23, 2018 19:39:15 UTC

Related risk events or threats

SFDC: GORDON_SFDC

Risk Event ID: 215915000014

Enable clickjack protection for customer Visualforce pages with standard headers

Details

Scan details: Drift from initial Oracle CASB Cloud Service scan

Security control name: Enable clickjack protection for customer Visualforce pages with standard headers

Current value: false

Recommended value: true

Message: Non-compliant security setting

Occurred: Jan 23, 2018 19:39:15 UTC

Save Resolve

On the resulting incident dialog ensure that the default "Auto Remediation" radio button is selected and click the "Approval" radio button and then click on the "Resolve Incident" button.

Remediation

Auto remediation



Manual remediation

Recommended action

Enable clickjack protection for customer Visualforce pages with standard headers

Security control name

Enable clickjack protection for customer Visualforce pages with standard headers

Current value

false

Recommended value

true

Description

Strengthen the security control value : Enable clickjack protection for customer Visualforce pages with standard headers

Detected on

Jan 23, 2018 19:39:15 UTC

Occurred

Jan 23, 2018 19:39:15 UTC

Reason



Approval

I understand and explicitly approve taking the action above with the application SFDC, instance GORDON_SFDC.

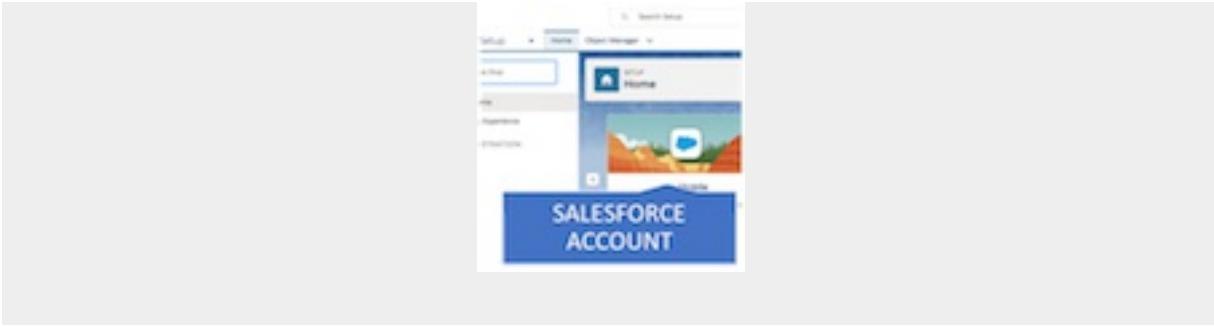
Cancel

Resolve incident

FYI, CASB Cloud Service will now invoke the Salesforce API to change the "Clickjack Protection" setting in Salesforce to bring it into compliance with the CASB Security Control baseline that is in effect.

STEP 3.3: Verify that the "Clickjack" policy has been changed in Salesforce

Account



In Salesforce navigate to: *Setup* -> *Security* -> *Session Settings* again and verify the "Clickjack Protection" has been modified in Salesforce.

The screenshot shows the Salesforce Setup interface with the following details:

- Setup** tab selected in the top navigation.
- Search bar**: session
- Categories**: Security (selected), Session Management, Session Settings (highlighted with a red box).
- Message**: Didn't find what you were looking for? [Search all of Setup instead](#).
- Session Settings Page Content**:
 - Identity Verification**:
 - Enable the SMS method of identity verification i
 - Require security tokens for API logins from callouts (API version 31.0 and earlier)
 - Let users use a security key (U2F) i
 - Require identity verification during two-factor authentication registration
 - Require identity verification for change of email address
 - Allow location-based automated verifications with Salesforce Authenticator
 - Allow only from trusted IP addresses
 - Lightning Login**:
 - Allow Lightning Login
 - Allow only for users with the Lightning Login User permission
 - Clickjack Protection**:
 - Enable clickjack protection for Setup pages i
 - Enable clickjack protection for non-Setup Salesforce pages i
 - Enable clickjack protection for customer Visualforce pages with standard headers
 - Enable clickjack protection for customer Visualforce pages with headers disabled i

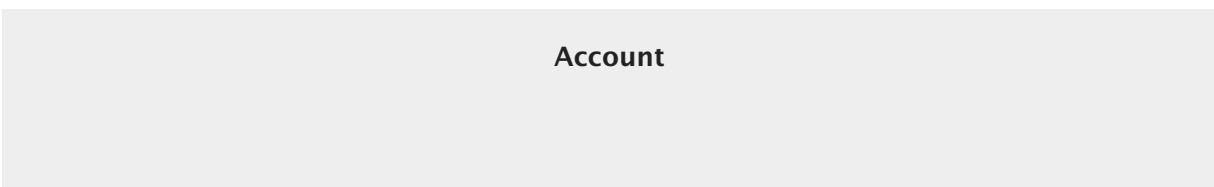
Exercise 3. CASB Cloud Service Dashboard

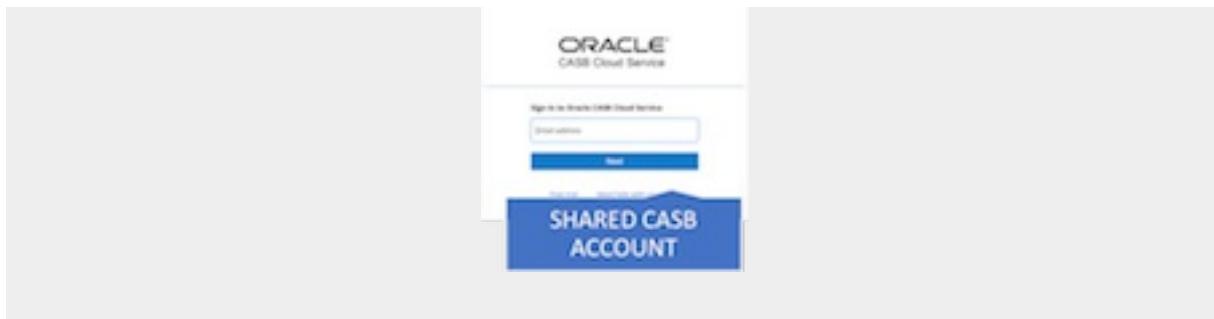
Overview:

This session will familiarize you with the Oracle CASB Cloud Service User Interface and dashboard

Exercise:

STEP 1: Sign on to the **shared** Oracle CASB Cloud Service





Refer to the handout you received that will contain CASB login credentials to a shared workshop CASB tenant. **Within a new private browsing tab**, navigate to the shared Oracle CASB Service URL at <https://trial.palerra.net/sessions> (<https://trial.palerra.net/sessions>) and **use the credentials of the shared tenant you received to perform this exercise.**

ORACLE[®] CASB Cloud Service

Sign in to Oracle CASB Cloud Service

Email address

Next

Free trial

Need help with signing in?

FYI , If you are **not** following these instructions in the context of a workshop and wish to perform some of these exercises on your own then log in to your free Oracle Cloud Trial account and select the "Oracle CASB Cloud Service" from the list of available services. Refer to the [workshop re-requisites \(<https://csdoracle.github.io/Cloud-Security-Day/CSD-SETUP.html>\)](https://csdoracle.github.io/Cloud-Security-Day/CSD-SETUP.html) for instruction how to sign in to your Oracle Cloud trial account and access the CASB service.

STEP 2: Review select items on the CASB Dashboard

The purpose of the dashboard is to give the user a summary view of various important Cloud service security related information. Some of the more important items on the dashboard are:

Service Health Indicators

The Health Indicator Carousel presents indicators of the overall health state of the cloud services being monitored by a particular CASB tenant.

The screenshot shows the Oracle CASB Cloud Service - SecureOracle interface. On the left, there's a sidebar with links: Dashboard (highlighted with a red box and number 1), Applications, Risk Events, Reports, and Users. The main area has a blue header 'Dashboard: Summary' with tabs: Summary (highlighted with a red box and number 2), App Discovery, and Key Security Indicators. Below these are six cards in a grid. The first card is 'Add an App' (blue plus sign icon). The second card is 'Unreachable' (red hand icon) with the number '0'. The third card is 'High' (red exclamation mark icon) with the number '22'. The fourth card is 'Medium' (orange exclamation mark icon) with the number '0'. The fifth card is 'Low' (yellow exclamation mark icon) with the number '1'. The sixth card is 'New' (grey square icon with three dots) with the number '0'. A red box highlights the 'Key Security Indicators' section at the bottom of the central area.

There are 5 Health indicator tabs into which the various services being monitored are shorted into:

-  — Status: Application instance is unreachable.
-  — High risk level. A threat has been detected.
-  — Medium risk level. Some items require investigation, but no behavioral threats or malicious IP address accesses.
-  — Low risk level. Few or no issues require attention.
-  — Status: You or another administrator recently added this application instance. Oracle CASB Cloud Service is collecting initial data.

Health Summary: All App Instances

Health Summary: All App Instances



48 Non-compliant security controls

48 Open incident tickets

15 Threats

6 Policy alerts

"The Health Summary: All Application Instances" card summarizes potential threat information across **all** registered application instances. The definitions of the different health and risk indicators listed on this card (e.g. Policy Alerts) will be presented in additional sessions within this workshop.

Access Map



The Access Map shows points of origin for both normal (green dot) and suspicious (red dot) events. Click on the map markers to see more detail about the events associated with a particular geographic location.

Legend :



– Indicates a cluster of normal events. Click this symbol to see individual normal

events.



– Indicates an individual normal event.



– Indicates a cluster of suspicious events. Click this symbol to see individual suspicious

events.



– Indicates an individual suspicious event.

FYI, the other summary cards on the Dashboard Summary tab, such as Suspicious and normal IP addresses, display statistics for specific types of activity that may or may not be suspicious. For each summary card, you can: View the summary statistics displayed, Hover over parts of the card to see additional information in pop-ups, and to identify links, click any link in the card to see more detailed information, click the Help icon Image of Help icon in the upper-right corner to see online help about the type of information displayed in any particular card.

