

Work Instructions

Infosys Sandbox Manager

Applies to:	Salesforce practitioners
Objective:	This document provides work instructions for installing Infosys Sandbox Manager application
Policy or Handbook Reference	N/A
Prerequisites	N/A

Introduction

This document provides step-by-step instructions for installing “Infosys Sandbox Manager” application.

Goals

Track Sandbox’s refresh schedule and usage trends.

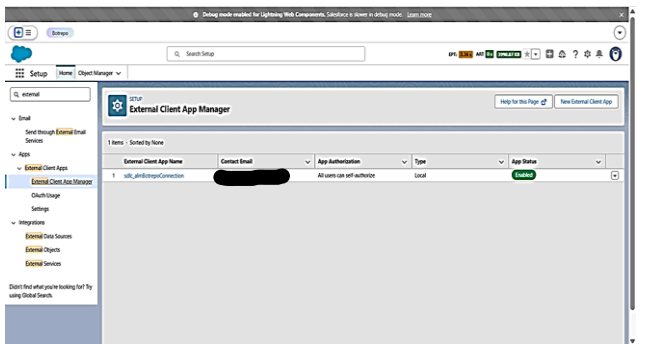
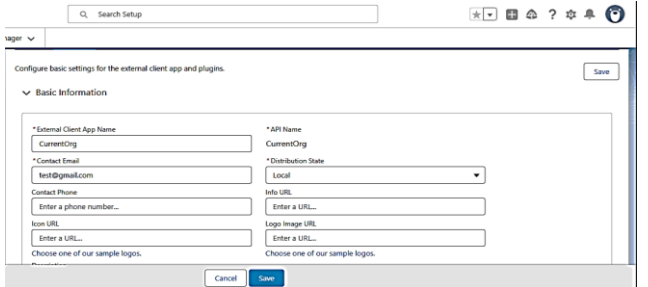
Scope

Salesforce CRM Platform Sandboxes

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Step	Instruction	Illustration
1	Install the package from AppExchange listing (Uninstall the old version of this app before installation)	Figure: 1 
2	Ensure that the Development mode is turned off for the user profile	Go to User Profile and remove the checkbox
3	Configure External Client App in the remote instance and connect it to the secured endpoints through named external credentials in the current instance. Step 1: Go to External Client App Manager (Remote Org). Create new External Client app → Fill Basic Information and Click Save (Remote Org) <u>Note:</u> Select Distribution State as 'Local'. See <i>figure: 2a.2</i> Step 2: Go to Settings Tab of created external client app and Click on edit (Remote Org) Go to OAuth Settings and click on checkbox 'Enable OAuth'. Provide any Callback URL (This will be replaced later) Select Scope As 'Full Access (full)' and 'Perform Request at any time (refresh_token,offline_access)' Select 1st checkbox (Enable Client Credentials Flow) under OAuth Settings → Flow Enablement section and click Save.	Figure: 2a.1  Figure 2a.2 

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Step 3: Again, go to OAuth Settings → App Settings → Click on Consumer Key and Secret to get the Keys. See figure: 2b

Step 4: In Current Instance (where app is installed), For callback URL, go to setup → Search auth. provider in Quick Find → new → select 'salesforce', fill the details(Name, URL suffix(auto generated), the consumer key and the consumer secret will be obtained from the External Client App(remote org), Authorize Endpoint URL, Token Endpoint URL, Default Scope enter 'refresh_token full')→ Save. See figure: 2c
Note: Uncheck Use Proof Key for Code Exchange (PKCE) Extension, Include Consumer Secret in SOAP API Responses and keep others as it is.

After saving the above changes, copy the generated callback URL and add it to the external client app's (**remote org**) callback URL, under Setting Tab, OAuth Setting section. See figure: 2d and figure: 2e

Step 5: Configure a named credential with a secured endpoint external credential (**Current instance**). Select the Authentication Protocol as OAuth 2.0, Authentication Flow Type as Browser flow, Identity Provider as Auth. Provider and select the Auth. Provider you created. In Scope enter 'refresh_token full'. See figure: 2f

Once the external credential is created, add a principal to that external credential as done in the below figure: 2g.

Note: In Default Scope enter 'refresh_token full' and select Identity Type as Named Principal.

Step 6: After adding the principal to the named credential, add the credential to user Using profile/ permission set.