Exercise 4. Policies

Overview:

A policy is a rule or a guideline, such as, "*only people in Finance can view files in the Finance folder*", or "*any change to network access rules must be reviewed*". You can define policies based on particular cloud services, resources in the service, actions on the resource, and optionally items such as actors, recipients, whole groups of users, domains, and IP addresses. In Oracle CASB Cloud Service, you define policies based on:

- Particular cloud services, such as Box, GitHub, or ServiceNow.
- Particular resources in the service, such as a file or folder, or any resource in the service.
- Particular actions on the resource or resources, such as share, download, or collaborate.
- And, optionally, items such as actors, recipients, whole groups of users, domains, and IP addresses.

Oracle CASB Cloud Service generates an alert whenever an event that matches the policy occurs. The console displays a description of the policy violation and can provide recommendations for responding to it. You can also configure the alert to be sent to you over email or SMS.

Exercise:

In this exercise we will define a policy, for Salesforce, that will generate an incident when "Any" action is performed on the Salesforce CEO role (This includes adding or removing users to the role).

STEP 1: Create a Policy

Explanation:

The basics of a policy consist of these components:

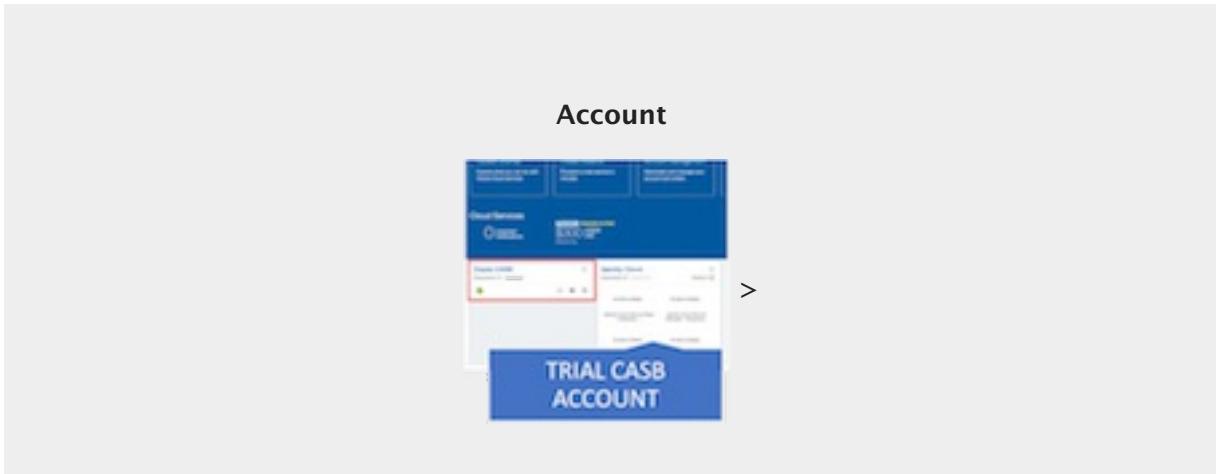
Actions that users or administrators perform (for example, creating or deleting)

Resources that these users act upon (for example, files, folders, or EC2 instances).

Optionally, you can identify additional filters such as people or groups who perform the action, the IP address of the actor, and the recipient of the action (for actions such as sharing and collaboration).

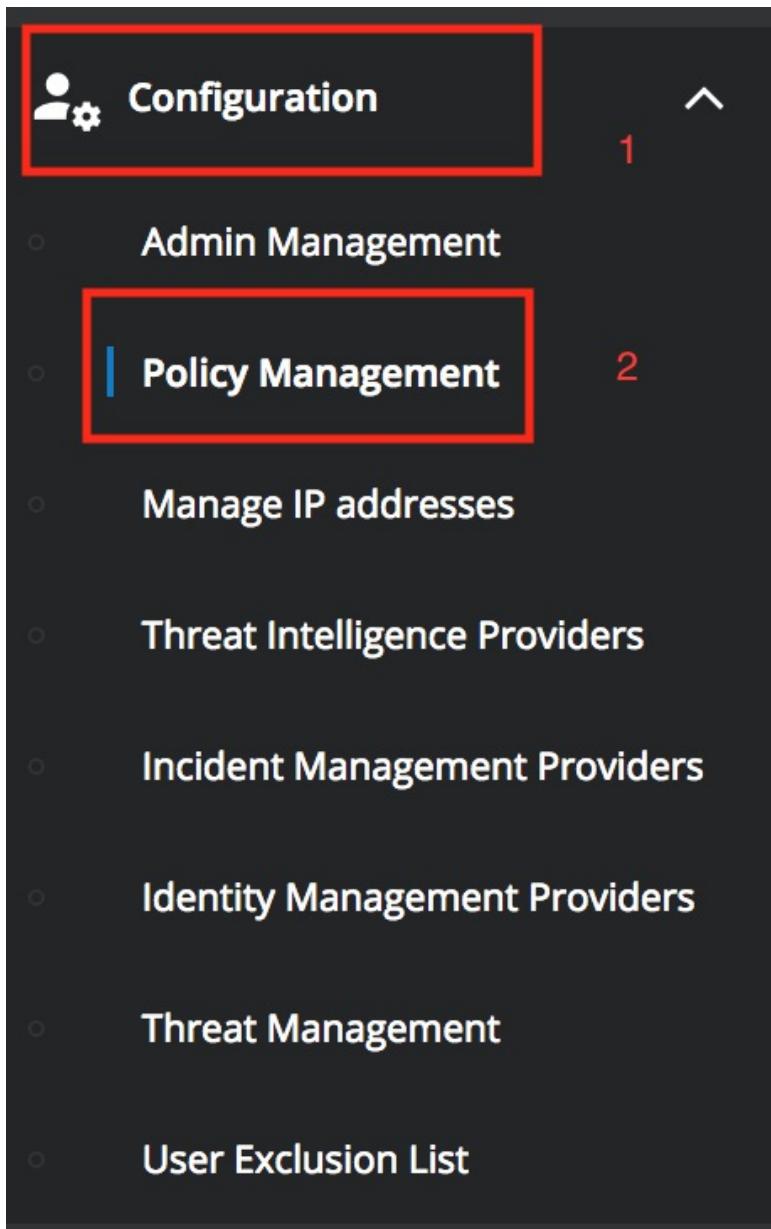
You can also add instructions for the person who reads the alert. For example, if you create an alert related to deleting access control lists, you can add instructions to inform the group that is responsible for managing the access control lists.

You can set up email notifications when the alert is triggered. This supplement the ability of users to request notifications for all high-risk events in Setting Your Password, Time Zone, and Email Alerting.

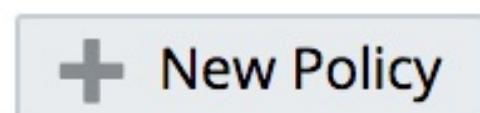


Log in to your Oracle Free Trial CASB tenant ([instructions here](#)) ([..../Cloud-Security-Day/CSD-SETUP.html](#)) and perform the following

STEP 1.1: In the Oracle CASB Cloud Service console, select Configuration then select "*Policy Management*"



and then click New Policy



STEP 1.2: Complete the "Name" panel in the "New Policy" wizard

Choose a unique name of the format "*YOURNAME_TEST_POLICY*" Create a description for the policy, set the priority to "*Medium*", and check the box to "*Include in user risk score*." This is an example of how a policy can effect user risk scores, thus influencing the CASB machine learning algorithms.

The screenshot shows the 'Name' panel of a 'New Policy' wizard. At the top, there's a 'Name' field containing 'Gordon_SF_Test'. Below it is a 'Description' field with the text 'This is a test policy created for the Security Cloud Day workshop'. Under 'Priority', a dropdown menu is set to 'Medium'. A checkbox labeled 'Include in user risk score' is checked. At the bottom right, there are three buttons: 'Cancel', 'Review and Submit' (disabled), and a blue 'Next' button.

Click on "Next".

STEP 1.3: Complete the "Resource" panel

Select "*Salesforce*" for the "*Application type*", choose your Salesforce instance as your "*Application Instance*", select "*Role*" as the "*Resource*". And choose a text expression of "*CEO*" for the "*Resource Name*". For the "*Action on this Resource*" leave it set to "*Any*" (although valid choices also include Assign Role, Create Role, Delete Role, Revoke Role, and Update Role).

New Policy

Resource *

Identify an app instance, resource, and action. Click the plus sign (+) to add resources and actions.

Application type: Salesforce

Application instance: Lorenz_SFDC

Resource: Role

Resource name: CEO

Action on this resource: Any

[+ Add resource and action](#)

[Duplicate resource and action](#)

Previous Next

Smile Gate Repository Policies HIGH GitHub SmileGate_Test_Ko tenant Nov 16, 2017 UTC

After adding this information, click on "Next".

STEP 1.4: (Optional) Complete the "*Username*" panel

You can leave these settings as default (blank) and click the "Next" button

STEP 1.5: Complete the "*Conditions*" panel

Optional : Specify conditions to limit when the alert is triggered.

Add two conditions: one condition for Device equal to "*Desktop*", and a second condition for Device equal to "*Mobile*" (use the "*Add condition*" link to add the second condition). After adding the two policy conditions, click "Next" to continue.

New Policy

Condition		
Parameter	Operator	Value
Device	Equal to	Desktop
Device	Equal to	Mobile

[+ Add condition](#) [+ Add Free-form Condition](#)

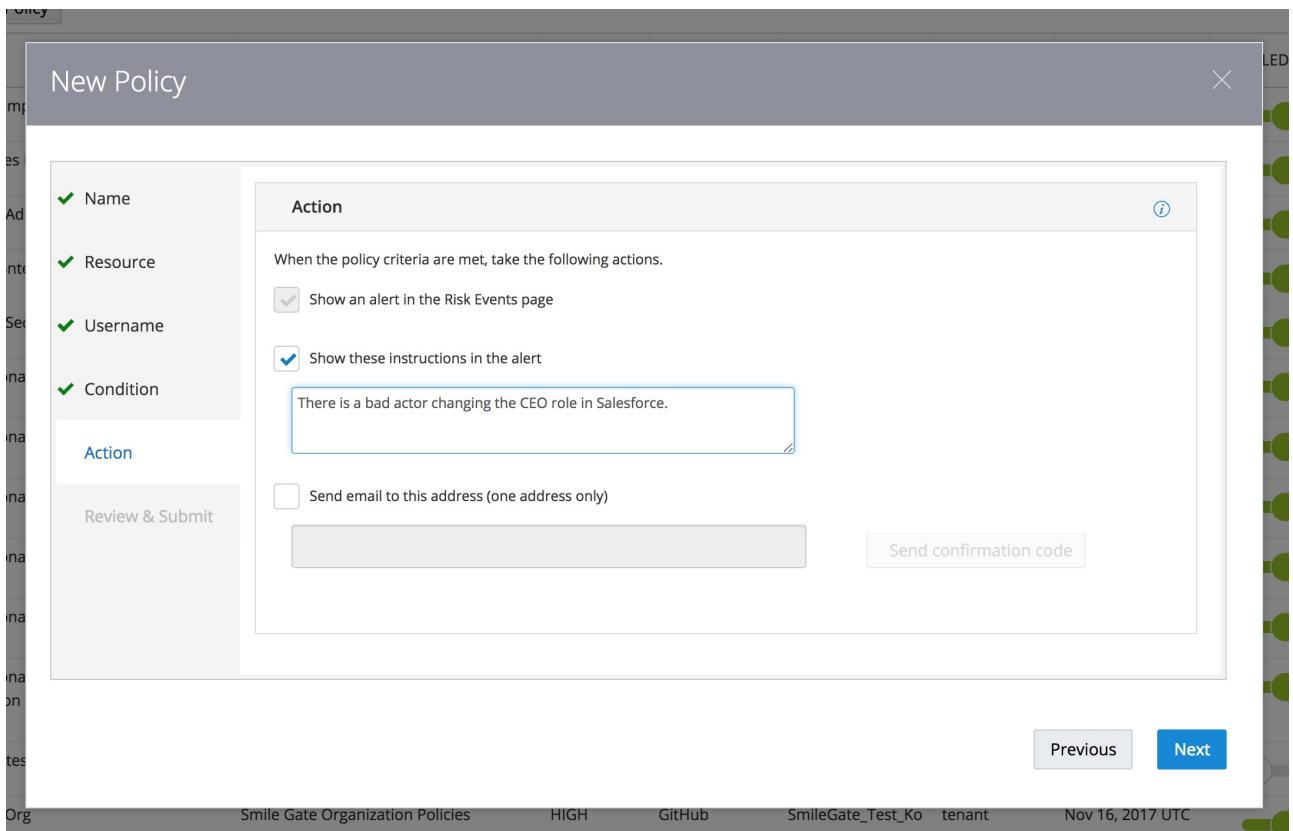
Previous [Next](#)

FYI, You can specify a condition using either of these types of conditions multiple times, and you can specify either type of condition in any order, freely mixing the two types.

When you specify multiple conditions, the conditions operate independently. Each condition causes the alert to either be triggered (Equal To operator), or not be triggered (Not Equal to operator), for that specific condition. The conditions are neither ANDed nor ORed.

STEP 1.6: Complete the "Actions" panel

Create custom instructions for the resultant alert by checking the box for customization and entering a message. Note that alerts can also be sent in email. Click "Next".



STEP 1.7: Click "**Next**" then "**Submit**" on the "**Review & Submit**" dialog

The Policy will appear in the list of policies available for activation for the tenant.

New Policy

- Name
- Resource
- Username
- Condition
- Action

[Review & Submit](#)

Review & Submit

[\(i\)](#)

1. NAME

Name	Lorenz_TEST_POLICY
Description	This is a test policy for our lab environment.
Priority	HIGH
Included in user risk score	true

2. RESOURCE

Application type	SFDC										
Application Instance Name	Lorenz_SFDC										
Resources	<table border="1"> <tr><td>Resource Type</td><td>Role</td></tr> <tr><td>Action</td><td>Any</td></tr> <tr><td>Matching type</td><td>Text-Equal</td></tr> <tr><td>Resource record</td><td>NA</td></tr> <tr><td>Resource name</td><td>CEO</td></tr> </table>	Resource Type	Role	Action	Any	Matching type	Text-Equal	Resource record	NA	Resource name	CEO
Resource Type	Role										
Action	Any										
Matching type	Text-Equal										
Resource record	NA										
Resource name	CEO										

3. USERNAME

User

4. CONDITION

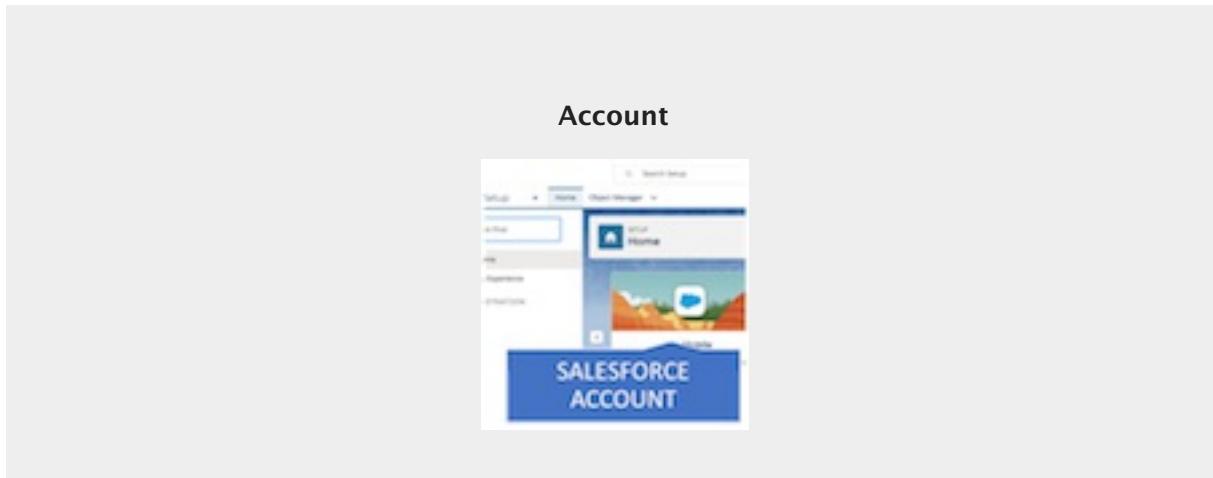
Condition 1	Device	Equal to	Mobile
Condition 2	Device	Equal to	API Call

5. ACTION

Create a Risk Event	True
Email	

[Previous](#) [Submit](#)

STEP 2: Trigger the Policy Alert



To test the policy log in to the Salesforce account and perform an action on the *CEO* role that our new policy monitors.

Note, if you are not following these instructions onsite in an Oracle instructor lead workshop:

For the workshop you have one assigned Salesforce user which is the same user you used when you on-boarded Salesforce in Exercise 1. If you decide to sign-up for your own free

Salesforce Developer account and you follow these instructions you should ensure you followed the Salesforce preparation steps described in your workshop handout. These steps prepares a dedicated Salesforce user, for CASB to use to monitor Salesforce. This dedicated Salesforce user should be used in Exercise 1 when you onboard your Salesforce account into CASB outside the context of the instructor lead workshop.

Take note, all other Salesforce instructions in this workshop should be performed with the Salesforce Admin user that was created when you signed-up for your free Salesforce Developer account . The reason this is important is because CASB will not report on any actions performed by the Salesforce user that is dedicated to CASB (used in Exercise 1 when you on-boarded Salesforce) and if you perform these steps with that dedicated user the policy described in this exercise will not be triggered.

STEP 2.1: In the Salesforce "Setup" section navigate to *Users -> Roles*

The screenshot shows the Salesforce Setup interface. On the left, a sidebar menu is open under the 'Users' section, with 'Roles' highlighted. The main content area is titled 'Understanding Roles' and describes setting up a Role Hierarchy. It shows a sample hierarchy with three levels:

- Executive Staff:** CEO, President, CFO, VP, Sales. Descriptions: * View & edit data, roll up forecasts, & generate reports for all users below. * Can't access data of other Executive Staff.
- Western Sales Director, Eastern Sales Director, International Sales Director:** Directors of W. Sales, E. Sales, and Int'l Sales respectively. Descriptions: * View & edit data, roll up forecasts, & generate reports for all users directly below. * Can't access data of users above or at same level.
- Western Sales Rep, Eastern Sales Rep, International Sales Rep:** CA Sales Rep, NY Sales Rep, MA Sales Rep; Asian Sales Rep, European Sales Rep. Descriptions: * View & edit data, roll up forecasts, & generate reports only for own data. * Can't access data of users above or at same level.

At the bottom right of the main content area, there is a red box around the 'Set Up Roles' button. Below it is a checkbox labeled 'Don't show this page again'.

Press the "Set Up Roles" button

STEP 2.2: Select to create the suggested Salesforce Role Hierarchy.

Select the "Assign" link next to the "CEO" role

SETUP
Roles
S3 Management Console

Creating the Role Hierarchy

You can build on the existing role hierarchy shown on this page. To insert a new role, click **Add Role**.