Create a separate permission set for assigning Named principal access if necessary and assign to the respective users. Click on

Figure: 2b

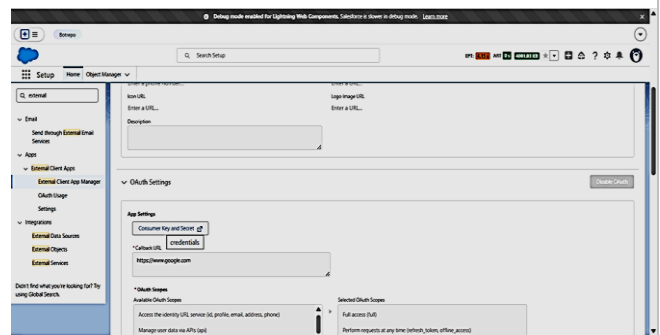


Figure: 2c

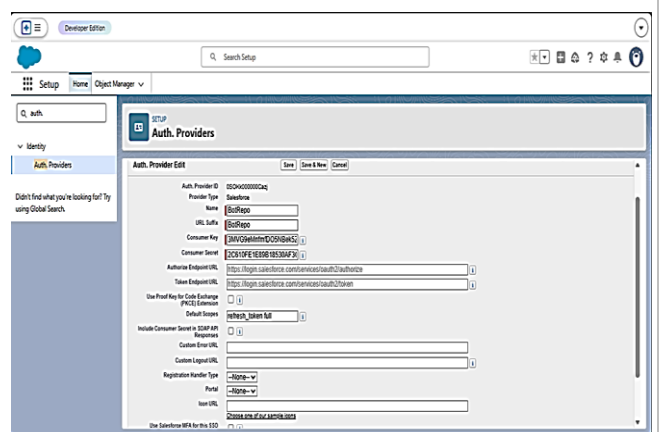


Figure: 2d

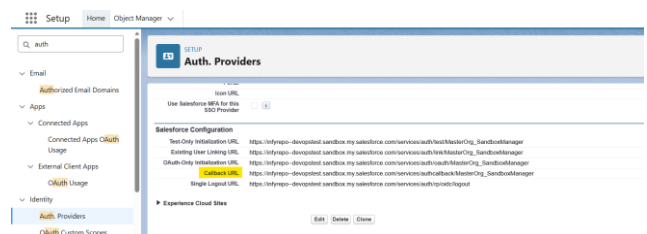
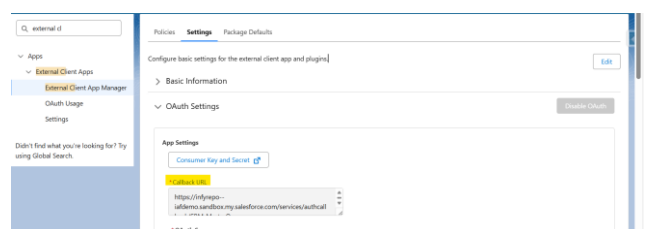


Figure: 2e



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Setup menu → in quick find box search Permission Set → Create a new permission set → see for 'External Credential Principal Access' → Edit → Select the created External Cred → Save → Then click on Manage Assignments → Add Assignments → Select the Users → Next → Assign → Done
See figure: 2h(Access through profile)

After sharing the external credential, authenticate the principal(created in step 5) with the credentials of remote org. *See figure: 2i and figure: 2j*

Step 7: After successfully authenticating the named principal, create a named credential with that external credential.

Setup → in quick find box search Named Credentials → Click New → Enter Label, Name, URL(remote org domain URL, the org user wants to connect the application with), Enabled for Callouts should be switched on, select the created External Credential, in Callout Options only check the check box of Generate Authorization Header leave others unchecked. *See figure: 2k*

Note: In 'Allowed Namespaces for Callouts' field mention 'infy_sm'.