Your Organization's Role Hierarchy

[Collapse All](#) [Expand All](#)

- ORACLE
 - + Add Role
 - + CEO [Edit](#) | [Del](#) | [Assign](#) Assign
 - + Add Role

STEP 2.3: Add a user to the policy role

[Save](#) [Cancel](#)

<p>Available Users Search:</p> <p>All Users <input type="text"/> Find</p> <p>for: <input type="text"/></p> <p>Integration User Security User</p> <p>Select a User in this box and click "Add" to move it to the "Selected Users for CEO" box.</p>	<p>Selected Users for CEO</p> <p>GORDON TREVORROW</p> <p>Add Add Remove</p>
--	--

ORACLE

- + Add Role
- + CEO
 - + Add Role
 - + CFO
 - + Add Role
 - + COO
 - + Add Role
 - + SVP, Customer Service & Support
 - + Add Role
 - + SVP, Human Resources
 - + Add Role
 - + SVP, Sales & Marketing
 - + Add Role

[Save](#) [Cancel](#)

Select the "Add" button to move the user from the "Available Users" list box to the "Selected Users for CEO" list box.

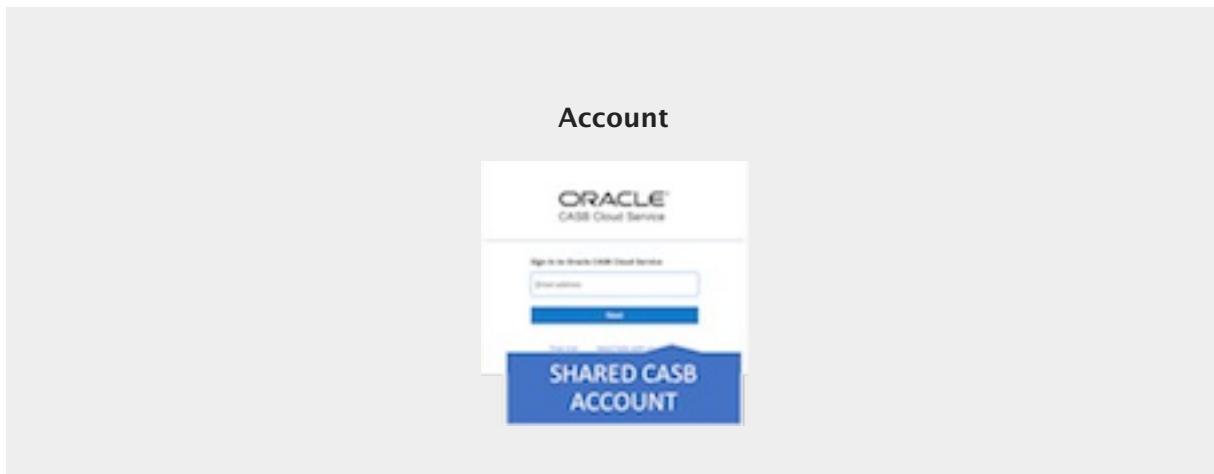
Make sure the user you add to the CEO role is **not the Service Account** user we used to sign-in to Salesforce when you on-boarded the application in Exercise 2 . The reason being, as mentioned above, that CASB Cloud Service will not monitor actions performed by that user so as to ensure that the actions CASB take in the persona of that user, to collect data from Salesforce, does not appear in the data CASB analyzes.

Click the "Save" button



As noted before there is a delay between data collection cycles for the CASB service and the action you perform in Salesforce might not cause the policy alert in CASB to fire immediately but will appear on the next data collection that CASB does to the Salesforce tenant. If you are following these instructions as part of a workshop you do not have to wait for the next CASB data collection run to take place before you can continue with this exercise. You can use the shared CASB tenant and complete the remainder of the exercise in the shared tenant. Individual login instructions were provided for each participant if you did not receive your instructions please inform one of the workshop proctors.

STEP 3: View the policy Alert



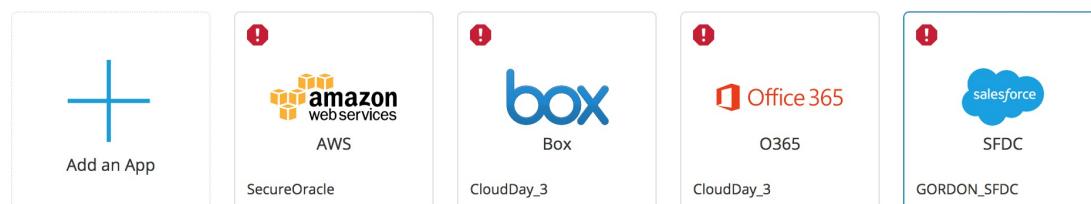
In the **shared CASB tenant**, using the "*Applications*" link in the left navigation menu, access the "*Applications*" view.

Click on your assigned Salesforce application to bring up the "*Health Summary*" panel. Click on the "Policy alerts" box as shown in the following screen capture.

Applications

Total Apps (5) | [New \(0\)](#) | [Unreachable \(0\)](#) | [High \(4\)](#) | [Medium \(0\)](#) | [Low \(1\)](#)

High



◀ ▶ 1

Health Summary [\(i\)](#)

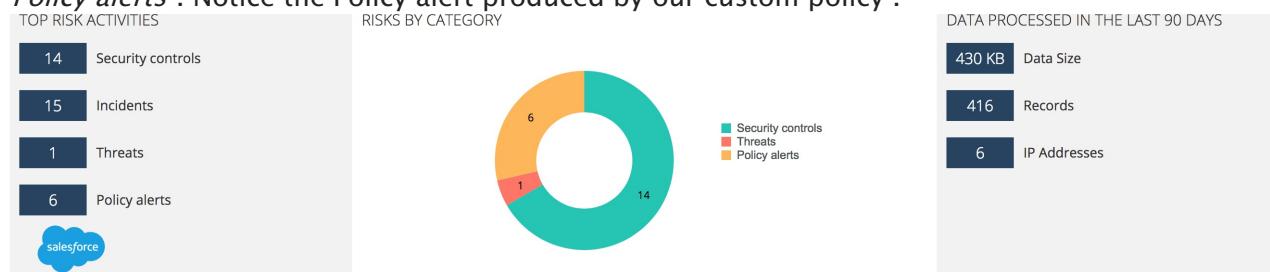
TOP RISK ACTIVITIES

14	Security controls
15	Incidents
1	Threats
6	Policy alerts

[Remove](#) [Modify ▾](#) [View details](#)

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You will be placed in the "App Details" drill down view with the risk events filtered to only include "Policy alerts". Notice the Policy alert produced by our custom policy .



Risk Events by App (6) [Policy alerts](#) [X](#)

[Filter:](#) [Open ▾](#)

<input type="checkbox"/>	RISK LEVEL	SUMMARY	CATEGORY	DETECTED ON	STATUS	INCIDENT	ACTION
<input type="checkbox"/>	!	Authentication action in LoginHistory "erdntrvrrw@gmail.com"	Policy alert	Feb 02, 2018 17:45:55 UTC	Open	Create	Action ▾
<input type="checkbox"/>	!	AssignRole action in Role "CEO"	Policy alert	Feb 02, 2018 17:45:55 UTC	Open	Create	Action ▾
<input type="checkbox"/>	!	Authentication action in LoginHistory "grdntrvrrw@gmail.com"	Policy alert	Feb 02, 2018 00:03:21 UTC	Open	Create	Action ▾
<input type="checkbox"/>	!	Authentication action in LoginHistory "grdntrvrrw@gmail.com"	Policy alert	Feb 02, 2018 00:03:20 UTC	Open	Create	Action ▾
<input type="checkbox"/>	!	Authentication action in LoginHistory	Policy alert	Feb 02, 2018 00:03:20	Open	Create	Action ▾

Exercise 5. Risk Events & User Risk

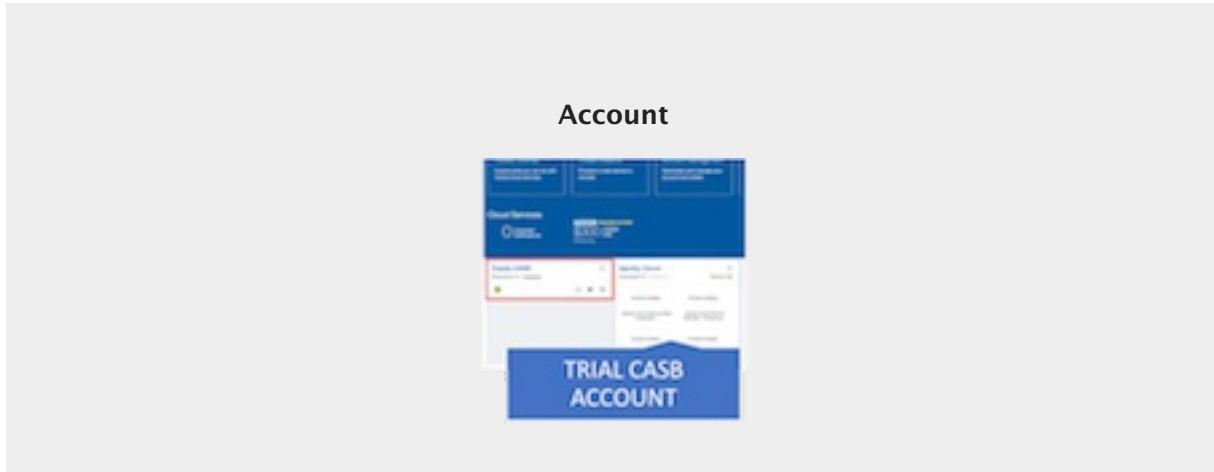
Overview:

Risk events encompass *anomalies* and *threats* that Oracle CASB Cloud Service detects.

Oracle CASB Cloud Service monitors user and agent behavior and automatically generates risk scores and alerts based on their activity patterns. To take advantage of this data, you must find and analyze users at risk, suspicious activity patterns, and activity from suspicious IP addresses.

Exercise:

STEP 1: Add a blacklisted IP address.



In the Oracle CASB navigation menu **of your Oracle Cloud trial account tenant**, click on "*Configuration*" and then click on "*Manage IP addresses*". At the top of the screen you will notice three tabs: "*Blacklist*", "*Whitelist*", and "*Exception*". In the "*Blacklist*" tab, click the "*Add IP Address*" menu item. You can choose to add an Individual Address or an Address Range. In our case, we'll add our own current IP address as an Individual Address.

The screenshot shows the Oracle CASB Cloud Service - SecureOracle interface. On the left, there's a dark sidebar with various navigation options like Dashboard, Applications, Risk Events, Reports, Users, Incidents, and Jobs. Under Configuration, the "Manage IP addresses" option is highlighted with a red box and a number "1" next to it. The main area is titled "Manage IP Addresses" with a subtitle "Add, view, modify and delete IPv4 addresses that should always trust (whitelist) or always consider suspicious (blacklist). **Important!** After you whitelist one or more IP addresses, Oracle CASB Cloud Service blacklists all other IP addresses. This can generate a very large number of threats and alerts." There are three tabs at the top: BLACKLIST (highlighted with a red box and number "2"), WHITELIST, and EXCEPTION. Below the tabs is a button "+ Add IP Address" with a red box and number "3" around it. A search icon is also present. The main table lists several IP address entries with columns for Start IP, End IP, Description, Type, Applies To, Created On, and Action (trash can icon).

START IP	END IP	DESCRIPTION	TYPE	APPLIES TO	CREATED ON	ACTION
104.13.88.252	104.13.88.252	Gordon Home	blacklist	All apps	Oct 23, 2017 22:51:19 UTC	
135.26.22.236	135.26.22.236	Wells Library	blacklist	All apps	Oct 20, 2017 15:28:54 UTC	
135.26.29.190	135.26.29.190	Studio 2	blacklist	All apps	Nov 06, 2017 20:19:27 UTC	
173.219.22.23	173.219.22.23	Lufkin SB2	blacklist	All apps	Jan 24, 2018 17:26:05 UTC	
207.70.140.52	207.70.140.52	Lib	blacklist	All apps	Jan 24, 2018 20:15:49 UTC	
208.180.2.99	208.180.2.99	Restricted Site 1	blacklist	All apps	Jan 29, 2018 17:41:15 UTC	
52.2.194.62	52.2.194.62	Ashburn	blacklist	All apps	Jan 29, 2018 19:00:09 UTC	
64.134.6.192	64.134.6.192	Secure Site 1	blacklist	All apps	Jan 29, 2018 16:35:38 UTC	
75.109.197.154	75.109.197.154	BK Lufkin	blacklist	All apps	Nov 06, 2017 16:08:52 UTC	
76.164.75.28	76.164.75.28	Studio 3	blacklist	All apps	Mar 01, 2018 19:16:15 UTC	

To discover your current IP address you can access this [link \(<https://www.bing.com/search?q=what+is+my+ip>\)](https://www.bing.com/search?q=what+is+my+ip)

Add IP Address To Blacklist

Generate a threat if this IP address accesses a monitored application.

Address format

Individual address

Description

Bob's Bad Computer

Use for these applications and instances

SFDC:Lorenz_SFDC

Your Salesforce Tenant here

Cancel

Note, that the Salesforce instance you will use on this dialog will be the one you on-boarded in Exercise 1.

STEP 2: Log in to Salesforce

IMPORTANT : If you are already logged in to Salesforce ensure you log out of Salesforce first and then log in to Salesforce again.

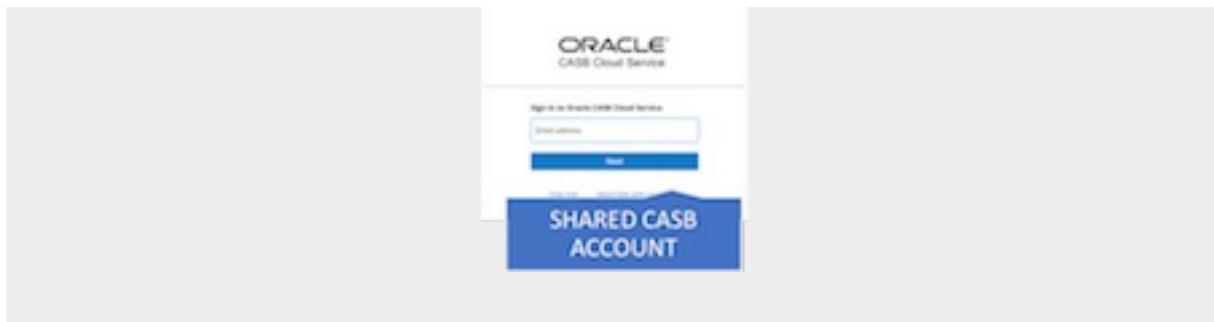
When you log in to Salesforce from your blacklisted IP you ensure that a future risk event will be generated for Salesforce that will flag your access to Salesforce from the black listed IP address.

STEP 3: Analyze the resulting risk event starting from the dashboard



The risk event will appear after the next scheduled data collection has occurred for your Salesforce tenant. If you are following these instructions as part of a workshop you do not have to wait for the next CASB data collection run to take place before you can continue with this exercise.

Account

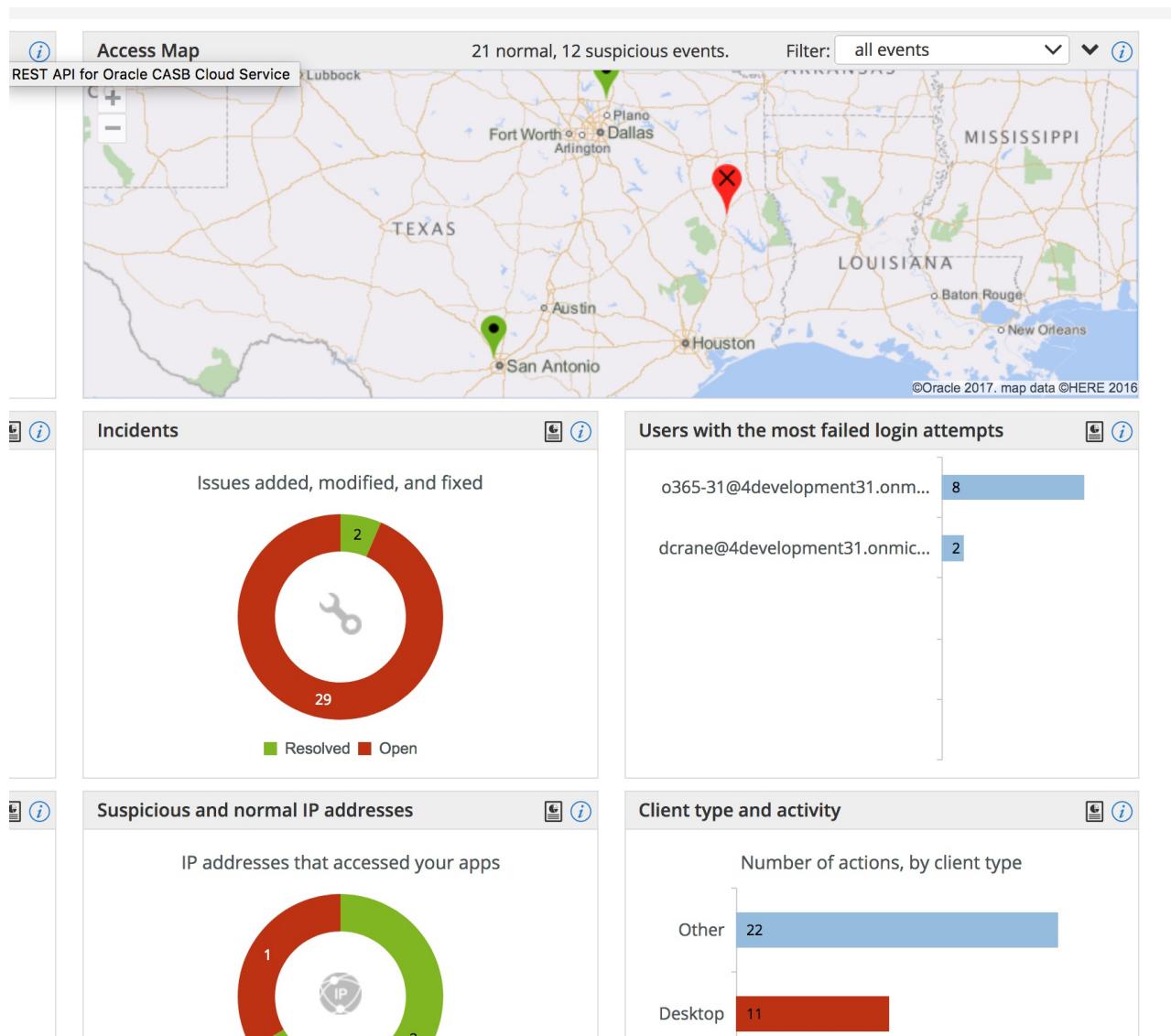


You can **log in to the shared CASB tenant** and complete the remainder of the exercise in the shared tenant.

Individual login instructions were provided for each participant. If you did not receive your instructions please inform one of the workshop proctors.

STEP 3.1: Using the CASB left navigation menu select "*Dashboard*".

Risk events that can be mapped to a geographic location (such as those that result from access from blacklisted IP addresses) are flagged on the Dashboard Access Map with red markers.



STEP 3.2: Practice drilling down into the risks from a specific location by clicking on the red

markers to get to the list of events from that given location marker.