Figure: 2f

Figure: 2g

Figure: 2h

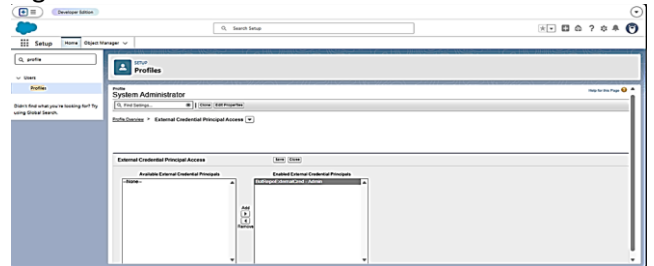


Figure: 2i

Se...	Parameter Name	Identity Type	Scope	Authentication St...	Action
1	MasterOrg_P	Named Principal	full refresh, token offline_access	Configured	Authenticate

Figure: 2j

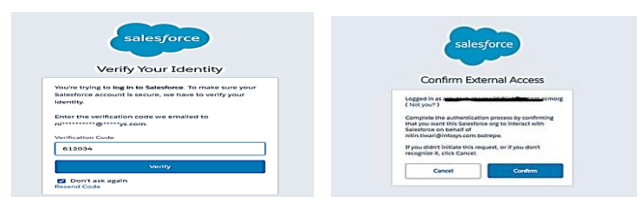
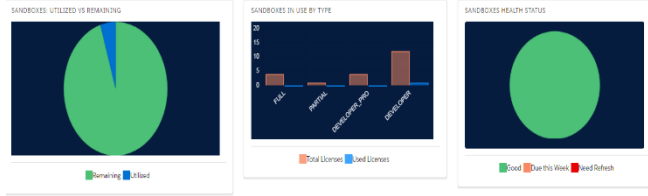


Figure: 2k

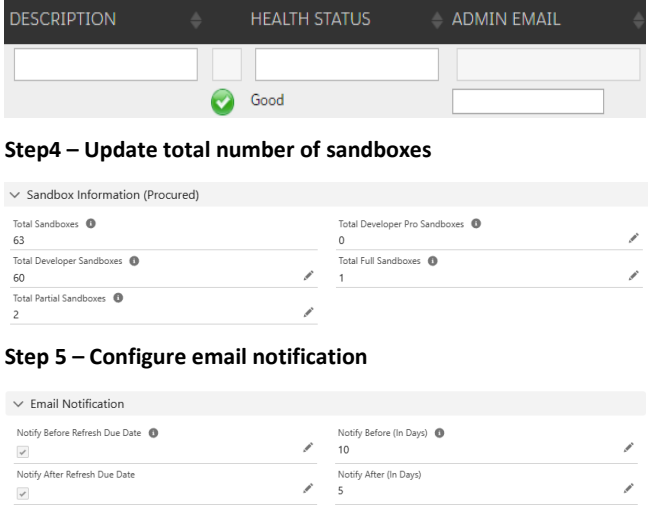
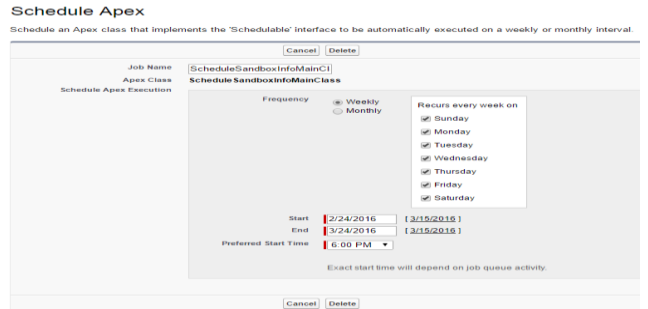
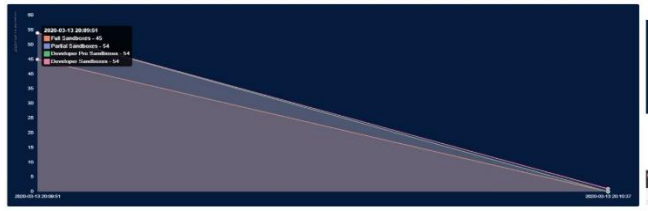
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4	Assign permission sets to two types of the users - Assign Sandbox Manager Full Admin Access permission set to the users who needs privilege to configure sandbox manager and access the graphical pages. - Assign Sandbox Manager User Access permission set to the users who needs access to graphical page only. This user will have privilege to set threshold value and configure recipient emails. Recipient emails must be verified and present in the instance.	Figure: 3  Two Sandbox Trend <table><thead><tr><th>SANDBOX NAME</th><th>LICENSE TYPE</th><th>LAST REFRESHED</th><th>DESCRIPTION</th><th>HEALTH STATUS</th><th>ADMIN EMAIL</th><th>REFRESH THRESHOLD (DAYS)</th></tr></thead><tbody><tr><td>DevOrg</td><td>DEVELOPER</td><td>2020-09-05 10:55:26 GMT</td><td></td><td>Good</td><td></td><td>30</td></tr></tbody></table>	SANDBOX NAME	LICENSE TYPE	LAST REFRESHED	DESCRIPTION	HEALTH STATUS	ADMIN EMAIL	REFRESH THRESHOLD (DAYS)	DevOrg	DEVELOPER	2020-09-05 10:55:26 GMT		Good		30
SANDBOX NAME	LICENSE TYPE	LAST REFRESHED	DESCRIPTION	HEALTH STATUS	ADMIN EMAIL	REFRESH THRESHOLD (DAYS)										
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5	Establish Connection to an instance Select “Establish Connection” Tab - Step1: “Sandbox Manager” app, select “Establish Connection” tab and enter a meaningful instance name (for e.g. “My_UAT_Instance”) and enter the DeveloperName of the named credential created for the external client app. - Step2: Click Check Connection. Once connection is verified Click Submit. - Step3: The sandbox details should be extracted and displayed. - o Sandbox refresh threshold values can be updated. - o Email can be updated to receive notification before and after refresh due date. Emails should be a verified one in the instance. - o Sandbox health detail will be displayed based on the last refresh date of the sandbox and refresh threshold. - Step4: Update total number of Dev, Dev Pro, Partial Copy, Full copy sandboxes, that this target implementation has provisioned in “Connected Instance” record. This is to track the usage vs the total procurement. - o Go to “Connected Instances” tab and click on go.	Step 1 – Establish new connection CREATE NEW CONNECTION 1. Provide the connection name and Named Credential below 2. Click “Check Connection” to verify the Named Credential exists 3. Once verified, click “Submit” to create the connection Connection name (Provide a name for you to identify the Instance) CoE-MasterOrg Named Credential MasterOrg Check Connection Step 2- Verify and Save Sandbox Manager Connection verified successfully. To continue, please click the Submit button. Important - Before proceeding 1. Please ensure that you have created a Named Credential with proper configuration 2. The Named Credential should be configured to connect to your Sandbox instance. CREATE NEW CONNECTION 1. Provide the connection name and Named Credential below 2. Click “Check Connection” to verify the Named Credential exists 3. Once verified, click “Submit” to create the connection Connection name (Provide a name for you to identify the Instance) CoE-MasterOrg Named Credential MasterOrg Check Connection Submit UPDATE EXISTING CONNECTION 1. Select an existing connection from the dropdown below 2. Update the Named Credential if needed 3. Click “Check Connection” to verify the Named Credential 4. Once verified, click “Submit” to update the connection Select Existing Connection None Check Connection Step 3 – Sandbox details														