Access Map events									
Events currently being displayed on the Dashboard Access Map									
DATE AND TIME	APP AND INSTANCE	CLIENT TYPE	SOURCE IP ADDRESS	CLASSIFICATION	USER	LOCATION	ACTIVITY	LOG DATA	
Jan 29, 2018 20:52:30 UTC	O365:CloudDay_3	Other	208.180.2.99	Suspicious	trevorrow@4development31.onmicrosoft.com	Nacogdoches, Texas, United States (US)	Sent,Email sent by Trevorrow@4development31.onmicrosoft.com to g_trevorrow@yahoo.com	View log data	
Jan 29, 2018 20:15:33 UTC	O365:CloudDay_3	Desktop	208.180.2.99	Suspicious	o365-31@4development31.onmicrosoft.com	Nacogdoches, Texas, United States (US)	PageViewed,https://4development31-my.sharepoint.com/default.aspx	View log data	
Jan 29, 2018 20:15:31 UTC	O365:CloudDay_3	Desktop	208.180.2.99	Suspicious	o365-31@4development31.onmicrosoft.com	Nacogdoches, Texas, United States (US)	SharingInheritanceBroken,https://4development31-my.sharepoint.com/personal/o365-31_4development31_onmicrosoft_com//personal/o365-31_4development31_onmicrosoft_com/Lists/PublishedFeed	View log data	
Jan 29, 2018 20:15:31 UTC	O365:CloudDay_3	Desktop	208.180.2.99	Suspicious	o365-31@4development31.onmicrosoft.com	Nacogdoches, Texas, United States (US)	SharingSet,https://4development31-my.sharepoint.com/personal/o365-	View log data	

STEP 4: Analyze User Risk

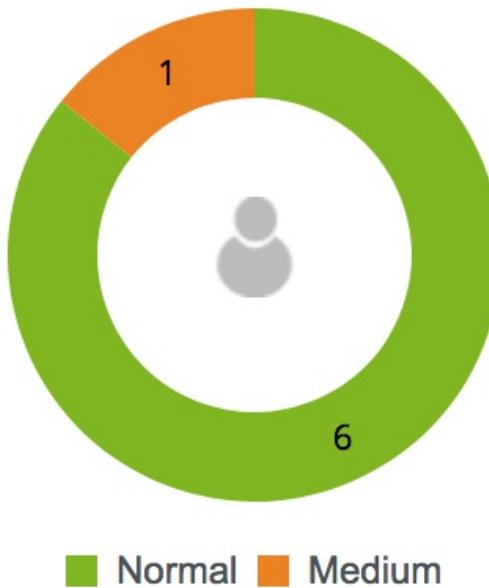
Users pose a variety of different security risks that Oracle CASB Cloud Service can detect. The purpose of this step is to understand how to use the User risk levels card to identify high risk users.

STEP 4.1: In the Dashboard "*User Risk Level*" Card click any area of the chart to view details for the users at the corresponding risk level.

User risk levels



Determined by anomalous or suspicious activity



Explanation:

In the Dashboard, the User risk levels card provides a quick overview of whether any users of your cloud services have an elevated risk score. The chart is segmented into 3 color coded areas. Green are normal users, Yellow indicate the number of medium risk users and red represent users that are considered high risk.

Oracle CASB Cloud Service typically collects 10 days of data before creating a risk profile for a user. It then generates a risk score for the user. This score is based on the degree to which the user's actions over the past day (24 hours) has deviated from their typical usage pattern. Oracle CASB Cloud Service does not analyze every action when calculating this risk score. Instead, it looks at actions that are often implicated in malicious insider or external hacker activity. Typically, the longer Oracle CASB Cloud Service monitors a user's behavior, the more accurate the risk score will be. Examples of behaviors that can generate a high-risk score:

- Downloading an unusual number of files, or deleting an unusual number of files, from IP addresses that the user had not used in the past.
- Traversing an unusually long geographical distance in a relatively short amount of time, particularly when benchmarked against the user's typical behavior.
- Accessing a cloud service from new IP addresses and locations outside of typical work hours for that user.

Unusual application-specific activities for the user that might involve sensitive data. For example, In Salesforce, Oracle CASB Cloud Service monitors actions such as changes to security controls (for example, session timeout settings), changes to federated identity

providers (known as Security Assertion Markup Language, or SAML providers), mass transfers and deletes, and changes to authentication certificates.

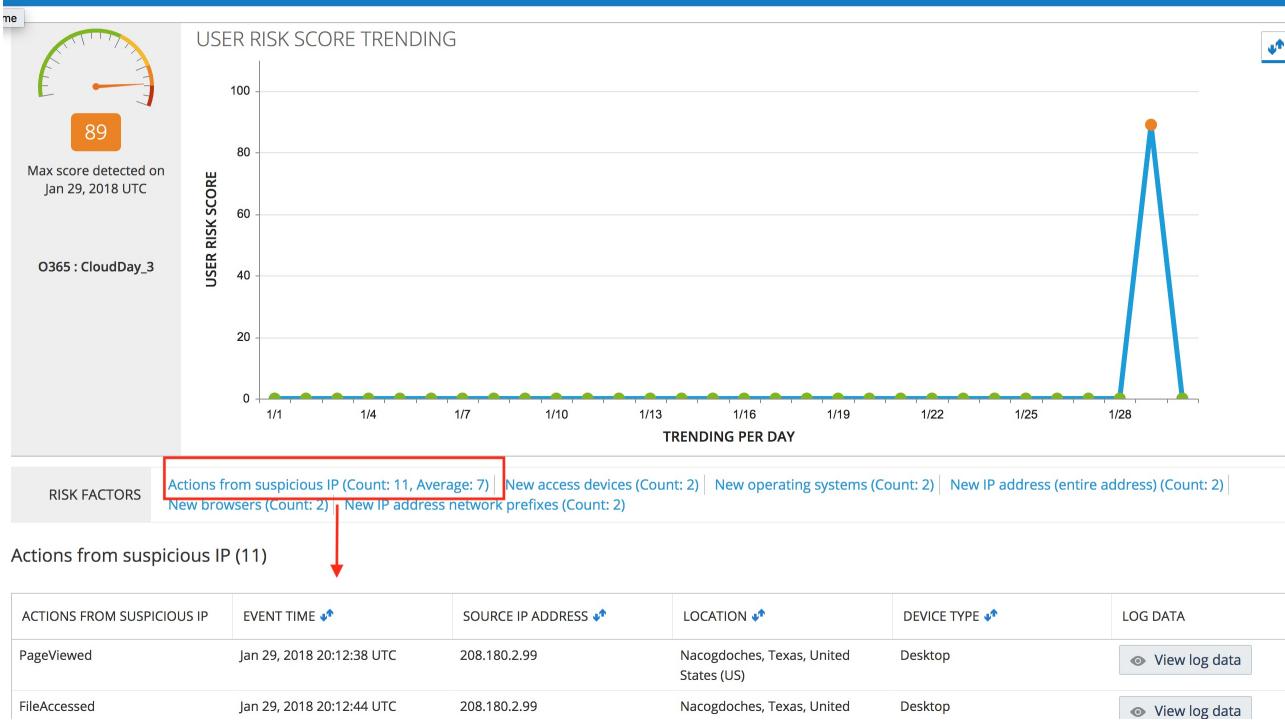
RISK	USER NAME	MAXIMUM RISK SCORE	APP AND INSTANCE	REASONS	DETECTED DATE
✓	grdntrvrrw+u5@gmail.com	50	SFDC:SFDC_User5	• Actions from suspicious IP	Feb 27, 2018 UTC
✓	grdntrvrrw+u1@gmail.com	40	SFDC:SFDC_User1	• Actions from suspicious IP	Mar 01, 2018 UTC
✓	grdntrvrrw+u6@gmail.com	40	SFDC:SFDC_User6	• Actions from suspicious IP	Mar 01, 2018 UTC
✓	grdntrvrrw+u3@gmail.com	40	SFDC:SFDC_User3	• Actions from suspicious IP	Mar 01, 2018 UTC
✓	grdntrvrrw+u2@gmail.com	40	SFDC:SFDC_User2	• Actions from suspicious IP	Mar 01, 2018 UTC
✓	grdntrvrrw@gmail.com	28	SFDC:GORDON_SFDC	• Actions from suspicious IP • New browsers	Mar 01, 2018 UTC
✓	grdntrvrrw+u9@gmail.com	20	SFDC:SFDC_User9	• Actions from suspicious IP	Mar 01, 2018 UTC
✓	grdntrvrrw+u7@gmail.com	20	SFDC:SFDC_User7	• Actions from suspicious IP	Mar 01, 2018 UTC
✓	o365-31@development31.onmicrosoft.com	15	O365:CloudDay_3	• New IP address (entire address) • New IP address network prefixes	Feb 28, 2018 UTC
✓	grdntrvrrw+u15@gmail.com	00	SFDC:SFDC_User15	• Total IP network prefix for all events	Mar 06, 2018 UTC

These are the risk ratings in the Users page:

- High. A risk score of 90 and above is categorized as high risk.
- Medium. 80–89.
- Low (some) risk. 60–79.
- Normal activity. Below 60.

STEP 4.3: To view all details related to a user's risk score, click the user's name.

On the selected *Users* drill down page, click a link in the Risk Factors section to view the details related to specific risk factors for a user (for example *Actions from suspicious IP*)



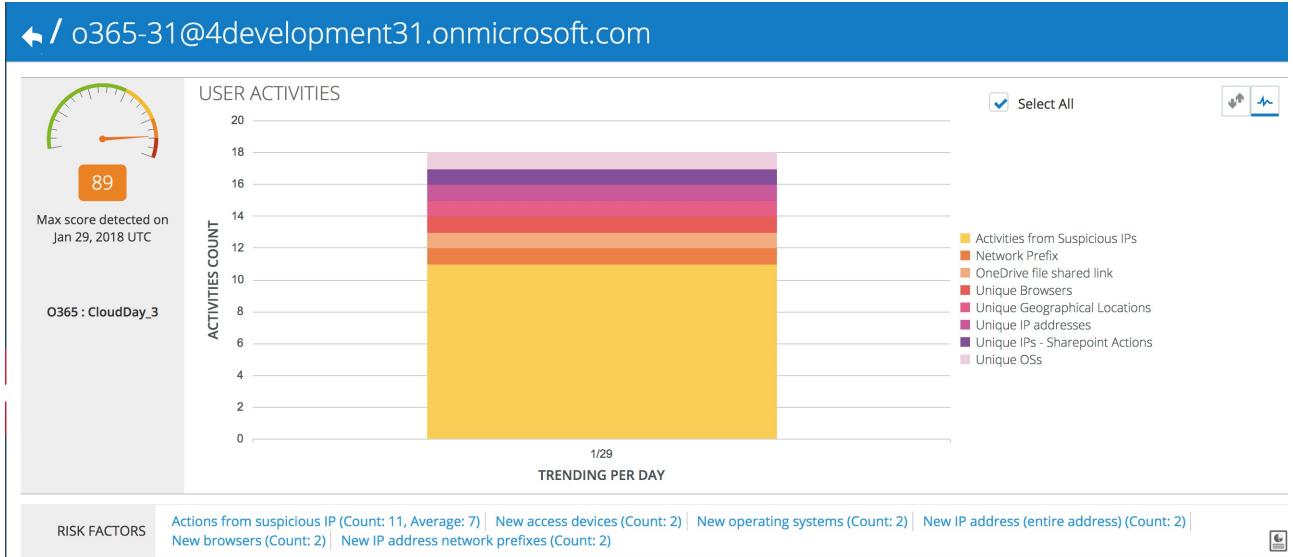
STEP 4.4: Click on the "User Risk Score Trending" Button



This graph displays the user's risk score as it has changed over the past 30 days:

You can visualize the weights of the individual risk factors that contributed to the user's particular risk score over a 30 day period.

Click on the individual risk factors on the bar chart to drill into , by date, the individual risk events associated with the selected risk factor on the user's chart (presented by date).



Exercise 6. Incident Management

Oracle CASB Cloud Service generates a ticket in the Incidents section of the console whenever it detects a behavioral anomaly. Administrators also can create incident tickets manually.

Incidents are automatically or manually assigned to CASB Cloud Service users.

STEP 1: Finding a targeting an Incident in the Incidents Page for remediation.

Select one of the Salesforce Security Control related incidents and click the "remediate" icon.

The screenshot shows the 'Incidents' page with a total of 334 incidents. The sidebar on the left has a red box around the 'Incidents' icon. The main table lists five incidents:

PRIORITY	ID	APP ...	INSTANCE	CATEGORY...	STATUS	ASSIGNED TO...	DETECTED ON	DETAILS	REMEDIATION TYPE	ACTION
!	386904000040	O365	CloudDay_3	Anomalous activity	Open	g.trevorrown+u4@outlook.com	Mar 08, 2018 UTC	Suspicious IP address. Reported by CASB administrator blacklist: 52.2.194.62.	Manual	
!	386904000039	O365	CloudDay_3	Anomalous activity	Open	g.trevorrown+u6@outlook.com	Mar 07, 2018 UTC	Suspicious IP address. Reported by CASB administrator blacklist: 52.2.194.62.	Manual	
!	386904000038	O365	CloudDay_3	Anomalous activity	Open	gordon.trevorrown+so2@oracle.com	Mar 06, 2018 UTC	Suspicious IP address. Reported by CASB administrator blacklist: 52.2.194.62.	Manual	
!	225863000015	SFDC	SFDC_User18	Security control	Open	g.trevorrown+u5@outlook.com	Mar 06, 2018 UTC	Strengthen the security control value : Lockout effective period	Auto	
!	225863000014	SFDC	SFDC_User18	Security control	Open	g.trevorrown+u4@outlook.com	Mar 06, 2018 UTC	Strengthen the security control value : Enable clickjack protection for customer Visualforce pages with standard	Auto	

STEP 2: Review and remediate the incident

Oracle CASB Cloud Service will open a dialog box with the details of the incident. For security control, related incidents you'll notice an actual value and a recommended value that is prescribed by the current active security control baseline.

For services, such as Salesforce, that provide APIs to affect the recommended configuration changes in the target service you'll have an option to perform an "*Auto Remediation*" you can also select to perform a "*Manual Remediation*". We'll do a manual remediation in this exercise since we've already demonstrated an "*Auto Remediation*" in a previous exercise.

Incident #215915000015 SFDC: GORDON_SFDC X

IN	Remediation	<input checked="" type="radio"/> Auto remediation <input type="radio"/> Manual remediation
GC	Recommended action	Set the lockout interval to 60 minutes
C	Security control name	Lockout effective period
Se	Current value	15 minutes
Cl	Recommended value	60 minutes
Clo	Description	Strengthen the security control value : Lockout effective period
Cl	Detected on	Jan 23, 2018 19:39:15 UTC
GC	Occurred	Jan 23, 2018 19:39:15 UTC
C	Reason	<input type="text"/>
GC	<input type="checkbox"/> Approval	I understand and explicitly approve taking the action above with the application SFDC, instance GORDON_SFDC.
C	Cancel	Resolve incident

Supply a description in the "*Reason*" text area of what actions you performed to resolve the incident and click the "*Resolve Incident*" button.

STEP 3: Expand Filters if filters are not displayed

You can filter by incident ID, application instance name, dates, and additional criteria.

Explanation:

The category filters are:

- Anomalous activity is related to a threat that has been categorized as atypical user behavior. This is the category you also must assign to the ticket to export it to ServiceNow (see the procedure following this one).
- Security control displays only tickets flagged as pertaining to a security configuration issue. An Oracle CASB Cloud Service administrator manually creates tickets of this type.
- Policy alert displays only tickets flagged as pertaining to a policy alert. An Oracle CASB Cloud Service administrator manually creates tickets of this type.
- Monitoring stopped displays only tickets flagged as pertaining to Oracle CASB Cloud Service being unable to connect to a monitored application instance. An Oracle CASB Cloud Service administrator manually creates tickets of this type.
- Other incident types are specialized versions of anomalous activities (threats).

Exercise 7. CASB Discovery

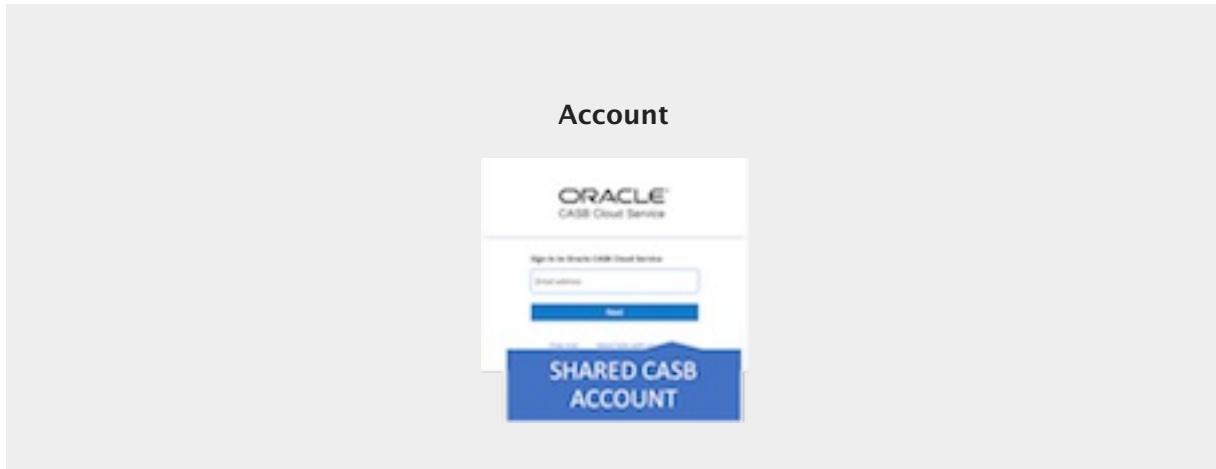
Overview:

We will use Oracle CASB Cloud Service – Discovery to find applications that are not explicitly authorized, but are being used in your organization, that may present a security threat.

Oracle CASB Cloud Service Discovery allows you to uncover any applications or plug-ins that do not have explicit organizational approval.

Note: CASB Discovery is not enabled in Oracle Cloud Trial Accounts therefor the App Discovery tab shown in the screenshot below will not appear in your trial account . The instructor will use the shared tenant to perform the shadow IT Discovery exercise in the workshop.

Exercise:



This Exercise will be performed by the workshop leader:

STEP 1: On the CASB Dashboard page select the "App Discovery" tab

Dashboard: App Discovery [?](#)

Home

Summary App Discovery Key Security Indicators

Discovered Apps (0) Data captured in NOV Oct 24, 2017 14:39:15 UTC Import from Logs

Log file: 28Feb2017_Cisco_SmartView_disco_dummy_data.log, Log type: CheckPoint SmartView Tracker

File upload complete File analysis complete Refresh of apps list complete

APP/DOMAIN USER COUNT TRAFFIC POSTURE SOURCE LAST ACCESSED ACTION

No records available

20 items per page No items to display

Risk factors enriched by: SecurityScorecard

APP/DOMAIN	USER COUNT	TRAFFIC	POSTURE	SOURCE	LAST ACCESSED	ACTION
No records available						

STEP 2: Press the "*Import from Logs*" button

a Dialog will appear that will prompt the user to upload a log file.

Press the "*Choose File*" button and upload the sample log file assigned to you.

The sample log file you should use in this exercise is available for download [here](#) ([docs/CASBDiscovery-import.log](#)). Right click on the link and save the file to your local machine and make a note where you save it since you'll be required to upload the file to CASB Cloud Service in the course of this exercise.