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	○ Edit the record with instance name given in Step 1. ○ Update the total number of sandboxes in the record. - Step5: Configure email notification (Works only if ScheduleSandboxInfoMainClass is scheduled (Step6) and recipient email address is configured) ○ Notify Before Refresh Due Date – (Sends the email notification before sandbox refresh due date) ○ Notify After Refresh Due Date (Sends email notification before sandbox after refresh due date) ○ Notify Before (In Days) (Indicates how many days before notification email should be sent) ○ Notify After (In Days) (Indicates how many days after notification email should be sent)	 The screenshot shows the 'Sandbox Manager' interface. At the top, there are tabs for 'DESCRIPTION', 'HEALTH STATUS', and 'ADMIN EMAIL'. Below these, there's a 'Good' status indicator. The main content area is divided into two sections: 'Step4 - Update total number of sandboxes' and 'Step 5 - Configure email notification'. The 'Step4' section shows a table with 'Sandbox Information (Procured)' including 'Total Sandboxes', 'Total Developer Sandboxes', 'Total Developer Pro Sandboxes', 'Total Full Sandboxes', and 'Total Partial Sandboxes'. The 'Step 5' section shows 'Email Notification' settings with checkboxes for 'Notify Before Refresh Due Date' and 'Notify After Refresh Due Date', and input fields for 'Notify Before (In Days)' and 'Notify After (In Days)'.
6.	Schedule Apex Class for trend One of the features of this app is to maintain sandbox utilization trends. To achieve this, the app will collect sandbox usage at a periodic interval in batch mode. Setup the schedule job: ○ Go to “Apex Classes” ○ Click “Schedule Apex” button ○ Schedule Batch job ○ Schedule the batch class “ScheduleSandboxInfoMainClass” (recommended schedule: Once every day)	 The screenshot shows the 'Schedule Apex' interface. It has a title 'Schedule Apex' and a subtitle 'Schedule an Apex class that implements the "Schedulable" interface to be automatically executed on a weekly or monthly interval.' Below this, there's a form with fields for 'Job Name', 'Apex Class', and 'Schedule Apex Execution'. The 'Frequency' is set to 'Weekly', and the 'Recurs every week on' section is expanded, showing days of the week. The 'Start' and 'End' dates are set to '2/24/2016' and '3/24/2016' respectively, and the 'Preferred Start Time' is '6:00 PM'.
7	View Trend - Go to “Sandbox Manager 2.0 Tab” → Select the instance → View Sandbox Trend Works only if Step 7 is completed and scheduled class has ran at least once.	 The screenshot shows a line graph titled 'View Trend'. The x-axis represents time, and the y-axis represents the number of sandboxes. The graph shows a steady increase in the number of sandboxes over time, with a peak around '2016-03-13 10:05:51'. The legend indicates that the data represents 'Full Sandboxes'.

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8	Update refresh default threshold values for different types of Sandboxes Go to Set up → Custom metadata → (Manage Records) Sandbox Manager Configuration → SM App Configuration → Edit Update following details ○ Threshold value (in days): To refresh the sandbox, by sandbox type (e.g. 90 days for a full copy sandbox. This value can be modified to suit installation needs) ○ Min Threshold value (in days): To refresh the sandbox, by sandbox type – Salesforce mandates this, before a sandbox can be refreshed (e.g. minimum of 29 days before a full copy sandbox can be refreshed again).	Sandbox Manager Configuration Edit SaveSave & New Information Label SM App Configuration Sandbox Manager Configuration Name SM_App_Configuration Dev Default Threshold 15 Dev Min Threshold 1 Dev Pro Default Threshold 30 Dev Pro Min Threshold 1 Partial Copy Default Threshold 45 Partial Copy Min Threshold 5 Full Copy Default Threshold 90 Fullcopy Min Threshold 29
9.	Update Existing Connection - This feature can be used in case you want to update one of the existing connections with latest or correct named credential.	UPDATE EXISTING CONNECTION 1. Select an existing connection from the dropdown below 2. Update the Named Credential if needed 3. Click "Check Connection" to verify the Named Credential 4. Once verified, click "Submit" to update the connection Select Existing Connection -None-

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Common Troubleshooting Tips

- Error #1

error=invalid_client_id&error_description=client%20identifier%20invalid

Resolution

- **Scenario #1:** If the external client app has been created recently wait for some time for synchronizing to server.
- **Scenario #2:** Client id/client secret is not properly copied to Auth. Providers.
- **Scenario #3:** Double check connected app configuration. Make sure these are unchecked. Require Proof Key for Code Exchange (PKCE) Extension for Supported Authorization Flows, Require Secret for Web Server Flow and Require Secret for Refresh Token Flow in the OAuth Settings → Security section of the created external client app.

- Error #2

Connection test failed: The callout couldn't access the endpoint. You might not have the required permissions, or the named credential "MasterOrg2" might not exist.

Resolution:

- **Scenario #1:** Named credential developer name provided while creating/updating a connection is not correct/not exist/ after creating named credentials, authentication was not properly done.
- **Scenario #2:** Access to the created external named cred via Permission set/profile is not provided to the required user.

- Error #3

Insufficient Privileges - You do not have the level of access necessary to perform the operation you requested. Please contact the owner of the record or your administrator if access is necessary. For more information, see Insufficient Privileges Errors.

Resolution:

- **Scenario #1:** Review the permission set assignment to the user

- Error #4

No connection is established. Please use "Establish Connection" tab to create a connection.

Resolution

- **Scenario #1:** Establish a connection to an instance by navigating to the "Establish Connection" tab.

- Error #5

The Instance type is not supported by this application.

Resolution

- **Scenario #1:** Authenticated instance is a developer edition. Kindly add a production instance.

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Expected Results

Email notification & Sandbox data insight via user interface.

Note: If not receiving email notifications, please configure Organization-Wide Addresses.

Exceptions and Escalations

None