STEP 3: Select the log file format & Press the "*Import*" Button

Upload log file for analysis

Choose File No file chosen

Please select the log file format:

Checkpoint SmartView Tracker
 Fortigate
 Checkpoint Syslog
 Blue Coat (Beta)
 Palo Alto Networks
 Sophos UTM
 Cisco ASA
 Dell SonicWall
 Cisco Firepower
 Juniper SRX
 Trend Micro InterScan Web Security Virtual Appliance
 Zscaler
 McAfee Web Protection
 Websense Web Security Gateway

Cancel Import

CASB CS will process the log file and update the view with the progress it has made in analyzing the log file.

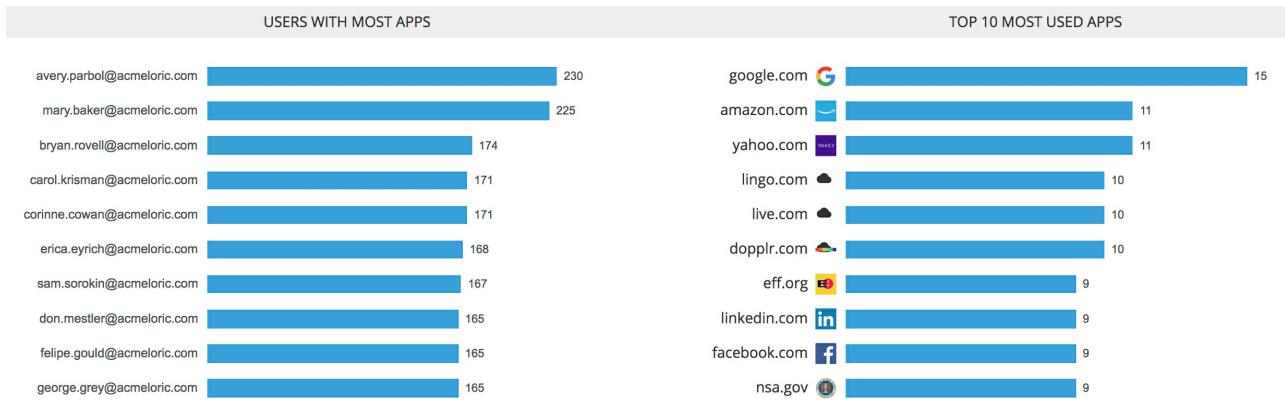
Discovered Apps (0) Data captured in MAR Dec 20, 2017 20:48:26 UTC Import from Logs

Log file: CASBDiscovery-import.log, Log type: CheckPoint SmartView Tracker

Once the file has been processed CASB will display the results of its analysis.

STEP 4: Explorer the results of the log file import

At the top of the page CASB will display the users who used the most apps as well as the most popular apps that have been discovered



You can select one of the users to filter the table view of discovered apps to only include the apps used by the selected user. You can further select individual apps in the table view to view further detail about the app.

CASB Cloud Service						
What Does the Bible Say About Jacob?		2	6 MB	5 Perimeter	Feb 28, 2017 23:50:55 UTC	
	The official Square Enix Facebook page. Please enjoy discussing all Square Enix games, products, music and more!			- Checks vendor's DNS insecure configurations and vulnerabilities.		
Category:	Movies & Entertainment			① IP reputation	Checks suspicious activity, such as malware or spam, in the vendor's network.	
Vendor website ranking/popularity:	Alexa global rank: 2595			① Leaked information	Sensitive application information exposed in public code repositories.	
				① Patching cadence	Checks vendor's software inventory for out of date or vulnerable applications.	
				① Hacker chatter	Checks hacker sites for chatter about the vendor.	
				① Endpoint security	Measures security level of vendor's employee workstations and mobile devices.	
				① Network security	Checks vendor's insecure network settings.	
	blubster.com	3	10 MB	0 Perimeter	Feb 28, 2017 23:50:55 UTC	
	blubster.com	4	10 MB	0 Perimeter	Feb 28, 2017 23:50:55 UTC	

STEP 6: Explore discovered App/Domain risk factors

For some apps, that have a *SecureScorecard* report, you can view the security concerns associated with the app.

Explanation:

- SecureScorecard evaluates many internet destinations in the context of 10 risk factors:
- Network Security: Checks vendor's insecure network settings.
- DNS Health: Checks vendor's DNS insecure configurations and vulnerabilities.
- Patching Cadence: Checks vendor's software inventory for out of date or vulnerable applications.
- Endpoint Security: Measures security level of vendor's employee workstations and mobile devices.
- IP Reputation: Checks suspicious activity, such as malware or spam, in the vendor's network.

- Web Application Security: A proprietary algorithm that checks for vendor's implementation of common security best practices.
- Cubit Score: A proprietary algorithm that checks for vendor's implementation of common security best practices.
- Hacker Chatter: Checks hacker sites for chatter about the vendor.
- Leaked Credentials: Sensitive application information exposed in public code repositories.
- Social Engineering: Measures vendor's employee awareness to a social engineering or phishing attack.

Select a site, with a SecureScorecard report, and then select a highlighted risk factor to get a more detailed explanation of the risk factor in context of the selected site.

For example, for the bing.com site, in the supplied sample log file, we can see that its Scorecard has an active "*Leaked information*" risk factor link . Click on the link to get a more detailed explanation of the information that contributed to the risk and its severity.

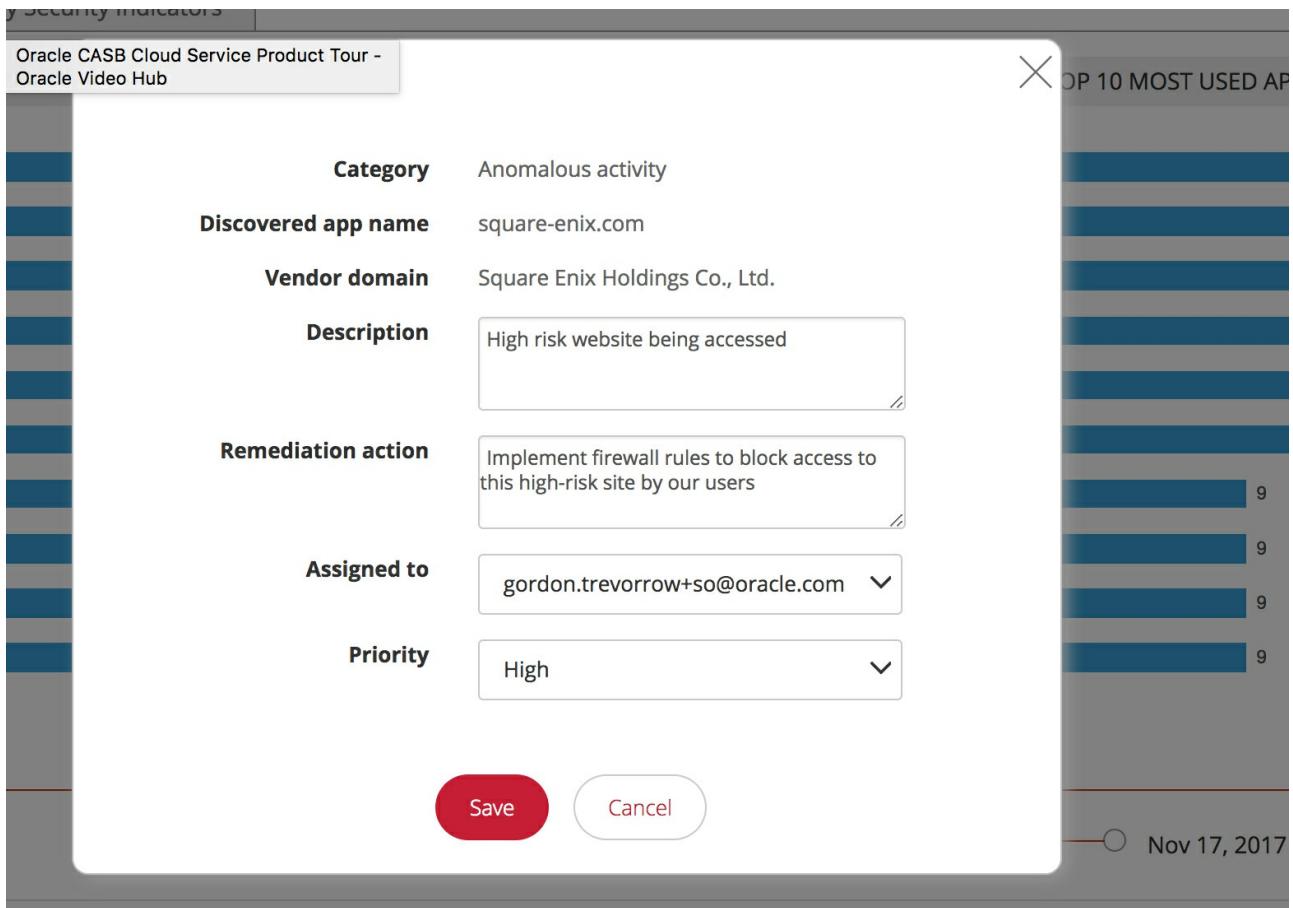
Severity	Issue	Issue details
!	Credentials at Risk	<p>Description: A credential for an account associated with an employee email was discovered. View more</p> <p>Recommendation: Ensure employees are not using same credentials for any corporate or 3rd-party logins. Ensure that all passwords have been changed since the indication of breach. In the case of corporate passwords, check logs for repeated failed login attempts or repeated password reset attempts from suspicious IP addresses.</p>

STEP 7: Create a new Incident for one of the discovered apps

Press the "*Create Incident*" action for any one of the apps available in you trial tenant.



Fill out the "*New Incident*" Dialog and click the "Save" button.



You'll notice there are 3 new actions available for the app you created an incident for in the CASB App Discovery "*Discovered App*" table view. Mouse over the icons to see a description. Go ahead and explore the new actions that are available.